

## PORT JERVIS CITY SCHOOL DISTRICT

9 Thompson Street  
Port Jervis, New York 12771

### Additions & Alterations to PJMS Re-Bid

SED Control No.  
44-18-00-05-0-005-016

BCA Project No. 2019-011 PH1



### **Bernier, Carr & Associates, Engineers, Architects and Land Surveyors, P.C.**

798 Cascadilla Street, Suite C  
Ithaca, New York 14850  
(607) 319-4053 / Fax (315) 782-7192

Set # \_\_\_\_\_

### **VOLUME I OF III BIDDING DOCUMENTS AND TECHNICAL SPECIFICATIONS DIVISIONS 00-12, 14 & 31 – 33**

The above signed Architect/Engineer certifies that, to the best of his knowledge, information and belief, the plans and specifications are in accordance with applicable requirements of the New York State Uniform Fire Prevention and Building Code, the State Energy Conservation Code, construction standards of the State Education Department, and Part 56 of Title 12 of the Official Compilation of Codes, Rules and Regulations of the State of New York.



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**ALL CONTRACTORS:**

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Information for Bidders  
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General Conditions of the Contract for Construction: AIA A232-2019  
Shop Drawing Submittal Form  
Statement of Special Inspections – Architectural & MEP  
Statement of Special Inspections – Structural  
Wage Rate Schedules:     Additions (PRC# 2021007719)  
                                     Renovations (PRC# 2020012491)

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00 3113.1   Site Staging Plans

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|         | Geotechnical Investigation – Elwyn & Palmer – July 31, 2021 <b>(See Vol. 3)</b>                        |
|         | Geotechnical Engineering Report – WMA Engineering – September 2020 <b>(See Vol. 3)</b>                 |
| 02 2600 | Asbestos, Lead, and PCB Assessment                                                                     |
| 02 8213 | Asbestos Abatement                                                                                     |
| 02 8313 | Lead Hazard Control Activities                                                                         |
|         | Limited Hazardous Materials Survey – Atlantic Testing Laboratories – July 15, 2021 <b>(See Vol. 3)</b> |

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| 03 3000 | Cast-In-Place Concrete                                   |
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| 05 3100 | Steel Decking             |
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| 05 5000 | Metal Fabrications        |
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| 07 2500 | Weather Barriers                                |
| 07 4213 | Metal Wall Panels                               |
| 07 4646 | Fiber – Cement Siding                           |
| 07 5323 | Ethylene-Propylene-Diene-Monomer Roofing (EPDM) |
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| 09 6566 | Resilient Athletic Flooring                  |
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- Geotechnical Investigation – Elwyn & Palmer – July 31, 2021
- Geotechnical Engineering Report – WMA Engineering – September 2020
- Limited Hazardous Materials Survey – Atlantic Testing Laboratories – July 15, 2021

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## **PLAN DEPOSIT POLICY**

Plan deposit refunds shall be made in accordance with the following policy which is guided by General Municipal Law, Article 5-A, Public Contracts:

- (1) **If a bona fide bid is duly submitted** for a Contract in accordance with the requirements contained in the Plans and Specifications and said copy(s) of the Plans and Specifications is/are returned in good condition within **thirty (30) business days following the award of the Contract or rejection of bids**, the amount of the deposit return shall be as follows:
  - a. For the **first set** of Plans and Specifications returned in accordance with Paragraph (1) above, a full reimbursement of said deposit, **less postage and handling**, shall apply;
  - b. For any and all **additional sets** of Plans and Specifications returned in accordance with Paragraph (1) above, a reimbursement of the deposit, less the actual cost of reproduction of the Plans and Specifications and less the cost of postage and handling, shall apply.
- (2) **If a bona fide bid is not duly submitted** for a Contract in accordance with the requirements contained in the Plans and Specifications and said copy(s) of the Plans and Specifications is/are returned in good condition **prior to the bid opening date**, the amount of the deposit return shall be as follows:
  - a. For the **first set** of Plans and Specifications returned in accordance with Paragraph (2) above, a full reimbursement of said deposit, **less postage and handling**, shall apply;
  - b. For any and all **additional sets** of Plans and Specifications returned in accordance with Paragraph (2) above, a reimbursement of the deposit, less the actual cost of reproduction of the Plans and Specifications and less the cost of postage and handling, shall apply.
- (3) **If a bona fide bid is not duly submitted** for a Contract in accordance with the requirements contained in the Plans and Specifications and said copy(s) of the Plans and Specifications is/are **NOT** returned **prior to the bid opening date**, none of the plan deposit will be returned.

Bidders wishing documents mailed to them shall include, in addition to the document deposit, a non-refundable check of \$15.00 per set for handling and postage. Checks shall be made payable to Bernier, Carr & Associates.

It is important to note that **THE CONTRACT DOCUMENTS (PLANS AND SPECIFICATIONS) REMAIN THE PROPERTY OF THE ENGINEER'S OFFICE AND MUST BE RETURNED WITHIN THIRTY (30) BUSINESS DAYS FOLLOWING THE AWARD OF THE CONTRACT OR REJECTION OF BIDS.**

**END OF SECTION**

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## NOTICE TO BIDDERS

The Port Jervis City School District (**Owner**), invites the submission of Sealed Bid Proposals to furnish materials and labor to complete the

Addition & Alterations to Port Jervis Middle School  
Project No. 2019-011 PH1

all in accordance with the plans and specifications.

This work is to be bid under a MULTIPLE CONTRACT system covering the work of all trades under separate contracts as follows:

Contract No. 1: GC1 - General Construction  
Contract No. 2: SC1 – Site Construction  
Contract No. 3: MC1 – Mechanical Construction  
Contract No. 4: EC1 – Electrical Construction  
Contract No. 5: PC1 - Plumbing Construction  
Contract No. 7: FS1 – Food Service Equipment  
Contract No. 9: WC1 – Windows

Sealed Bid Proposals will be received until **1:00 p.m.** prevailing time, on **Wednesday, March 16, 2022**, at the

Port Jervis City School District  
District Administration Office  
9 Thompson Street  
Port Jervis, New York 12771

Where they will be opened and read aloud per **video conference**. Video conference details will be issued to all prospective bidders via addendum, one week prior to the bid opening. If you choose not to attend the video bid opening, please note bid results will be posted on BCA's website, [www.thebcgroup.com](http://www.thebcgroup.com), and on the REVplans site within 24 hours after the bid opening.

Any bid may be withdrawn without prejudice prior to the official bid submission time or any publicized postponement thereof.

Complete digital sets of Bidding Documents, drawings and specifications, may be obtained online as a download at the following website: [www.revplans.com](http://www.revplans.com) under 'public projects.'

Complete sets of Bidding Documents, Drawings and Specifications, may be obtained from REVplans, 330 Route 17A, Suite #2, Goshen, New York 10924 Tel: 1-877-272-0216, upon depositing the sum of \$100.00 for each combined set of documents. Checks or money orders shall be made payable to BCA Architects & Engineers. Plan deposit is refundable in accordance with the terms in the Instructions to Bidders to all submitting bids. Any bidder requiring documents to be shipped shall make arrangements with the printer and pay for all packaging and shipping costs.

Please note REVplans ([www.revplans.com](http://www.revplans.com)) is the designated location and means for distributing and obtaining all bid package information. Only those Contract Documents obtained in this manner will enable a prospective bidder to be identified as an official plan holder of record. The Provider takes no responsibility for the completeness of Contract Documents obtained from other sources. Contract Documents obtained from other sources may not be accurate or may not contain addenda that may have been issued

All bid addenda will be transmitted to registered plan holders via email and will be available at [www.revplans.com](http://www.revplans.com). Plan holders who have paid for hard copies of the bid documents will need to make the determination if hard copies of the addenda are required for their use and coordinate directly with the printer for hard copies of addenda to be issued. There will be no charge for registered plan holders to obtain hard copies of the bid addenda.

The Bid Documents and Contract Documents may also be examined at the office of BCA Architects & Engineers, 798 Cascadilla Street, Suite C, Ithaca, New York 14850.

Plan Deposit Policy, Plan Holders List, Pre-Bid Estimates, and a list of Addendum, if any, may also be found at [www.thebcgroup.com](http://www.thebcgroup.com) under Bidding Projects.

A **pre-bid conference** and onsite review of the project areas will be conducted by the Construction Manager (the Palombo Group) and Architect on **Tuesday, February 22, 2022**, commencing at **9:00 a.m.** at the Port Jervis Middle School, 118 E. Main Street, Port Jervis, New York. The pre-bid conference will be for all contracts.

Bids shall be prepared as set forth in the Information to Bidders, enclosed in a sealed envelope bearing on its face the name, address and phone number of the bidder and the title of the project.

Each bidder agrees to waive any claim it has or may have against the Owner, the Architect/Engineer, and the respective employees, arising out of or in connection with the administration, evaluation or recommendation of any bid.

The Owner further reserves its right to disqualify bidders for any material failure to comply with the Information for Bidders and General, Supplementary, and Special Conditions.

The Owner reserves the right to reject any or all bids and to waive any informalities or defects in such bid either before or after opening.

Each bidder must deposit with his bid, security in the form and subject to the conditions provided in the "INFORMATION FOR BIDDERS". Attention of bidders is particularly called to the requirements as to conditions of employment to be observed and to the minimum wage rates to be paid under the Contract. No bidder may withdraw his bid within 45 business days after the date of the opening of bids.

#### **ATTENTION OUT-OF-STATE BIDDERS**

Please pay particular attention to the Form of Proposal and its related forms in the project manual. Out-of-State Bidders are required to complete the "Statement Concerning Authority to do Business in the State of New York for non-New York State Companies" located in the Form of Proposal package. There are three sections that must be completed. You must also have the Non-Collusion Certificate completed and signed and if you are a corporation, you must have the Resolution completed and signed.

No bid will be considered when opened unless accompanied by a certified copy of your Authority to do Business in New York State. This is not to be confused with a sales tax certificate. The Authority can be obtained by contacting:

New York State Department of State  
Division of Corporations  
162 Washington Avenue  
Albany, NY 12231  
(518) 473-2492

If the Certificate does not accompany the bid, the bid is not valid.

In the event you are of the opinion that you are not required to obtain the Authority To Do Business in New York state, and you are not a New York State Corporation, then you should complete the *Statement Concerning Authority to do Business*. You must complete two out of three sections. The top portion must be completed by all vendors needing to complete this document and then either the *Individual Acknowledgement* or the *Corporate Acknowledgement*, depending on the status of your business.

By Order Of:

Date: \_\_\_\_\_

\_\_\_\_\_  
District Clerk

## **INFORMATION FOR BIDDERS**

### **1. SUBMISSION OF BIDS**

- (A) The Owner reserves the right to consider informal any bid not prepared and submitted in accordance with the provisions of this Information for Bidders and the General Conditions and to waive any informalities in or to reject any or all bids either before or after opening. No bidder may withdraw a bid within forty-five (45) business days after the actual date of the opening thereof.

### **2. PREPARATION OF PROPOSAL**

- (A) Bidders shall prepare their bids on the "Form of Proposal" sheets furnished by the Engineer and available at the Engineer's Office. All blank spaces pertinent to the Contract category proposal must be filled in, in both words and figures, with the unit price for the item or the lump sum for which the proposal is made.
- (B) All bids together with bid security must be submitted in sealed envelopes bearing on the outside of the envelope the name of the bidder, his address, the name of the project and the branch of work covered by the bid. If forwarded by mail or other form of courier, the sealed envelope containing the proposal, marked as above, must be enclosed in another envelope addressed to the Owner. Each bidder shall assume the risk of any delay in the mail or in handling of mail by employees of the Owner or others.
- (C) **IMPORTANT:** In the event that a prospective bidder, after securing drawings and specifications, decides not to present a proposal for the work, it is requested that the Engineer be so notified at earliest possible moment prior to the date of receipt of bids. All drawings and specifications shall be returned to the Engineer's Office and if returned in good condition within 30 days following the award of the Contract covered by such Plans and Specifications, a partial reimbursement in an amount equal to the full amount of such deposit less the actual cost of reproduction of the Plans and Specifications, and less postage and handling, shall be made.

### **3. BID PROPOSALS AND BIDDERS**

- (A) The Owner reserves the right to reject any or all bid proposals and to waive any informalities or defects in such proposals whether before or after the time of opening of bids.
- (B) Bidders may not withdraw proposals within forty-five (45) days following date of opening of bids.
- (C) All costs in connection with preparation and submission of bid proposals shall be borne by the bidders.
- (D) Bidders shall submit promptly upon request of the Owner or Engineer documentary evidence as to financial, technical, and practical ability to carry out the work.

### **4. QUALIFICATIONS OF BIDDERS**

- (A) The Owner may make such investigation as he deems necessary to determine the ability of the bidder to perform the work. The bidder shall furnish to the Owner all information and data for this purpose as the Owner may request including but not limited to current financial statements and a list of completed projects (within the last three years) with names and addresses of Owners.
- (B) The Owner reserves the right to reject any bid if the evidence submitted by or investigation of such bidder fails to satisfy the Owner that such bidder is properly qualified to carry out the obligations of the contract and to complete the work contemplated therein.
- (C) Conditional bids will not be accepted.

### **5. BID SECURITY**

- (A) Each bid must be accompanied by certified check of the bidder or by a bid bond prepared on a standard approved form, duly executed by the bidder as principal, and having as surety thereon a surety company authorized to do business within the State of New York.

- (B) Bid security shall be in an amount not less than 5% of the base bid or not less than 5% of the sum of base bids where such base bids may be considered cumulative. Such checks will be returned to all except the three lowest formal bidders, within three working days after the formal opening of bids & the remaining cash or checks will be returned to the three lowest bidders within 48 hours after the Owner and the accepted bidder have executed a contract. If no contract has been so executed within 45 days after the opening of bids, bid security will be returned upon demand of the bidder at any time thereafter so long as he has not been notified of the acceptance of his bid.

6. LIQUIDATED DAMAGES FOR FAILURE TO ENTER INTO CONTRACT

- (A) The successful low bidder, upon his failure or refusal to execute and deliver the contract and required bonds and insurance within 15 days after he has received notice of the acceptance of his bid, shall forfeit to the Owner, as liquidated damages for such failure or refusal, the security deposited with his bid, as specified in Paragraph 5.

7. CONDITIONS OF WORK

- (A) Each bidder must inform himself fully of the conditions relating to the construction and labor under which the work is now being or will be performed. Failure to do so will not relieve a successful bidder of his obligations to furnish all material and labor necessary to carry out the provisions of the contract documents and to complete the contemplated work for the consideration set forth in his bid.
- (B) Insofar as possible, the Contractor in the carrying out of his work must employ such methods or means as will not cause any interruption of or interference with the work of any other Contractor.

8. ADDENDA AND INTERPRETATIONS

- (A) No interpretations of the plans, specifications or other contract documents will be made to any bidder orally. **All requests for such interpretations shall submitted in writing to BCA Architects & Engineers (on the attached RFI Form).** To be given consideration a request for interpretation the RFI form must be received at least six days prior to the date fixed for the opening of bids. Any and all interpretations and any supplemental instructions will be issued in the form of written addenda. If issued, the addenda will be sent by UPS or via facsimile, to respective addresses furnished for such purposes, not later than two (2) days prior to the day fixed for opening Bids. Failure of any Bidder to receive any such addenda shall not relieve said Bidder from any obligation under his Bid as submitted. All addenda so issued shall become part of the Contract Documents.
- (B) Prospective Bidders are cautioned concerning the use of a Post Office Box address as facsimile addenda cannot be sent to Post Office Boxes.

9. SECURITY FOR FAITHFUL PERFORMANCE

- (A) Simultaneously with his delivery of the executed contract, the successful bidder must deliver to the Owner three (3) originals of an executed bond in the amount of 100% of the accepted bid as security for the faithful performance of the contract and for the payment of all persons performing labor or furnishing materials in connection therewith, prepared in the standard form of Performance Bond, Labor and Materials Payment Bond, AIA Form A312-2010 and having as surety thereon such surety company or companies as are acceptable to and approved by the Owner, and as are authorized to transact business in New York State. Each Bidder must obtain and submit with his Bid the Statement of Surety's Intent attached to the Bid form, completed and signed by a duly authorized surety company licensed to do business in New York State. This requirement will not apply in the case of contracts for supplies only and involving no labor on the site.
- (B) All Certificates of Insurance and Surety Bonds shall be delivered to the Engineer following award and at least one (1) week before the initial Pre-Construction Meeting in order to provide a timely and proper review of these documents prior to execution of the Contracts.

10. POWER OF ATTORNEY

- (A) Attorneys in fact who sign bid bonds or contracts bonds must file with each bond a certified copy of their power of attorney to sign said bonds.

11. STATE LAWS AND REGULATIONS

- (A) The Contractor and each and every sub-contractor performing the work at the site of the project to which this contract relates shall comply with the applicable provisions of the "Labor Law," as amended, of the State of New York, and all other applicable laws and regulations governing such activities.
- (B) Dust Hazards:
1. If, in the construction of the work covered by the Contract, a harmful dust hazard is created for which appliances or methods for the elimination of the dust have been approved by the Board of Standards and Appeals, such appliances or methods shall be installed and maintained and effectively operated by the Contractor at his expense.
  2. The Contract shall be void and of no effect unless the Contractor complies with the provisions of this subdivision of the Contract and Labor Law Section 222-a.
- (C) Non-Collusion Certification: Each bidder shall complete the Non-Collusive Bidding Certification attached to the Bid form.
- (D) Worker's Compensation: This Contract shall be void and of no effect unless the person or corporation making or performing such contract shall secure compensation for the benefit of, and keep insured during the life of such contract, such employees, in compliance with the provision of the Worker's Compensation Law and General Municipal Law Section 108.
1. Effective September 9, 2007, all out-of-state employers (contractors and sub-contractors) working in New York State will be required to carry full, statutory New York State Workers' Compensation Insurance Policy. New York must be listed in Item 3A on the Information Page of the employer's workers' compensation policy in order to meet this requirement.
- (E) Lien Law:
1. The attention of the Contractor is invited to the provisions of the Lien Law of the State of New York, wherein funds received by a contractor for a public improvement are declared to constitute trust funds in the hands of such contractor to be applied first to the payment of certain claims.
- (F) The November 9, 1997 guidelines set forth by the New York State Department of Labor regarding Certified Payrolls are as follows:
1. "Every contractor and sub-contractor shall submit to the department of jurisdiction within thirty days after issuance of its first payroll, and every thirty days thereafter, a transcript of the original payroll record, as provided by this article, subscribed and affirmed as true under penalties of perjury. The DEPARTMENT OF JURISDICTION shall be required to receive and maintain such payroll records. The original payrolls or transcripts shall be preserved for three years from the completion of the work on the awarded project." *Excerpted from "The Fair Contractor"*
  2. Payroll shall be sent direct to the Owner. Bernier, Carr & Associates cannot accept the certified payrolls nor do we require copies of the transmittal to the Owner.
- (G) This provision is an addition to the existing prevailing wage rate law, Labor Law 220, Section 220-h. It requires that on all public work projects of at least \$250,000.00, all laborers, workers and mechanics working on the site, be certified as having successfully completed the OSHA 10-hour construction safety and health course. It further requires that the advertised bids and contracts for every public work contract of at least \$250,000.00, contain a provision of this requirement.

12. FEDERAL REGULATIONS

- (A) Each Contractor and every sub-contractor performing work (including but not limited to repair, renovation, reconstruction and painting) that will disturb lead based paint existing within the project that house children under the age of six (6) shall comply with US EPA 40 CFR 745.80 Subpart E (also known as a Lead Renovation, Repair and Painting Rule) effective April 22, 2010. The contractor (firm) and the individuals completing the work shall be certified in accordance with the US EPA requirements and shall provide copies of such certification to the Owner prior to the commencement of all work.

13. OBLIGATION OF BIDDER

- (A) At the time of the opening of bids each bidder will be presumed to have inspected the site and to have read and to be thoroughly familiar with the drawings and contract documents including all Addenda. The failure or omission of any bidder to receive or examine any form, instrument, or document shall in no way relieve any bidder from any obligation in respect to his bid.

14. EXEMPTION FROM SALES AND COMPENSATING USE TAXES

- (A) The Owner is exempt from payment of sales and compensation taxes of the State of New York and of cities, counties and other sub-divisions of the State, of materials sold to it pursuant to the provisions of this contract. These taxes are not to be included in bids.
- (B) Contractor's purchases of tangible personal property which do not become an integral component part of the exempt organization's real property and are consumed by the Contractor as well as purchases of taxable services, are subject to tax.

15. TIME OF COMPLETION

- (A) Bidders are advised that time of completion is of the essence and shall be taken into account, by the Bidders, in the preparation of the proposals.
- (B) See Milestone Construction Schedule Specification Section 00 3113 for completion date.
- (C) Refer to Paragraph 8.3 and 8.4 of the Supplementary Conditions for information concerning damages for stretch out and delay.

16. POST BID INFORMATION

- (A) Within 96 hours of the Bid Opening the apparent low bidder shall furnish in writing, the following information to the Engineer if so requested.
  - 1. Statement that project can be completed within established time.
  - 2. Preliminary progress schedule showing dates for major elements of construction and dates by which major sub-contracts will be awarded.
  - 3. List of proposed major sub-contractors.
  - 4. AIA - Contractor Qualification Statement.
  - 5. Financial Statement.
  - 6. List of References.

17. APPROVAL OF SUB-CONTRACTORS

- (A) Requests for approval of major sub-contractors, and other sub-contractors as may be designated by the Engineer, shall include a written statement by the proposed sub-contractor that delivery and installation of materials and equipment can and will be performed in accordance with the approved progress schedule.
- (B) After bid opening, if the Engineer or Owner require the identity of certain Subcontractors, Suppliers or other persons and organizations (including those who are to furnish the principal items of material and equipment) to be submitted, the apparent Successful Bidder, and any other Bidder so requested, shall within seven (7) days after the request submit to the Engineer a list of all such Subcontractors, Suppliers, and other persons or organizations proposed for those portions of the work for which such identification is required. Such list shall be accompanied by an experience statement with pertinent information regarding similar projects and other evidence of qualification.
- (C) Subcontractors must be persons or firms that perform work with persons either in their direct employ or over whom they have personal and direct subdivision.

18. EXAMINATION OF SITES

- (A) Bidders shall be presumed to have visited the site prior to submission of proposals and to have familiarized themselves with surface and sub-surface conditions, existing structures and any and all conditions that may in any way affect the work. Failure to have so acted shall in no way relieve bidders from any obligations in respect to their bids.

19. EQUIVALENT/ "OR EQUAL" ITEMS

- (A) In the Specifications, two or more kinds, types, brands, or manufacturers or materials are regarded as the required standard of quality and are presumed to be equal. The Contractor may select one of these items or, if the Contractor desires to use any kind, type, brand, or manufacturer or material other than those named in the specifications, they shall indicate in writing, and prior to award of contract, what kind, type, brand, or manufacturer is included in the base bid for the specified item.

20. HAZARDOUS WASTES

- (A) It shall be the responsibility of all Contractors and subcontractors to strictly adhere to all Federal, State and Local Regulations pertaining to the use, transportation and disposal of hazardous wastes. These are to include, but not be limited to, the following:
1. Asbestos-containing materials
  2. Contamination of the atmosphere
  3. Contamination of soil surface or subsurface
  4. Contamination of water or water courses
  5. Contamination of objects or any other intangible matter
- (B) At the time of project close-out, each Contractor will be required to submit a post-construction certification that they have complied with the requirements as outlined.

21. HAZARDOUS MATERIALS

- (A) It shall be the responsibility of all contractors and subcontractors to furnish materials free of hazardous materials including but not limited to lead, asbestos, PCBs, and any and all material deemed hazardous by the EPA.

22. AWARD OF CONTRACT

- (A) The Owner reserves the right to reject any and all Bids, to waive any and all informalities not involving price, time or changes in the work and to negotiate contract terms with the Successful Bidder, and the right to disregard all non-conforming, non-responsive, unbalanced, or conditional Bids. Also, the Owner reserves the right to reject the Bid of any Bidder if the Owner believes that it would not be in the best interest of the Project to make an award to that Bidder, whether because the bid is not responsive, or the Bidder is unqualified or of doubtful financial ability or fails to meet any other pertinent standard or criteria established by the Owner. Discrepancies in the multiplication of units of work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.
- (B) In evaluating Bids, the Owner will consider the qualifications of the Bidders, whether or not the Bids comply with the prescribed requirements, and such supplier alternatives, unit prices and other data, as may be requested in the Bid Form or prior to the Notice of Award.
- (C) The Owner may consider the qualifications and experience of Subcontractors, Suppliers, and other persons and organizations proposed for those portions of the work as to which the identity of Subcontractors, Suppliers, and other persons and organizations must be submitted as provided in the Supplementary Conditions. The Owner may also consider the operating costs, maintenance requirements, performance data, and guarantees of major items of materials and equipment to be submitted prior to the Notice of Award.

- (D) The Owner may conduct such investigations as the Owner deems necessary to assist in the evaluation of any Bid and to establish the responsibility, qualifications, and financial ability of Bidders, proposed Subcontractors, Suppliers, and other personal and organizations to perform and furnish the work in accordance with the Contract Documents to Owner's satisfaction within the prescribed time.

23. BID REQUIREMENTS AND CONSIDERATIONS

- (A) If the Bid is made by a corporation, the official corporation name shall be given, and the Bid shall be signed by an authorized officer of the corporation, and the corporate seal affixed. If the Bid is made by a partnership, the official name as it appears on the Assumed Name Certificate shall be given and the Bid shall be signed by a general partner. If the Bid is made by a sole proprietorship, the Bid shall be signed by the individual Owner.
- (B) All attachments, certifications or acknowledgments attached to the Bid shall be executed in the same manner as the Bid.
- (C) Where noted in the Bid, Bidders must submit a separate price for all materials and supplies required for the construction of the project, and a separate price, exclusive of materials and supplies, for all work and labor required for the construction of the Project. In such cases, Bidders must also submit a total Bid for the entire Project which is computed by adding together the Bid for materials and supplies and the Bid for work and labor.

24. MINIMUM WAGE RATE SCHEDULE

- (A) Wage Rates: In accordance with Sections 220, Sub-division 3, and 220-D of the New York State Labor Law, there shall be paid each employee engaged in work on the project under this contract in the trades or occupations, not less than the prevailing rate set for the trade or occupation in which he is engaged.
- (C) In the event that the Contractor wishes to employ occupations other than that listed in these specifications, he shall request the establishment of a rate for that occupation and they shall pay the rate so established. This payment shall be retroactive if applicable.
- (D) Wage Rate Redetermination: New Wage Rates may be re-determined during the course of work under this contract by the New York State Department of Labor; Contractors shall use the re-determined Wage Rates when applicable and shall compensate for this increase in their bid proposal. The contract will not be changed nor will the Owner pay for any Wage Rate increase after the bid proposals have been submitted. All updates, corrections, posted on the 1st business day of each month, and future copies of the annual determination are available on the Department's website [www.labor.state.ny.us](http://www.labor.state.ny.us). Updated PDF copies of your schedule can be accessed by entering the assigned PRC# at <http://wpp.labor.state.ny.us/wpp/showFindProject.do?method=showIt>.

**END OF SECTION**



**Port Jervis City School District**  
Additions & Alterations to PJMS  
Project No. 2019-011 PH1

**REQUEST FOR INFORMATION**

Submit to BERNIER, CARR & ASSOCIATES, ENGINEERS, ARCHITECTS AND LAND SURVEYORS, P.C.  
798 Cascadilla Street, Suite C, Ithaca, New York 14850

Attention (Project Manager): BarbaraJean Ligi [bligi@thebcgroup.com](mailto:bligi@thebcgroup.com)

Drawing Reference: \_\_\_\_\_ Detail Reference: \_\_\_\_\_

Date: \_\_\_\_\_ Request No.: \_\_\_\_\_

**Description of RFI:** \_\_\_\_\_

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Contractor: \_\_\_\_\_

Name: \_\_\_\_\_

Email: \_\_\_\_\_  
(required)

Phone: \_\_\_\_\_ Fax: \_\_\_\_\_

**Response:** \_\_\_\_\_

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Architect/Engineer or Field Representative

Signed: \_\_\_\_\_

Date: \_\_\_\_\_



**FORM OF PROPOSAL  
Port Jervis City School District  
Additions & Alterations to PJMS**

**BID DESCRIPTION**

**CONTRACT NO. 1: GC1 - GENERAL CONSTRUCTION**

Work under this Contract may generally be described to include, but not be limited to the following:

Procurement and general requirements; and all other work and related materials as indicated on the Contract Drawings, Multiple Contracts Summary, as specified herein, and as required for the complete and proper execution of the Work.

This outline is a general indication of the requirements of this Contract and is not intended to be all inclusive. The complete Contract Documents in their entirety, to include any and all addenda, form the basis of the responsibility of this Contract.

Each contractor is advised that the specification sections in Division 01 - General Requirements apply distinctly to each Prime Contractor and the balance of the technical specifications apply to each Contractor (as appropriate) for the accomplishment of his work.

All work of this contract shall be coordinated with other Prime Contractors involved in the project. All work shall additionally be coordinated with all other activities, construction, or others at each site throughout the progress of the work of this project.

The Contractor shall use all means possible and shall be responsible for coordinating the installation of all materials of this Contract with work of all other trades involved with this project. All work shall be done in strict accordance with the Contract Documents and in compliance with all applicable Local, State and Federal Codes.

Prior to the Bid Date of this project, the Contractor shall be completely responsible for visiting the project site to become completely familiar with the scope of this project.

Each bidder agrees to waive any claim it has or may have against the Owner, the Architect/Engineer, and the respective employees, arising out of or in connection with the administration, evaluation or recommendation of any bid.

It shall be completely understood that the use of asbestos containing materials in this project is strictly forbidden and all materials are provided in accordance with the Federal Asbestos Hazard Emergency Response Act (AHERA), and the New York State Asbestos Safety Act (SASA).

In addition to those items in the Base Bid, the Contractor shall further sub-divide his bid proposal as described in the following bid items, alternates, and/or unit prices. The Contractor shall include in the Base Bid all of the work of this Contract not specifically described in a Bid Item or Alternative. The Owner reserves the right to accept any and/or all of the Bid Items and/or Alternates or any combination thereof and to waive any informalities or defects in the bid proposals either before or after opening.

**Bid Items:** As described in Specification Section 01 2100 – Allowances

- Bid Item No. 1 – Field Directive Allowance

**Alternates:** As described in Specification Section 01 2300 – Alternates

- Alternate No. GC-1 – Internal Performance Platform
- Alternate No. GC-2 – Performance Platform off Gym
- Alternate No. GC-3 – Main Cupola Restoration
- Alternate No. GC-4 – Electrically Raised Gym Curtain Divider
- Alternate No. GC-5 – VCT Flooring in lieu of LVT Flooring

**FORM OF PROPOSAL  
Port Jervis City School District  
Additions & Alterations to PJMS**

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**FORM OF PROPOSAL**  
**Port Jervis City School District**  
**Additions & Alterations to PJMS**

The Undersigned \_\_\_\_\_  
Contractor

Address

Zip Code

hereby certifies that he/she has examined and fully comprehends the requirements and intent of the drawings and specifications as prepared by BCA Architects & Engineers, for **CONTRACT NO. 1: GC1 – GENERAL CONSTRUCTION** to furnish all labor, materials, supplies, plant and equipment and other facilities to properly perform the work for the total:

**BASE BID**

*BASE BID SUM of*

\_\_\_\_\_ DOLLARS (\$ \_\_\_\_\_)

*Bid Item No. 1 – Field Directive Allowance*

\_\_\_\_\_ Five Hundred Thousand DOLLARS (\$ 500,000.00 )

**TOTAL BASE BID (Base Bid and Bid Item No. 1 Included)**

\_\_\_\_\_ DOLLARS (\$ \_\_\_\_\_)

**ALTERNATES**

*Alternate No. GC-1 – Internal Performance Platform*

\_\_\_\_\_ DOLLARS (\$ \_\_\_\_\_)  
ADD / DEDUCT

*Alternate No. GC-2 – Performance Platform off Gym*

\_\_\_\_\_ DOLLARS (\$ \_\_\_\_\_)  
ADD / DEDUCT

*Alternate No. GC-3 – Main Cupola Restoration*

\_\_\_\_\_ DOLLARS (\$ \_\_\_\_\_)  
ADD / DEDUCT

*Alternate No. GC-4 – Electrically Raised Gym Curtain Divider*

\_\_\_\_\_ DOLLARS (\$ \_\_\_\_\_)  
ADD / DEDUCT

*Alternate No. GC-5 – VCT Flooring in lieu of LVT Flooring*

\_\_\_\_\_ DOLLARS (\$ \_\_\_\_\_)  
ADD / DEDUCT

Receipt of the following Addenda is hereby acknowledged:

No. \_\_\_\_\_ dated \_\_\_\_\_  
No. \_\_\_\_\_ dated \_\_\_\_\_  
No. \_\_\_\_\_ dated \_\_\_\_\_  
No. \_\_\_\_\_ dated \_\_\_\_\_

No. \_\_\_\_\_ dated \_\_\_\_\_  
No. \_\_\_\_\_ dated \_\_\_\_\_  
No. \_\_\_\_\_ dated \_\_\_\_\_  
No. \_\_\_\_\_ dated \_\_\_\_\_

\_\_\_\_\_  
(Name of Bidder)

Signed \_\_\_\_\_  
Title \_\_\_\_\_  
Street \_\_\_\_\_  
City/State \_\_\_\_\_ Zip Code \_\_\_\_\_  
Telephone \_\_\_\_\_  
Fax \_\_\_\_\_  
Cell Phone \_\_\_\_\_  
Email \_\_\_\_\_  
Date \_\_\_\_\_, 20\_\_

## NON-COLLUSIVE BIDDING CERTIFICATE

By submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid, each party thereto certifies as to its own organization, under penalty of perjury, that to the best of his knowledge and belief:

- (1) the prices in this bid have been arrived at independently without collusion, consultation, communication, or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other bidder or with any competitor;
- (2) unless otherwise required by law, the prices which have been quoted in this bid have not been knowingly disclosed by the bidder and will not knowingly be disclosed by the bidder prior to opening, directly or indirectly to any other bidder or to any competitor; and
- (3) no attempt has been made or will be made by the bidder to induce any other person, partnership or corporation to submit or not to submit a bid for the purpose of restricting competition.

(Signed) \_\_\_\_\_

\_\_\_\_\_  
Title

### RESOLUTION - for corporate bidders only

RESOLVED that \_\_\_\_\_ be authorized to sign and submit the bid or proposal  
(individual)  
of this corporation for the following project

\_\_\_\_\_  
(describe project)

and to include in such bid or proposal the certificate as to non-collusion required by Section 103-d of the General Municipal Law as the act and deed of such corporation, and for any inaccuracies or misstatements in such certificate this corporate bidder shall be liable under the penalties of perjury.

The foregoing is a true and correct copy of the resolution adopted by \_\_\_\_\_  
corporation at a meeting of its Board of Directors held on the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

SEAL OF CORPORATION)

\_\_\_\_\_  
Secretary

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**Statement Concerning Authority to do Business  
in the State of New York for non-New York State Companies**

**Please complete all requested information in both sections below.**

A certificate of authority is required of out of state companies if the company has property, employees or agents used in conducting its business activities within the state of New York. Generally, business activities are defined as having an office in the state, making sales or promotional calls within the state, delivering products or merchandise and/or making service calls within the state.

Companies conducting mail order activities with New York customers are not considered doing business within New York State if the company **has no property, employees, agents and/or representatives in or, traveling into the state.** \_\_\_\_\_ is such a mail order company, and as such, is not  
(Fill in company name)  
required to hold a Certificate of Authority.

Performance under the attached bid will not result in any action that would result in a requirement to obtain a Certificate as all commerce will be conducted by mail. It is the opinion of the legal counsel for this firm:

Name \_\_\_\_\_  
Address \_\_\_\_\_ (Complete the information)  
Address \_\_\_\_\_  
Telephone \_\_\_\_\_

that this firm is not required to file an Authority to do Business in New York State as required by Section 1301 of the NYS Business Corporate Law.

=====

**Complete one of the following two acknowledgements in addition to above information.**

Individual Acknowledgment for Sole Proprietors or Partnerships

\_\_\_\_\_  
Signature

State of \_\_\_\_\_  
County of \_\_\_\_\_ ss.

On this \_\_\_\_\_ day of \_\_\_\_\_ two thousand and \_\_\_\_\_ before me, the subscriber, personally appeared \_\_\_\_\_ to me personally known and known to me to be the same person described in and who executed the within Instrument, and he/she acknowledged to me that he/she executed the same.

\_\_\_\_\_  
Notary Public

Corporate Acknowledgment for corporations or LLC's

\_\_\_\_\_  
Signature

State of \_\_\_\_\_  
County of \_\_\_\_\_ ss.

On this \_\_\_\_\_ day of \_\_\_\_\_ two thousand and \_\_\_\_\_ before me personally known, who, being by me duly sworn did depose and say that he/she resides in \_\_\_\_\_ that he/she is the \_\_\_\_\_ of \_\_\_\_\_ the corporation described in, and which executed, the above Instrument; that he/she knows the seal of said corporation; that the seal affixed to said Instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said corporation; and that he/she signed his/her name thereto by like order.

\_\_\_\_\_  
Notary Public

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## FEDERAL LAW CERTIFICATION

I, \_\_\_\_\_ [insert name], the \_\_\_\_\_ [insert title] of  
\_\_\_\_\_ [name of company], \_\_\_\_\_ [Nine Digit DUNS  
Number] hereby swear or affirm that the following is true:

1. The company, its principles or entities related to the company named above, is not now, nor ever has been, debarred from contracting with the United States Government or any State government.
2. The company is not now under investigation by any agency of the Federal Government or the government of any State for any actions by the company, its principles or any related entity, for any alleged malfeasance or misfeasance of any kind or nature which could lead to a debarment from governmental contracting or criminal prosecution, as well as render any contracts signed in reliance on this certification voidable by the party relying on this certification. This includes any violations related to the Davis-Bacon Act, the federal prevailing wage statute, the Copeland Act and the Contract Hours and Safety Standards Act which covers hours of work and safety standards in federal public contracting.
3. I have full legal authority under my company's organizational documents or bylaws to make this certification on the company's behalf.
4. I understand that submission of a false statement on this document will subject me to criminal prosecution.

\_\_\_\_\_  
(Date)

\_\_\_\_\_  
(Signature)

**THIS FORM MUST BE COMPLETED AND SUBMITTED WITH THE BID**

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## STATEMENT OF SURETY'S INTENT

To:

\_\_\_\_\_  
(Owner)

We have reviewed the Bid of \_\_\_\_\_

\_\_\_\_\_  
(Contractor)

of \_\_\_\_\_

\_\_\_\_\_  
(Address)

for \_\_\_\_\_

\_\_\_\_\_  
(Project)

Bids for which will be received on \_\_\_\_\_

\_\_\_\_\_  
(Bid Opening Date)

and wish to advise that should this Bid of the Contractor be accepted, and the Contract awarded to him, it is our present intention to become surety on the performance bond and labor and material bond required by the Contract.

Any arrangement for the bonds required by the Contract is a matter between the Contractor and ourselves and we assume no liability to you or third parties if, for any reason, we do not execute the requisite bonds.

We are duly authorized to do business in the State of New York.

Attest:

\_\_\_\_\_

\_\_\_\_\_  
(Surety's Authorized Signature)

**Attach Power of Attorney**

(Corporate Seal, if any.  
If no seal, write "No Seal"  
across this place and sign.)

**THIS FORM MUST BE COMPLETED AND SUBMITTED WITH THE BID**

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**CERTIFICATION OF COMPLIANCE WITH THE IRAN DIVESTMENT ACT**

As a result of the Iran Divestment Act of 2012 (the "Act"), Chapter 1 of the 2012 Laws of New York, a new provision has been added to State Finance Law (SFL) § 165-a and New York General Municipal Law § 103-g, both effective Aprils 12, 2012. Under the Act, the Commissioner of the Office of General Services (OGS) will be developing a list of "persons" who are engaged in "investment activities in Iran" (both are defined terms in the law) (the "Prohibited Entities List"). Pursuant to SFL § 165-a(3)(b), the initial list is expected to be issued no later than 120 days after the Act's effective date at which time it will be posted on the OGS website.

By submitting a bid in response to this solicitation or by assuming the responsibility of a Contract awarded hereunder, each Bidder/Contractor, any person signing on behalf of any Bidder/Contractor and any assignee or subcontractor and, in the case of a joint bid, each party thereto, certifies, under penalty of perjury, that once the Prohibited Entities List is posted on the OGS website, that to the best of its knowledge and belief, that each Bidder/Contractor and any subcontractor or assignee is not identified on the Prohibited Entities List created pursuant to SFL § 165-a(3)(b).

Additionally, Bidder/Contractor is advised that once the Prohibited Entities List is posted on the OGS Website, any Bidder/Contractor seeking to renew or extend a Contract or assume the responsibility of a Contract awarded in response to this solicitation must certify at the time the Contract is renewed, extended or assigned that it is not included on the Prohibited Entities List.

During the term of the Contract, should the School District receive information that a Bidder/Contractor is in violation of the above-referenced certification, the School District will offer the person or entity an opportunity to respond. If the person or entity fails to demonstrate that he/she/it has ceased engagement in the investment which is in violation of the Act within 90 days after the determination of such violation, then the School District shall take such action as may be appropriate including, but not limited to, imposing sanctions, seeking compliance, recovering damages or declaring the Bidder/Contractor in default. The School District reserves the right to reject any bid or request for assignment for a Bidder/Contractor that appears on the Prohibited Entities List prior to the award of a contract and to pursue a responsibility review with respect to any Bidder/Contractor that is awarded a contract and subsequently appears on the Prohibited Entities List.

I, \_\_\_\_\_, being duly sworn, deposes and says that he/she is the \_\_\_\_\_ of the \_\_\_\_\_ Corporation and that neither the Bidder/ Contractor nor any proposed subcontractor is identified on the Prohibited Entities List.

\_\_\_\_\_  
SIGNED

SWORN to before me this

\_\_\_\_\_ day of \_\_\_\_\_

20\_\_\_\_

Notary Public: \_\_\_\_\_

**EITHER THIS FORM OR THE "DECLARATION OF BIDDER'S INABILITY TO PROVIDE CERTIFICATION OF COMPLIANCE WITH THE IRAN DIVESTMENT ACT" FORM ON THE FOLLOWING PAGE MUST BE COMPLETED AND SUBMITTED WITH THE BID**

**DECLARATION OF BIDDER'S INABILITY TO PROVIDE CERTIFICATION OF COMPLIANCE  
WITH THE IRAN DIVESTMENT ACT**

***Bidders shall complete this form if they cannot certify that the bidder/contractor or any proposed subcontractor is not identified on the Prohibited Entities List. The District reserves the right to undertake any investigation into the information provided herein or to request additional information from the bidder.***

Name of the Bidder: \_\_\_\_\_

Address of Bidder: \_\_\_\_\_

Has bidder been involved in investment activities in Iran? \_\_\_\_\_

Describe the type of activities including but not limited to the amounts and the nature of the investments (e.g. banking, energy, real estate) \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

If so, when did the first investment activity occur? \_\_\_\_\_

Have the investment activities ended? \_\_\_\_\_

If so, what was the date of the last investment activity? \_\_\_\_\_

If not, have the investment activities increased or expanded since April 12, 2012? \_\_\_\_\_

Has the bidder adopted, publicized, or implemented a formal plan to cease the investment activities in Iran and to refrain from engaging in any new investments in Iran? \_\_\_\_\_

If so, provide the date of the adoption of the plan by the bidder and proof of the adopted resolution, if any and a copy of the formal plan. \_\_\_\_\_

In detail, state the reasons why the bidder cannot provide the Certification of Compliance with the Iran Divestment Act below (additional pages may be attached):

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

I, \_\_\_\_\_ being duly sworn, deposes and says that he/she is the \_\_\_\_\_ of

the \_\_\_\_\_ Corporation and the foregoing is true and accurate.

\_\_\_\_\_  
SIGNED

SWORN to before me this

\_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_

Notary Public: \_\_\_\_\_



**FORM OF PROPOSAL  
Port Jervis City School District  
Additions & Alterations to PJMS**

**BID DESCRIPTION**

**CONTRACT NO. 2: SC1 – SITE CONSTRUCTION**

Work under this Contract may generally be described to include, but not be limited to the following:

Procurement and general requirements; and all other work and related materials as indicated on the Contract Drawings, Multiple Contracts Summary, as specified herein, and as required for the complete and proper execution of the Work.

This outline is a general indication of the requirements of this Contract and is not intended to be all inclusive. The complete Contract Documents in their entirety, to include any and all addenda, form the basis of the responsibility of this Contract.

Each contractor is advised that the specification sections in Division 01 - General Requirements apply distinctly to each Prime Contractor and the balance of the technical specifications apply to each Contractor (as appropriate) for the accomplishment of his work.

All work of this contract shall be coordinated with other Prime Contractors involved in the project. All work shall additionally be coordinated with all other activities, construction, or others at each site throughout the progress of the work of this project.

The Contractor shall use all means possible and shall be responsible for coordinating the installation of all materials of this Contract with work of all other trades involved with this project. All work shall be done in strict accordance with the Contract Documents and in compliance with all applicable Local, State and Federal Codes.

Prior to the Bid Date of this project, the Contractor shall be completely responsible for visiting the project site to become completely familiar with the scope of this project.

Each bidder agrees to waive any claim it has or may have against the Owner, the Architect/Engineer, and the respective employees, arising out of or in connection with the administration, evaluation or recommendation of any bid.

It shall be completely understood that the use of asbestos containing materials in this project is strictly forbidden and all materials are provided in accordance with the Federal Asbestos Hazard Emergency Response Act (AHERA), and the New York State Asbestos Safety Act (SASA).

In addition to those items in the Base Bid, the Contractor shall further sub-divide his bid proposal as described in the following bid items, alternates, and/or unit prices. The Contractor shall include in the Base Bid all of the work of this Contract not specifically described in a Bid Item or Alternative. The Owner reserves the right to accept any and/or all of the Bid Items and/or Alternates or any combination thereof and to waive any informalities or defects in the bid proposals either before or after opening.

**Bid Items:** As described in Specification Section 01 2100 – Allowances

- Bid Item No. 1 – Field Directive Allowance
- Bid Item No. 2 – Unsuitable Soils (1 to 100 CY)
- Bid Item No. 3 – Contaminated Ground Water Allowance (1 to 500 Gallons)

**Alternates:** As described in Specification Section 01 2300 – Alternates

- Alternate No. SC-1 – Internal Performance Platform
- Alternate No. SC-2 – Performance Platform off Gym

**FORM OF PROPOSAL  
Port Jervis City School District  
Additions & Alterations to PJMS**

**Unit Prices:** As described in Specification Section 01 2200 – Unit Prices

- Unit Price No. 1 – Unsuitable Soils (per CY)
- Unit Price No. 2 – Contaminated Water Allowance (per Gallon)

**FORM OF PROPOSAL  
Port Jervis City School District  
Additions & Alterations to PJMS**

The Undersigned \_\_\_\_\_  
Contractor

Address

Zip Code

hereby certifies that he/she has examined and fully comprehends the requirements and intent of the drawings and specifications as prepared by BCA Architects & Engineers, for **CONTRACT NO. 2 – SITE CONSTRUCTION** to furnish all labor, materials, supplies, plant and equipment and other facilities to properly perform the work for the total:

**BASE BID**

*BASE BID SUM of*

\_\_\_\_\_ DOLLARS (\$ \_\_\_\_\_)

*Bid Item No. 1 – Field Directive Allowance:*

\_\_\_\_\_ One Hundred Thousand DOLLARS (\$ 100,000.00 )

*Bid Item No. 2 – Contaminated Soils Allowance*

Estimated Quantity 1 to 100 Cubic Yards @ \_\_\_\_\_ = \_\_\_\_\_ DOLLARS (\$ \_\_\_\_\_)

*Bid Item No. 3 – Contaminated Ground Water Allowance*

Estimated Quantity 1 to 500 Gallons @ \_\_\_\_\_ = \_\_\_\_\_ DOLLARS (\$ \_\_\_\_\_)

**TOTAL BASE BID (Base Bid plus Bid Item No.'s 1 – 3 Included)**

\_\_\_\_\_ DOLLARS (\$ \_\_\_\_\_)

**ALTERNATES**

*Alternate No. SC-1 – Internal Performance Platform*

\_\_\_\_\_ DOLLARS (\$ \_\_\_\_\_)  
ADD / DEDUCT

*Alternate No. SC-2 – Performance Platform off Gym*

\_\_\_\_\_ DOLLARS (\$ \_\_\_\_\_)  
ADD / DEDUCT

**FORM OF PROPOSAL**  
**Port Jervis City School District**  
**Additions & Alterations to PJMS**

**UNIT PRICES**

---

*Unit Price Item No. 1 – Contaminated Soils*                      \$ \_\_\_\_\_ / cubic yard

*Unit Price Item No. 2 – Contaminated Water*                      \$ \_\_\_\_\_ / gallon

Receipt of the following Addenda is hereby acknowledged:

No. \_\_\_\_\_ dated \_\_\_\_\_

No. \_\_\_\_\_ dated \_\_\_\_\_

No. \_\_\_\_\_ dated \_\_\_\_\_

No. \_\_\_\_\_ dated \_\_\_\_\_

No. \_\_\_\_\_ dated \_\_\_\_\_

No. \_\_\_\_\_ dated \_\_\_\_\_

No. \_\_\_\_\_ dated \_\_\_\_\_

No. \_\_\_\_\_ dated \_\_\_\_\_

\_\_\_\_\_  
(Name of Bidder)

Signed \_\_\_\_\_

Title \_\_\_\_\_

Street \_\_\_\_\_

City/State \_\_\_\_\_ Zip Code \_\_\_\_\_

Telephone \_\_\_\_\_

Fax \_\_\_\_\_

Cell Phone \_\_\_\_\_

Email \_\_\_\_\_

Date \_\_\_\_\_, 20\_\_

## NON-COLLUSIVE BIDDING CERTIFICATE

By submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid, each party thereto certifies as to its own organization, under penalty of perjury, that to the best of his knowledge and belief:

- (1) the prices in this bid have been arrived at independently without collusion, consultation, communication, or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other bidder or with any competitor;
- (2) unless otherwise required by law, the prices which have been quoted in this bid have not been knowingly disclosed by the bidder and will not knowingly be disclosed by the bidder prior to opening, directly or indirectly to any other bidder or to any competitor; and
- (3) no attempt has been made or will be made by the bidder to induce any other person, partnership or corporation to submit or not to submit a bid for the purpose of restricting competition.

(Signed) \_\_\_\_\_

\_\_\_\_\_  
Title

### RESOLUTION - for corporate bidders only

RESOLVED that \_\_\_\_\_ be authorized to sign and submit the bid or proposal  
(individual)  
of this corporation for the following project

\_\_\_\_\_  
(describe project)

and to include in such bid or proposal the certificate as to non-collusion required by Section 103-d of the General Municipal Law as the act and deed of such corporation, and for any inaccuracies or misstatements in such certificate this corporate bidder shall be liable under the penalties of perjury.

The foregoing is a true and correct copy of the resolution adopted by \_\_\_\_\_  
corporation at a meeting of its Board of Directors held on the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

SEAL OF CORPORATION)

\_\_\_\_\_  
Secretary

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**Statement Concerning Authority to do Business  
in the State of New York for non-New York State Companies**

**Please complete all requested information in both sections below.**

A certificate of authority is required of out of state companies if the company has property, employees or agents used in conducting its business activities within the state of New York. Generally, business activities are defined as having an office in the state, making sales or promotional calls within the state, delivering products or merchandise and/or making service calls within the state.

Companies conducting mail order activities with New York customers are not considered doing business within New York State if the company **has no property, employees, agents and/or representatives in or, traveling into the state.** \_\_\_\_\_ is such a mail order company, and as such, is not  
(Fill in company name)  
required to hold a Certificate of Authority.

Performance under the attached bid will not result in any action that would result in a requirement to obtain a Certificate as all commerce will be conducted by mail. It is the opinion of the legal counsel for this firm:

Name \_\_\_\_\_  
Address \_\_\_\_\_ (Complete the information)  
Address \_\_\_\_\_  
Telephone \_\_\_\_\_

that this firm is not required to file an Authority to do Business in New York State as required by Section 1301 of the NYS Business Corporate Law.

=====

**Complete one of the following two acknowledgements in addition to above information.**

Individual Acknowledgment for Sole Proprietors or Partnerships

\_\_\_\_\_  
Signature

State of \_\_\_\_\_  
County of \_\_\_\_\_ ss.

On this \_\_\_\_\_ day of \_\_\_\_\_ two thousand and \_\_\_\_\_ before me, the subscriber, personally appeared \_\_\_\_\_ to me personally known and known to me to be the same person described in and who executed the within Instrument, and he/she acknowledged to me that he/she executed the same.

\_\_\_\_\_  
Notary Public

Corporate Acknowledgment for corporations or LLC's

\_\_\_\_\_  
Signature

State of \_\_\_\_\_  
County of \_\_\_\_\_ ss.

On this \_\_\_\_\_ day of \_\_\_\_\_ two thousand and \_\_\_\_\_ before me personally known, who, being by me duly sworn did depose and say that he/she resides in \_\_\_\_\_ that he/she is the \_\_\_\_\_ of \_\_\_\_\_ the corporation described in, and which executed, the above Instrument; that he/she knows the seal of said corporation; that the seal affixed to said Instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said corporation; and that he/she signed his/her name thereto by like order.

\_\_\_\_\_  
Notary Public

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## FEDERAL LAW CERTIFICATION

I, \_\_\_\_\_ [insert name], the \_\_\_\_\_ [insert title] of  
\_\_\_\_\_ [name of company], \_\_\_\_\_ [Nine Digit DUNS  
Number] hereby swear or affirm that the following is true:

1. The company, its principles or entities related to the company named above, is not now, nor ever has been, debarred from contracting with the United States Government or any State government.
2. The company is not now under investigation by any agency of the Federal Government or the government of any State for any actions by the company, its principles or any related entity, for any alleged malfeasance or misfeasance of any kind or nature which could lead to a debarment from governmental contracting or criminal prosecution, as well as render any contracts signed in reliance on this certification voidable by the party relying on this certification. This includes any violations related to the Davis-Bacon Act, the federal prevailing wage statute, the Copeland Act and the Contract Hours and Safety Standards Act which covers hours of work and safety standards in federal public contracting.
3. I have full legal authority under my company's organizational documents or bylaws to make this certification on the company's behalf.
4. I understand that submission of a false statement on this document will subject me to criminal prosecution.

\_\_\_\_\_  
(Date)

\_\_\_\_\_  
(Signature)

**THIS FORM MUST BE COMPLETED AND SUBMITTED WITH THE BID**

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## STATEMENT OF SURETY'S INTENT

To:

\_\_\_\_\_  
(Owner)

We have reviewed the Bid of \_\_\_\_\_  
(Contractor)

of \_\_\_\_\_  
(Address)

for \_\_\_\_\_  
(Project)

Bids for which will be received on \_\_\_\_\_  
(Bid Opening Date)

and wish to advise that should this Bid of the Contractor be accepted, and the Contract awarded to him, it is our present intention to become surety on the performance bond and labor and material bond required by the Contract.

Any arrangement for the bonds required by the Contract is a matter between the Contractor and ourselves and we assume no liability to you or third parties if, for any reason, we do not execute the requisite bonds.

We are duly authorized to do business in the State of New York.

Attest:

\_\_\_\_\_  
\_\_\_\_\_  
(Surety's Authorized Signature)

**Attach Power of Attorney**

(Corporate Seal, if any.  
If no seal, write "No Seal"  
across this place and sign.)

**THIS FORM MUST BE COMPLETED AND SUBMITTED WITH THE BID**

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**CERTIFICATION OF COMPLIANCE WITH THE IRAN DIVESTMENT ACT**

As a result of the Iran Divestment Act of 2012 (the "Act"), Chapter 1 of the 2012 Laws of New York, a new provision has been added to State Finance Law (SFL) § 165-a and New York General Municipal Law § 103-g, both effective Aprils 12, 2012. Under the Act, the Commissioner of the Office of General Services (OGS) will be developing a list of "persons" who are engaged in "investment activities in Iran" (both are defined terms in the law) (the "Prohibited Entities List"). Pursuant to SFL § 165-a(3)(b), the initial list is expected to be issued no later than 120 days after the Act's effective date at which time it will be posted on the OGS website.

By submitting a bid in response to this solicitation or by assuming the responsibility of a Contract awarded hereunder, each Bidder/Contractor, any person signing on behalf of any Bidder/Contractor and any assignee or subcontractor and, in the case of a joint bid, each party thereto, certifies, under penalty of perjury, that once the Prohibited Entities List is posted on the OGS website, that to the best of its knowledge and belief, that each Bidder/Contractor and any subcontractor or assignee is not identified on the Prohibited Entities List created pursuant to SFL § 165-a(3)(b).

Additionally, Bidder/Contractor is advised that once the Prohibited Entities List is posted on the OGS Website, any Bidder/Contractor seeking to renew or extend a Contract or assume the responsibility of a Contract awarded in response to this solicitation must certify at the time the Contract is renewed, extended or assigned that it is not included on the Prohibited Entities List.

During the term of the Contract, should the School District receive information that a Bidder/Contractor is in violation of the above-referenced certification, the School District will offer the person or entity an opportunity to respond. If the person or entity fails to demonstrate that he/she/it has ceased engagement in the investment which is in violation of the Act within 90 days after the determination of such violation, then the School District shall take such action as may be appropriate including, but not limited to, imposing sanctions, seeking compliance, recovering damages or declaring the Bidder/Contractor in default. The School District reserves the right to reject any bid or request for assignment for a Bidder/Contractor that appears on the Prohibited Entities List prior to the award of a contract and to pursue a responsibility review with respect to any Bidder/Contractor that is awarded a contract and subsequently appears on the Prohibited Entities List.

I, \_\_\_\_\_, being duly sworn, deposes and says that he/she is the \_\_\_\_\_ of the \_\_\_\_\_ Corporation and that neither the Bidder/ Contractor nor any proposed subcontractor is identified on the Prohibited Entities List.

\_\_\_\_\_  
SIGNED

SWORN to before me this

\_\_\_\_\_ day of \_\_\_\_\_

20\_\_\_\_

Notary Public: \_\_\_\_\_

**EITHER THIS FORM OR THE "DECLARATION OF BIDDER'S INABILITY TO PROVIDE CERTIFICATION OF COMPLIANCE WITH THE IRAN DIVESTMENT ACT" FORM ON THE FOLLOWING PAGE MUST BE COMPLETED AND SUBMITTED WITH THE BID**

**DECLARATION OF BIDDER'S INABILITY TO PROVIDE CERTIFICATION OF COMPLIANCE  
WITH THE IRAN DIVESTMENT ACT**

***Bidders shall complete this form if they cannot certify that the bidder/contractor or any proposed subcontractor is not identified on the Prohibited Entities List. The District reserves the right to undertake any investigation into the information provided herein or to request additional information from the bidder.***

Name of the Bidder: \_\_\_\_\_

Address of Bidder: \_\_\_\_\_

Has bidder been involved in investment activities in Iran? \_\_\_\_\_

Describe the type of activities including but not limited to the amounts and the nature of the investments (e.g. banking, energy, real estate) \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

If so, when did the first investment activity occur? \_\_\_\_\_

Have the investment activities ended? \_\_\_\_\_

If so, what was the date of the last investment activity? \_\_\_\_\_

If not, have the investment activities increased or expanded since April 12, 2012? \_\_\_\_\_

Has the bidder adopted, publicized, or implemented a formal plan to cease the investment activities in Iran and to refrain from engaging in any new investments in Iran? \_\_\_\_\_

If so, provide the date of the adoption of the plan by the bidder and proof of the adopted resolution, if any and a copy of the formal plan. \_\_\_\_\_

In detail, state the reasons why the bidder cannot provide the Certification of Compliance with the Iran Divestment Act below (additional pages may be attached):

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

I, \_\_\_\_\_ being duly sworn, deposes and says that he/she is the \_\_\_\_\_ of

the \_\_\_\_\_ Corporation and the foregoing is true and accurate.

\_\_\_\_\_  
SIGNED

SWORN to before me this

\_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_

Notary Public: \_\_\_\_\_

**FORM OF PROPOSAL  
Port Jervis City School District  
Additions & Alterations to PJMS**

**BID DESCRIPTION**

**CONTRACT NO. 3: MC1 – MECHANICAL CONSTRUCTION**

Work under this Contract may generally be described to include, but not be limited to the following:

Procurement and general requirements; and all other work and related materials as indicated on the Contract Drawings, Multiple Contracts Summary, as specified herein, and as required for the complete and proper execution of the Work.

This outline is a general indication of the requirements of this Contract and is not intended to be all inclusive. The complete Contract Documents in their entirety, to include any and all addenda, form the basis of the responsibility of this Contract.

Each contractor is advised that the specification sections in Division 01 - General Requirements apply distinctly to each Prime Contractor and the balance of the technical specifications apply to each Contractor (as appropriate) for the accomplishment of his work.

All work of this contract shall be coordinated with other Prime Contractors involved in the project. All work shall additionally be coordinated with all other activities, construction, or others at each site throughout the progress of the work of this project.

The Contractor shall use all means possible and shall be responsible for coordinating the installation of all materials of this Contract with work of all other trades involved with this project. All work shall be done in strict accordance with the Contract Documents and in compliance with all applicable Local, State and Federal Codes.

Prior to the Bid Date of this project, the Contractor shall be completely responsible for visiting the project site to become completely familiar with the scope of this project.

Each bidder agrees to waive any claim it has or may have against the Owner, the Architect/Engineer, and the respective employees, arising out of or in connection with the administration, evaluation or recommendation of any bid.

It shall be completely understood that the use of asbestos containing materials in this project is strictly forbidden and all materials are provided in accordance with the Federal Asbestos Hazard Emergency Response Act (AHERA), and the New York State Asbestos Safety Act (SASA).

In addition to those items in the Base Bid, the Contractor shall further sub-divide his bid proposal as described in the following bid items, alternates, and/or unit prices. The Contractor shall include in the Base Bid all of the work of this Contract not specifically described in a Bid Item or Alternative. The Owner reserves the right to accept any and/or all of the Bid Items and/or Alternates or any combination thereof and to waive any informalities or defects in the bid proposals either before or after opening.

**Bid Items:** As described in Specification Section 01 2100 – Allowances

- Bid Item No. 1 – Field Directive Allowance

**Alternates:** As described in Specification Section 01 2300 – Alternates

- Alternate No. MC-1 – Internal Performance Platform
- Alternate No. MC-2 – Performance Platform off Gym

**FORM OF PROPOSAL  
Port Jervis City School District  
Additions & Alterations to PJMS**

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**FORM OF PROPOSAL**  
**Port Jervis City School District**  
**Additions & Alterations to PJMS**

The Undersigned \_\_\_\_\_  
Contractor

Address

Zip Code

hereby certifies that he/she has examined and fully comprehends the requirements and intent of the drawings and specifications as prepared by BCA Architects & Engineers, for **CONTRACT NO. 3: MC1 – MECHANICAL CONSTRUCTION** to furnish all labor, materials, supplies, plant and equipment and other facilities to properly perform the work for the total:

**BASE BID**

*BASE BID SUM of*

\_\_\_\_\_ DOLLARS (\$ \_\_\_\_\_)

*Bid Item No. 1 – Field Directive Allowance*

\_\_\_\_\_ Two Hundred Fifty Thousand DOLLARS (\$ 250,000.00 )

**TOTAL BASE BID (Base Bid and Bid Item No. 1 Included)**

\_\_\_\_\_ DOLLARS (\$ \_\_\_\_\_)

**ALTERNATES**

*Alternate No. MC-1 – Internal Performance Platform*

\_\_\_\_\_ DOLLARS (\$ \_\_\_\_\_)  
ADD / DEDUCT

*Alternate No. MC-2 – Performance Platform off Gym*

\_\_\_\_\_ DOLLARS (\$ \_\_\_\_\_)  
ADD / DEDUCT

Receipt of the following Addenda is hereby acknowledged:

No. \_\_\_\_\_ dated \_\_\_\_\_  
No. \_\_\_\_\_ dated \_\_\_\_\_  
No. \_\_\_\_\_ dated \_\_\_\_\_  
No. \_\_\_\_\_ dated \_\_\_\_\_

No. \_\_\_\_\_ dated \_\_\_\_\_  
No. \_\_\_\_\_ dated \_\_\_\_\_  
No. \_\_\_\_\_ dated \_\_\_\_\_  
No. \_\_\_\_\_ dated \_\_\_\_\_

\_\_\_\_\_  
(Name of Bidder)

Signed \_\_\_\_\_  
Title \_\_\_\_\_  
Street \_\_\_\_\_  
City/State \_\_\_\_\_ Zip Code \_\_\_\_\_  
Telephone \_\_\_\_\_  
Fax \_\_\_\_\_  
Cell Phone \_\_\_\_\_  
Email \_\_\_\_\_  
Date \_\_\_\_\_, 20\_\_

## NON-COLLUSIVE BIDDING CERTIFICATE

By submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid, each party thereto certifies as to its own organization, under penalty of perjury, that to the best of his knowledge and belief:

- (1) the prices in this bid have been arrived at independently without collusion, consultation, communication, or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other bidder or with any competitor;
- (2) unless otherwise required by law, the prices which have been quoted in this bid have not been knowingly disclosed by the bidder and will not knowingly be disclosed by the bidder prior to opening, directly or indirectly to any other bidder or to any competitor; and
- (3) no attempt has been made or will be made by the bidder to induce any other person, partnership or corporation to submit or not to submit a bid for the purpose of restricting competition.

(Signed) \_\_\_\_\_

\_\_\_\_\_  
Title

### RESOLUTION - for corporate bidders only

RESOLVED that \_\_\_\_\_ be authorized to sign and submit the bid or proposal  
(individual)  
of this corporation for the following project

\_\_\_\_\_  
(describe project)

and to include in such bid or proposal the certificate as to non-collusion required by Section 103-d of the General Municipal Law as the act and deed of such corporation, and for any inaccuracies or misstatements in such certificate this corporate bidder shall be liable under the penalties of perjury.

The foregoing is a true and correct copy of the resolution adopted by \_\_\_\_\_  
corporation at a meeting of its Board of Directors held on the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

SEAL OF CORPORATION)

\_\_\_\_\_  
Secretary

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**Statement Concerning Authority to do Business  
in the State of New York for non-New York State Companies**

**Please complete all requested information in both sections below.**

A certificate of authority is required of out of state companies if the company has property, employees or agents used in conducting its business activities within the state of New York. Generally, business activities are defined as having an office in the state, making sales or promotional calls within the state, delivering products or merchandise and/or making service calls within the state.

Companies conducting mail order activities with New York customers are not considered doing business within New York State if the company **has no property, employees, agents and/or representatives in or, traveling into the state.** \_\_\_\_\_ is such a mail order company, and as such, is not  
(Fill in company name)  
required to hold a Certificate of Authority.

Performance under the attached bid will not result in any action that would result in a requirement to obtain a Certificate as all commerce will be conducted by mail. It is the opinion of the legal counsel for this firm:

Name \_\_\_\_\_  
Address \_\_\_\_\_ (Complete the information)  
Address \_\_\_\_\_  
Telephone \_\_\_\_\_

that this firm is not required to file an Authority to do Business in New York State as required by Section 1301 of the NYS Business Corporate Law.

=====

**Complete one of the following two acknowledgements in addition to above information.**

Individual Acknowledgment for Sole Proprietors or Partnerships

\_\_\_\_\_  
Signature

State of \_\_\_\_\_  
County of \_\_\_\_\_ ss.

On this \_\_\_\_\_ day of \_\_\_\_\_ two thousand and \_\_\_\_\_ before me, the subscriber, personally appeared \_\_\_\_\_ to me personally known and known to me to be the same person described in and who executed the within Instrument, and he/she acknowledged to me that he/she executed the same.

\_\_\_\_\_  
Notary Public

Corporate Acknowledgment for corporations or LLC's

\_\_\_\_\_  
Signature

State of \_\_\_\_\_  
County of \_\_\_\_\_ ss.

On this \_\_\_\_\_ day of \_\_\_\_\_ two thousand and \_\_\_\_\_ before me personally known, who, being by me duly sworn did depose and say that he/she resides in \_\_\_\_\_ that he/she is the \_\_\_\_\_ of \_\_\_\_\_ the corporation described in, and which executed, the above Instrument; that he/she knows the seal of said corporation; that the seal affixed to said Instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said corporation; and that he/she signed his/her name thereto by like order.

\_\_\_\_\_  
Notary Public

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## FEDERAL LAW CERTIFICATION

I, \_\_\_\_\_ [insert name], the \_\_\_\_\_ [insert title] of  
\_\_\_\_\_ [name of company], \_\_\_\_\_ [Nine Digit DUNS  
Number] hereby swear or affirm that the following is true:

1. The company, its principles or entities related to the company named above, is not now, nor ever has been, debarred from contracting with the United States Government or any State government.
2. The company is not now under investigation by any agency of the Federal Government or the government of any State for any actions by the company, its principles or any related entity, for any alleged malfeasance or misfeasance of any kind or nature which could lead to a debarment from governmental contracting or criminal prosecution, as well as render any contracts signed in reliance on this certification voidable by the party relying on this certification. This includes any violations related to the Davis-Bacon Act, the federal prevailing wage statute, the Copeland Act and the Contract Hours and Safety Standards Act which covers hours of work and safety standards in federal public contracting.
3. I have full legal authority under my company's organizational documents or bylaws to make this certification on the company's behalf.
4. I understand that submission of a false statement on this document will subject me to criminal prosecution.

\_\_\_\_\_  
(Date)

\_\_\_\_\_  
(Signature)

**THIS FORM MUST BE COMPLETED AND SUBMITTED WITH THE BID**

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## STATEMENT OF SURETY'S INTENT

To:

\_\_\_\_\_  
(Owner)

We have reviewed the Bid of \_\_\_\_\_  
(Contractor)

of \_\_\_\_\_  
(Address)

for \_\_\_\_\_  
(Project)

Bids for which will be received on \_\_\_\_\_  
(Bid Opening Date)

and wish to advise that should this Bid of the Contractor be accepted, and the Contract awarded to him, it is our present intention to become surety on the performance bond and labor and material bond required by the Contract.

Any arrangement for the bonds required by the Contract is a matter between the Contractor and ourselves and we assume no liability to you or third parties if, for any reason, we do not execute the requisite bonds.

We are duly authorized to do business in the State of New York.

Attest:

\_\_\_\_\_  
\_\_\_\_\_  
(Surety's Authorized Signature)

**Attach Power of Attorney**

(Corporate Seal, if any.  
If no seal, write "No Seal"  
across this place and sign.)

**THIS FORM MUST BE COMPLETED AND SUBMITTED WITH THE BID**

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**CERTIFICATION OF COMPLIANCE WITH THE IRAN DIVESTMENT ACT**

As a result of the Iran Divestment Act of 2012 (the "Act"), Chapter 1 of the 2012 Laws of New York, a new provision has been added to State Finance Law (SFL) § 165-a and New York General Municipal Law § 103-g, both effective Aprils 12, 2012. Under the Act, the Commissioner of the Office of General Services (OGS) will be developing a list of "persons" who are engaged in "investment activities in Iran" (both are defined terms in the law) (the "Prohibited Entities List"). Pursuant to SFL § 165-a(3)(b), the initial list is expected to be issued no later than 120 days after the Act's effective date at which time it will be posted on the OGS website.

By submitting a bid in response to this solicitation or by assuming the responsibility of a Contract awarded hereunder, each Bidder/Contractor, any person signing on behalf of any Bidder/Contractor and any assignee or subcontractor and, in the case of a joint bid, each party thereto, certifies, under penalty of perjury, that once the Prohibited Entities List is posted on the OGS website, that to the best of its knowledge and belief, that each Bidder/Contractor and any subcontractor or assignee is not identified on the Prohibited Entities List created pursuant to SFL § 165-a(3)(b).

Additionally, Bidder/Contractor is advised that once the Prohibited Entities List is posted on the OGS Website, any Bidder/Contractor seeking to renew or extend a Contract or assume the responsibility of a Contract awarded in response to this solicitation must certify at the time the Contract is renewed, extended or assigned that it is not included on the Prohibited Entities List.

During the term of the Contract, should the School District receive information that a Bidder/Contractor is in violation of the above-referenced certification, the School District will offer the person or entity an opportunity to respond. If the person or entity fails to demonstrate that he/she/it has ceased engagement in the investment which is in violation of the Act within 90 days after the determination of such violation, then the School District shall take such action as may be appropriate including, but not limited to, imposing sanctions, seeking compliance, recovering damages or declaring the Bidder/Contractor in default. The School District reserves the right to reject any bid or request for assignment for a Bidder/Contractor that appears on the Prohibited Entities List prior to the award of a contract and to pursue a responsibility review with respect to any Bidder/Contractor that is awarded a contract and subsequently appears on the Prohibited Entities List.

I, \_\_\_\_\_, being duly sworn, deposes and says that he/she is the \_\_\_\_\_ of the \_\_\_\_\_ Corporation and that neither the Bidder/ Contractor nor any proposed subcontractor is identified on the Prohibited Entities List.

\_\_\_\_\_  
SIGNED

SWORN to before me this

\_\_\_\_\_ day of \_\_\_\_\_

20\_\_\_\_

Notary Public: \_\_\_\_\_

**EITHER THIS FORM OR THE "DECLARATION OF BIDDER'S INABILITY TO PROVIDE CERTIFICATION OF COMPLIANCE WITH THE IRAN DIVESTMENT ACT" FORM ON THE FOLLOWING PAGE MUST BE COMPLETED AND SUBMITTED WITH THE BID**

**DECLARATION OF BIDDER'S INABILITY TO PROVIDE CERTIFICATION OF COMPLIANCE  
WITH THE IRAN DIVESTMENT ACT**

***Bidders shall complete this form if they cannot certify that the bidder/contractor or any proposed subcontractor is not identified on the Prohibited Entities List. The District reserves the right to undertake any investigation into the information provided herein or to request additional information from the bidder.***

Name of the Bidder: \_\_\_\_\_

Address of Bidder: \_\_\_\_\_

Has bidder been involved in investment activities in Iran? \_\_\_\_\_

Describe the type of activities including but not limited to the amounts and the nature of the investments (e.g. banking, energy, real estate) \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

If so, when did the first investment activity occur? \_\_\_\_\_

Have the investment activities ended? \_\_\_\_\_

If so, what was the date of the last investment activity? \_\_\_\_\_

If not, have the investment activities increased or expanded since April 12, 2012? \_\_\_\_\_

Has the bidder adopted, publicized, or implemented a formal plan to cease the investment activities in Iran and to refrain from engaging in any new investments in Iran? \_\_\_\_\_

If so, provide the date of the adoption of the plan by the bidder and proof of the adopted resolution, if any and a copy of the formal plan. \_\_\_\_\_

In detail, state the reasons why the bidder cannot provide the Certification of Compliance with the Iran Divestment Act below (additional pages may be attached):

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

I, \_\_\_\_\_ being duly sworn, deposes and says that he/she is the \_\_\_\_\_ of

the \_\_\_\_\_ Corporation and the foregoing is true and accurate.

\_\_\_\_\_  
SIGNED

SWORN to before me this

\_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_

Notary Public: \_\_\_\_\_

**FORM OF PROPOSAL  
Port Jervis City School District  
Additions & Alterations to PJMS**

**BID DESCRIPTION**

**CONTRACT NO. 4: EC1 – ELECTRICAL CONSTRUCTION**

Work under this Contract may generally be described to include, but not be limited to the following:

Procurement and general requirements; and all other work and related materials as indicated on the Contract Drawings, Multiple Contracts Summary, as specified herein, and as required for the complete and proper execution of the Work.

This outline is a general indication of the requirements of this Contract and is not intended to be all inclusive. The complete Contract Documents in their entirety, to include any and all addenda, form the basis of the responsibility of this Contract.

Each contractor is advised that the specification sections in Division 01 - General Requirements apply distinctly to each Prime Contractor and the balance of the technical specifications apply to each Contractor (as appropriate) for the accomplishment of his work.

All work of this contract shall be coordinated with other Prime Contractors involved in the project. All work shall additionally be coordinated with all other activities, construction, or others at each site throughout the progress of the work of this project.

The Contractor shall use all means possible and shall be responsible for coordinating the installation of all materials of this Contract with work of all other trades involved with this project. All work shall be done in strict accordance with the Contract Documents and in compliance with all applicable Local, State and Federal Codes.

Prior to the Bid Date of this project, the Contractor shall be completely responsible for visiting the project site to become completely familiar with the scope of this project.

Each bidder agrees to waive any claim it has or may have against the Owner, the Architect/Engineer, and the respective employees, arising out of or in connection with the administration, evaluation or recommendation of any bid.

It shall be completely understood that the use of asbestos containing materials in this project is strictly forbidden and all materials are provided in accordance with the Federal Asbestos Hazard Emergency Response Act (AHERA), and the New York State Asbestos Safety Act (SASA).

In addition to those items in the Base Bid, the Contractor shall further sub-divide his bid proposal as described in the following bid items, alternates, and/or unit prices. The Contractor shall include in the Base Bid all of the work of this Contract not specifically described in a Bid Item or Alternative. The Owner reserves the right to accept any and/or all of the Bid Items and/or Alternates or any combination thereof and to waive any informalities or defects in the bid proposals either before or after opening.

**Bid Items:** As described in Specification Section 01 2100 – Allowances

- Bid Item No. 1 – Field Directive Allowance

**Alternates:** As described in Specification Section 01 2300 – Alternates

- Alternate No. EC-1 – Internal Performance Platform
- Alternate No. EC-2 – Performance Platform off Gym

**FORM OF PROPOSAL  
Port Jervis City School District  
Additions & Alterations to PJMS**

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**FORM OF PROPOSAL**  
**Port Jervis City School District**  
**Additions & Alterations to PJMS**

The Undersigned \_\_\_\_\_  
Contractor

Address

Zip Code

hereby certifies that he/she has examined and fully comprehends the requirements and intent of the drawings and specifications as prepared by BCA Architects & Engineers, for **CONTRACT NO. 4: EC1 – ELECTRICAL CONSTRUCTION** to furnish all labor, materials, supplies, plant and equipment and other facilities to properly perform the work for the total:

**BASE BID**

*BASE BID SUM of*

\_\_\_\_\_ DOLLARS (\$ \_\_\_\_\_)

*Bid Item No. 1 – Field Directive Allowance*

\_\_\_\_\_ One Hundred Fifty Thousand DOLLARS (\$ 150,000.00 )

**TOTAL BASE BID (Base Bid and Bid Item No. 1 Included)**

\_\_\_\_\_ DOLLARS (\$ \_\_\_\_\_)

**ALTERNATES**

*Alternate No. EC-1 – Internal Performance Platform*

\_\_\_\_\_ DOLLARS (\$ \_\_\_\_\_)  
ADD / DEDUCT

*Alternate No. EC-2 – Performance Platform off Gym*

\_\_\_\_\_ DOLLARS (\$ \_\_\_\_\_)  
ADD / DEDUCT

Receipt of the following Addenda is hereby acknowledged:

No. \_\_\_\_\_ dated \_\_\_\_\_  
No. \_\_\_\_\_ dated \_\_\_\_\_  
No. \_\_\_\_\_ dated \_\_\_\_\_  
No. \_\_\_\_\_ dated \_\_\_\_\_

No. \_\_\_\_\_ dated \_\_\_\_\_  
No. \_\_\_\_\_ dated \_\_\_\_\_  
No. \_\_\_\_\_ dated \_\_\_\_\_  
No. \_\_\_\_\_ dated \_\_\_\_\_

\_\_\_\_\_  
(Name of Bidder)

Signed \_\_\_\_\_  
Title \_\_\_\_\_  
Street \_\_\_\_\_  
City/State \_\_\_\_\_ Zip Code \_\_\_\_\_  
Telephone \_\_\_\_\_  
Fax \_\_\_\_\_  
Cell Phone \_\_\_\_\_  
Email \_\_\_\_\_  
Date \_\_\_\_\_, 20\_\_



## NON-COLLUSIVE BIDDING CERTIFICATE

By submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid, each party thereto certifies as to its own organization, under penalty of perjury, that to the best of his knowledge and belief:

- (1) the prices in this bid have been arrived at independently without collusion, consultation, communication, or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other bidder or with any competitor;
- (2) unless otherwise required by law, the prices which have been quoted in this bid have not been knowingly disclosed by the bidder and will not knowingly be disclosed by the bidder prior to opening, directly or indirectly to any other bidder or to any competitor; and
- (3) no attempt has been made or will be made by the bidder to induce any other person, partnership or corporation to submit or not to submit a bid for the purpose of restricting competition.

(Signed) \_\_\_\_\_

\_\_\_\_\_  
Title

### RESOLUTION - for corporate bidders only

RESOLVED that \_\_\_\_\_ be authorized to sign and submit the bid or proposal  
(individual)  
of this corporation for the following project

\_\_\_\_\_  
(describe project)

and to include in such bid or proposal the certificate as to non-collusion required by Section 103-d of the General Municipal Law as the act and deed of such corporation, and for any inaccuracies or misstatements in such certificate this corporate bidder shall be liable under the penalties of perjury.

The foregoing is a true and correct copy of the resolution adopted by \_\_\_\_\_  
corporation at a meeting of its Board of Directors held on the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

SEAL OF CORPORATION)

\_\_\_\_\_  
Secretary

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**Statement Concerning Authority to do Business  
in the State of New York for non-New York State Companies**

**Please complete all requested information in both sections below.**

A certificate of authority is required of out of state companies if the company has property, employees or agents used in conducting its business activities within the state of New York. Generally, business activities are defined as having an office in the state, making sales or promotional calls within the state, delivering products or merchandise and/or making service calls within the state.

Companies conducting mail order activities with New York customers are not considered doing business within New York State if the company **has no property, employees, agents and/or representatives in or, traveling into the state.** \_\_\_\_\_ is such a mail order company, and as such, is not  
(Fill in company name)  
required to hold a Certificate of Authority.

Performance under the attached bid will not result in any action that would result in a requirement to obtain a Certificate as all commerce will be conducted by mail. It is the opinion of the legal counsel for this firm:

Name \_\_\_\_\_  
Address \_\_\_\_\_ (Complete the information)  
Address \_\_\_\_\_  
Telephone \_\_\_\_\_

that this firm is not required to file an Authority to do Business in New York State as required by Section 1301 of the NYS Business Corporate Law.

=====

**Complete one of the following two acknowledgements in addition to above information.**

Individual Acknowledgment for Sole Proprietors or Partnerships

\_\_\_\_\_  
Signature

State of \_\_\_\_\_  
County of \_\_\_\_\_ ss.

On this \_\_\_\_\_ day of \_\_\_\_\_ two thousand and \_\_\_\_\_ before me, the subscriber, personally appeared \_\_\_\_\_ to me personally known and known to me to be the same person described in and who executed the within Instrument, and he/she acknowledged to me that he/she executed the same.

\_\_\_\_\_  
Notary Public

Corporate Acknowledgment for corporations or LLC's

\_\_\_\_\_  
Signature

State of \_\_\_\_\_  
County of \_\_\_\_\_ ss.

On this \_\_\_\_\_ day of \_\_\_\_\_ two thousand and \_\_\_\_\_ before me personally known, who, being by me duly sworn did depose and say that he/she resides in \_\_\_\_\_ that he/she is the \_\_\_\_\_ of \_\_\_\_\_ the corporation described in, and which executed, the above Instrument; that he/she knows the seal of said corporation; that the seal affixed to said Instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said corporation; and that he/she signed his/her name thereto by like order.

\_\_\_\_\_  
Notary Public

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## FEDERAL LAW CERTIFICATION

I, \_\_\_\_\_ [insert name], the \_\_\_\_\_ [insert title] of  
\_\_\_\_\_ [name of company], \_\_\_\_\_ [Nine Digit DUNS  
Number] hereby swear or affirm that the following is true:

1. The company, its principles or entities related to the company named above, is not now, nor ever has been, debarred from contracting with the United States Government or any State government.
2. The company is not now under investigation by any agency of the Federal Government or the government of any State for any actions by the company, its principles or any related entity, for any alleged malfeasance or misfeasance of any kind or nature which could lead to a debarment from governmental contracting or criminal prosecution, as well as render any contracts signed in reliance on this certification voidable by the party relying on this certification. This includes any violations related to the Davis-Bacon Act, the federal prevailing wage statute, the Copeland Act and the Contract Hours and Safety Standards Act which covers hours of work and safety standards in federal public contracting.
3. I have full legal authority under my company's organizational documents or bylaws to make this certification on the company's behalf.
4. I understand that submission of a false statement on this document will subject me to criminal prosecution.

\_\_\_\_\_  
(Date)

\_\_\_\_\_  
(Signature)

**THIS FORM MUST BE COMPLETED AND SUBMITTED WITH THE BID**

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## STATEMENT OF SURETY'S INTENT

To:

\_\_\_\_\_  
(Owner)

We have reviewed the Bid of \_\_\_\_\_  
(Contractor)

of \_\_\_\_\_  
(Address)

for \_\_\_\_\_  
(Project)

Bids for which will be received on \_\_\_\_\_  
(Bid Opening Date)

and wish to advise that should this Bid of the Contractor be accepted, and the Contract awarded to him, it is our present intention to become surety on the performance bond and labor and material bond required by the Contract.

Any arrangement for the bonds required by the Contract is a matter between the Contractor and ourselves and we assume no liability to you or third parties if, for any reason, we do not execute the requisite bonds.

We are duly authorized to do business in the State of New York.

Attest:

\_\_\_\_\_  
\_\_\_\_\_  
(Surety's Authorized Signature)

**Attach Power of Attorney**

(Corporate Seal, if any.  
If no seal, write "No Seal"  
across this place and sign.)

**THIS FORM MUST BE COMPLETED AND SUBMITTED WITH THE BID**

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**CERTIFICATION OF COMPLIANCE WITH THE IRAN DIVESTMENT ACT**

As a result of the Iran Divestment Act of 2012 (the "Act"), Chapter 1 of the 2012 Laws of New York, a new provision has been added to State Finance Law (SFL) § 165-a and New York General Municipal Law § 103-g, both effective Aprils 12, 2012. Under the Act, the Commissioner of the Office of General Services (OGS) will be developing a list of "persons" who are engaged in "investment activities in Iran" (both are defined terms in the law) (the "Prohibited Entities List"). Pursuant to SFL § 165-a(3)(b), the initial list is expected to be issued no later than 120 days after the Act's effective date at which time it will be posted on the OGS website.

By submitting a bid in response to this solicitation or by assuming the responsibility of a Contract awarded hereunder, each Bidder/Contractor, any person signing on behalf of any Bidder/Contractor and any assignee or subcontractor and, in the case of a joint bid, each party thereto, certifies, under penalty of perjury, that once the Prohibited Entities List is posted on the OGS website, that to the best of its knowledge and belief, that each Bidder/Contractor and any subcontractor or assignee is not identified on the Prohibited Entities List created pursuant to SFL § 165-a(3)(b).

Additionally, Bidder/Contractor is advised that once the Prohibited Entities List is posted on the OGS Website, any Bidder/Contractor seeking to renew or extend a Contract or assume the responsibility of a Contract awarded in response to this solicitation must certify at the time the Contract is renewed, extended or assigned that it is not included on the Prohibited Entities List.

During the term of the Contract, should the School District receive information that a Bidder/Contractor is in violation of the above-referenced certification, the School District will offer the person or entity an opportunity to respond. If the person or entity fails to demonstrate that he/she/it has ceased engagement in the investment which is in violation of the Act within 90 days after the determination of such violation, then the School District shall take such action as may be appropriate including, but not limited to, imposing sanctions, seeking compliance, recovering damages or declaring the Bidder/Contractor in default. The School District reserves the right to reject any bid or request for assignment for a Bidder/Contractor that appears on the Prohibited Entities List prior to the award of a contract and to pursue a responsibility review with respect to any Bidder/Contractor that is awarded a contract and subsequently appears on the Prohibited Entities List.

I, \_\_\_\_\_, being duly sworn, deposes and says that he/she is the \_\_\_\_\_ of the \_\_\_\_\_ Corporation and that neither the Bidder/ Contractor nor any proposed subcontractor is identified on the Prohibited Entities List.

\_\_\_\_\_  
SIGNED

SWORN to before me this

\_\_\_\_\_ day of \_\_\_\_\_

20\_\_\_\_

Notary Public: \_\_\_\_\_

**EITHER THIS FORM OR THE "DECLARATION OF BIDDER'S INABILITY TO PROVIDE CERTIFICATION OF COMPLIANCE WITH THE IRAN DIVESTMENT ACT" FORM ON THE FOLLOWING PAGE MUST BE COMPLETED AND SUBMITTED WITH THE BID**

**DECLARATION OF BIDDER'S INABILITY TO PROVIDE CERTIFICATION OF COMPLIANCE  
WITH THE IRAN DIVESTMENT ACT**

***Bidders shall complete this form if they cannot certify that the bidder/contractor or any proposed subcontractor is not identified on the Prohibited Entities List. The District reserves the right to undertake any investigation into the information provided herein or to request additional information from the bidder.***

Name of the Bidder: \_\_\_\_\_

Address of Bidder: \_\_\_\_\_

Has bidder been involved in investment activities in Iran? \_\_\_\_\_

Describe the type of activities including but not limited to the amounts and the nature of the investments (e.g. banking, energy, real estate) \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

If so, when did the first investment activity occur? \_\_\_\_\_

Have the investment activities ended? \_\_\_\_\_

If so, what was the date of the last investment activity? \_\_\_\_\_

If not, have the investment activities increased or expanded since April 12, 2012? \_\_\_\_\_

Has the bidder adopted, publicized, or implemented a formal plan to cease the investment activities in Iran and to refrain from engaging in any new investments in Iran? \_\_\_\_\_

If so, provide the date of the adoption of the plan by the bidder and proof of the adopted resolution, if any and a copy of the formal plan. \_\_\_\_\_

In detail, state the reasons why the bidder cannot provide the Certification of Compliance with the Iran Divestment Act below (additional pages may be attached):

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

I, \_\_\_\_\_ being duly sworn, deposes and says that he/she is the \_\_\_\_\_ of

the \_\_\_\_\_ Corporation and the foregoing is true and accurate.

\_\_\_\_\_  
SIGNED

SWORN to before me this

\_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_

Notary Public: \_\_\_\_\_

**FORM OF PROPOSAL  
Port Jervis City School District  
Additions & Alterations to PJMS**

**BID DESCRIPTION**

**CONTRACT NO. 5: PC1 – PLUMBING CONSTRUCTION**

Work under this Contract may generally be described to include, but not be limited to the following:

Procurement and general requirements; and all other work and related materials as indicated on the Contract Drawings, Multiple Contracts Summary, as specified herein, and as required for the complete and proper execution of the Work.

This outline is a general indication of the requirements of this Contract and is not intended to be all inclusive. The complete Contract Documents in their entirety, to include any and all addenda, form the basis of the responsibility of this Contract.

Each contractor is advised that the specification sections in Division 01 - General Requirements apply distinctly to each Prime Contractor and the balance of the technical specifications apply to each Contractor (as appropriate) for the accomplishment of his work.

All work of this contract shall be coordinated with other Prime Contractors involved in the project. All work shall additionally be coordinated with all other activities, construction, or others at each site throughout the progress of the work of this project.

The Contractor shall use all means possible and shall be responsible for coordinating the installation of all materials of this Contract with work of all other trades involved with this project. All work shall be done in strict accordance with the Contract Documents and in compliance with all applicable Local, State and Federal Codes.

Prior to the Bid Date of this project, the Contractor shall be completely responsible for visiting the project site to become completely familiar with the scope of this project.

Each bidder agrees to waive any claim it has or may have against the Owner, the Architect/Engineer, and the respective employees, arising out of or in connection with the administration, evaluation or recommendation of any bid.

It shall be completely understood that the use of asbestos containing materials in this project is strictly forbidden and all materials are provided in accordance with the Federal Asbestos Hazard Emergency Response Act (AHERA), and the New York State Asbestos Safety Act (SASA).

In addition to those items in the Base Bid, the Contractor shall further sub-divide his bid proposal as described in the following bid items, alternates, and/or unit prices. The Contractor shall include in the Base Bid all of the work of this Contract not specifically described in a Bid Item or Alternative. The Owner reserves the right to accept any and/or all of the Bid Items and/or Alternates or any combination thereof and to waive any informalities or defects in the bid proposals either before or after opening.

**Bid Items:** As described in Specification Section 01 2100 – Allowances

- Bid Item No. 1 – Field Directive Allowance

**Alternates:** As described in Specification Section 01 2300 – Alternates

- Alternate No. PC-1 – Internal Performance Platform and Toilet Rooms
- Alternate No. PC-2 – Performance Platform off Gym

**FORM OF PROPOSAL  
Port Jervis City School District  
Additions & Alterations to PJMS**

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**FORM OF PROPOSAL**  
**Port Jervis City School District**  
**Additions & Alterations to PJMS**

The Undersigned \_\_\_\_\_  
Contractor

Address

Zip Code

hereby certifies that he/she has examined and fully comprehends the requirements and intent of the drawings and specifications as prepared by BCA Architects & Engineers, for **CONTRACT NO. 5: PC1 – PLUMBING CONSTRUCTION** to furnish all labor, materials, supplies, plant and equipment and other facilities to properly perform the work for the total:

**BASE BID**

*BASE BID SUM of*

\_\_\_\_\_ DOLLARS (\$ \_\_\_\_\_)

*Bid Item No. 1 – Field Directive Allowance*

\_\_\_\_\_ One Hundred Thousand DOLLARS (\$ 100,000.00 )

**TOTAL BASE BID (Base Bid and Bid Item No. 1 Included)**

\_\_\_\_\_ DOLLARS (\$ \_\_\_\_\_)

**ALTERNATES**

*Alternate No. PC-1 – Internal Performance Platform and Toilet Rooms*

\_\_\_\_\_ DOLLARS (\$ \_\_\_\_\_)  
ADD / DEDUCT

*Alternate No. PC-2 – Performance Platform off Gym*

\_\_\_\_\_ DOLLARS (\$ \_\_\_\_\_)  
ADD / DEDUCT

Receipt of the following Addenda is hereby acknowledged:

No. \_\_\_\_\_ dated \_\_\_\_\_  
No. \_\_\_\_\_ dated \_\_\_\_\_  
No. \_\_\_\_\_ dated \_\_\_\_\_  
No. \_\_\_\_\_ dated \_\_\_\_\_

No. \_\_\_\_\_ dated \_\_\_\_\_  
No. \_\_\_\_\_ dated \_\_\_\_\_  
No. \_\_\_\_\_ dated \_\_\_\_\_  
No. \_\_\_\_\_ dated \_\_\_\_\_

\_\_\_\_\_  
(Name of Bidder)

Signed \_\_\_\_\_  
Title \_\_\_\_\_  
Street \_\_\_\_\_  
City/State \_\_\_\_\_ Zip Code \_\_\_\_\_  
Telephone \_\_\_\_\_  
Fax \_\_\_\_\_  
Cell Phone \_\_\_\_\_  
Email \_\_\_\_\_  
Date \_\_\_\_\_, 20\_\_

## NON-COLLUSIVE BIDDING CERTIFICATE

By submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid, each party thereto certifies as to its own organization, under penalty of perjury, that to the best of his knowledge and belief:

- (1) the prices in this bid have been arrived at independently without collusion, consultation, communication, or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other bidder or with any competitor;
- (2) unless otherwise required by law, the prices which have been quoted in this bid have not been knowingly disclosed by the bidder and will not knowingly be disclosed by the bidder prior to opening, directly or indirectly to any other bidder or to any competitor; and
- (3) no attempt has been made or will be made by the bidder to induce any other person, partnership or corporation to submit or not to submit a bid for the purpose of restricting competition.

(Signed) \_\_\_\_\_

\_\_\_\_\_  
Title

### RESOLUTION - for corporate bidders only

RESOLVED that \_\_\_\_\_ be authorized to sign and submit the bid or proposal  
(individual)  
of this corporation for the following project

\_\_\_\_\_  
(describe project)

and to include in such bid or proposal the certificate as to non-collusion required by Section 103-d of the General Municipal Law as the act and deed of such corporation, and for any inaccuracies or misstatements in such certificate this corporate bidder shall be liable under the penalties of perjury.

The foregoing is a true and correct copy of the resolution adopted by \_\_\_\_\_  
corporation at a meeting of its Board of Directors held on the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

SEAL OF CORPORATION)

\_\_\_\_\_  
Secretary

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**Statement Concerning Authority to do Business  
in the State of New York for non-New York State Companies**

**Please complete all requested information in both sections below.**

A certificate of authority is required of out of state companies if the company has property, employees or agents used in conducting its business activities within the state of New York. Generally, business activities are defined as having an office in the state, making sales or promotional calls within the state, delivering products or merchandise and/or making service calls within the state.

Companies conducting mail order activities with New York customers are not considered doing business within New York State if the company **has no property, employees, agents and/or representatives in or, traveling into the state.** \_\_\_\_\_ is such a mail order company, and as such, is not  
(Fill in company name)  
required to hold a Certificate of Authority.

Performance under the attached bid will not result in any action that would result in a requirement to obtain a Certificate as all commerce will be conducted by mail. It is the opinion of the legal counsel for this firm:

Name \_\_\_\_\_  
Address \_\_\_\_\_ (Complete the information)  
Address \_\_\_\_\_  
Telephone \_\_\_\_\_

that this firm is not required to file an Authority to do Business in New York State as required by Section 1301 of the NYS Business Corporate Law.

=====

**Complete one of the following two acknowledgements in addition to above information.**

Individual Acknowledgment for Sole Proprietors or Partnerships

\_\_\_\_\_  
Signature

State of \_\_\_\_\_  
County of \_\_\_\_\_ ss.

On this \_\_\_\_\_ day of \_\_\_\_\_ two thousand and \_\_\_\_\_ before me, the subscriber, personally appeared \_\_\_\_\_ to me personally known and known to me to be the same person described in and who executed the within Instrument, and he/she acknowledged to me that he/she executed the same.

\_\_\_\_\_  
Notary Public

Corporate Acknowledgment for corporations or LLC's

\_\_\_\_\_  
Signature

State of \_\_\_\_\_  
County of \_\_\_\_\_ ss.

On this \_\_\_\_\_ day of \_\_\_\_\_ two thousand and \_\_\_\_\_ before me personally known, who, being by me duly sworn did depose and say that he/she resides in \_\_\_\_\_ that he/she is the \_\_\_\_\_ of \_\_\_\_\_ the corporation described in, and which executed, the above Instrument; that he/she knows the seal of said corporation; that the seal affixed to said Instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said corporation; and that he/she signed his/her name thereto by like order.

\_\_\_\_\_  
Notary Public

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## FEDERAL LAW CERTIFICATION

I, \_\_\_\_\_ [insert name], the \_\_\_\_\_ [insert title] of  
\_\_\_\_\_ [name of company], \_\_\_\_\_ [Nine Digit DUNS  
Number] hereby swear or affirm that the following is true:

1. The company, its principles or entities related to the company named above, is not now, nor ever has been, debarred from contracting with the United States Government or any State government.
2. The company is not now under investigation by any agency of the Federal Government or the government of any State for any actions by the company, its principles or any related entity, for any alleged malfeasance or misfeasance of any kind or nature which could lead to a debarment from governmental contracting or criminal prosecution, as well as render any contracts signed in reliance on this certification voidable by the party relying on this certification. This includes any violations related to the Davis-Bacon Act, the federal prevailing wage statute, the Copeland Act and the Contract Hours and Safety Standards Act which covers hours of work and safety standards in federal public contracting.
3. I have full legal authority under my company's organizational documents or bylaws to make this certification on the company's behalf.
4. I understand that submission of a false statement on this document will subject me to criminal prosecution.

\_\_\_\_\_  
(Date)

\_\_\_\_\_  
(Signature)

**THIS FORM MUST BE COMPLETED AND SUBMITTED WITH THE BID**

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## STATEMENT OF SURETY'S INTENT

To:

\_\_\_\_\_  
(Owner)

We have reviewed the Bid of \_\_\_\_\_  
(Contractor)

of \_\_\_\_\_  
(Address)

for \_\_\_\_\_  
(Project)

Bids for which will be received on \_\_\_\_\_  
(Bid Opening Date)

and wish to advise that should this Bid of the Contractor be accepted, and the Contract awarded to him, it is our present intention to become surety on the performance bond and labor and material bond required by the Contract.

Any arrangement for the bonds required by the Contract is a matter between the Contractor and ourselves and we assume no liability to you or third parties if, for any reason, we do not execute the requisite bonds.

We are duly authorized to do business in the State of New York.

Attest:

\_\_\_\_\_  
\_\_\_\_\_  
(Surety's Authorized Signature)

**Attach Power of Attorney**

(Corporate Seal, if any.  
If no seal, write "No Seal"  
across this place and sign.)

**THIS FORM MUST BE COMPLETED AND SUBMITTED WITH THE BID**

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**CERTIFICATION OF COMPLIANCE WITH THE IRAN DIVESTMENT ACT**

As a result of the Iran Divestment Act of 2012 (the "Act"), Chapter 1 of the 2012 Laws of New York, a new provision has been added to State Finance Law (SFL) § 165-a and New York General Municipal Law § 103-g, both effective Aprils 12, 2012. Under the Act, the Commissioner of the Office of General Services (OGS) will be developing a list of "persons" who are engaged in "investment activities in Iran" (both are defined terms in the law) (the "Prohibited Entities List"). Pursuant to SFL § 165-a(3)(b), the initial list is expected to be issued no later than 120 days after the Act's effective date at which time it will be posted on the OGS website.

By submitting a bid in response to this solicitation or by assuming the responsibility of a Contract awarded hereunder, each Bidder/Contractor, any person signing on behalf of any Bidder/Contractor and any assignee or subcontractor and, in the case of a joint bid, each party thereto, certifies, under penalty of perjury, that once the Prohibited Entities List is posted on the OGS website, that to the best of its knowledge and belief, that each Bidder/Contractor and any subcontractor or assignee is not identified on the Prohibited Entities List created pursuant to SFL § 165-a(3)(b).

Additionally, Bidder/Contractor is advised that once the Prohibited Entities List is posted on the OGS Website, any Bidder/Contractor seeking to renew or extend a Contract or assume the responsibility of a Contract awarded in response to this solicitation must certify at the time the Contract is renewed, extended or assigned that it is not included on the Prohibited Entities List.

During the term of the Contract, should the School District receive information that a Bidder/Contractor is in violation of the above-referenced certification, the School District will offer the person or entity an opportunity to respond. If the person or entity fails to demonstrate that he/she/it has ceased engagement in the investment which is in violation of the Act within 90 days after the determination of such violation, then the School District shall take such action as may be appropriate including, but not limited to, imposing sanctions, seeking compliance, recovering damages or declaring the Bidder/Contractor in default. The School District reserves the right to reject any bid or request for assignment for a Bidder/Contractor that appears on the Prohibited Entities List prior to the award of a contract and to pursue a responsibility review with respect to any Bidder/Contractor that is awarded a contract and subsequently appears on the Prohibited Entities List.

I, \_\_\_\_\_, being duly sworn, deposes and says that he/she is the \_\_\_\_\_ of the \_\_\_\_\_ Corporation and that neither the Bidder/ Contractor nor any proposed subcontractor is identified on the Prohibited Entities List.

\_\_\_\_\_  
SIGNED

SWORN to before me this

\_\_\_\_\_ day of \_\_\_\_\_

20\_\_\_\_

Notary Public: \_\_\_\_\_

**EITHER THIS FORM OR THE "DECLARATION OF BIDDER'S INABILITY TO PROVIDE CERTIFICATION OF COMPLIANCE WITH THE IRAN DIVESTMENT ACT" FORM ON THE FOLLOWING PAGE MUST BE COMPLETED AND SUBMITTED WITH THE BID**

**DECLARATION OF BIDDER'S INABILITY TO PROVIDE CERTIFICATION OF COMPLIANCE  
WITH THE IRAN DIVESTMENT ACT**

***Bidders shall complete this form if they cannot certify that the bidder/contractor or any proposed subcontractor is not identified on the Prohibited Entities List. The District reserves the right to undertake any investigation into the information provided herein or to request additional information from the bidder.***

Name of the Bidder: \_\_\_\_\_

Address of Bidder: \_\_\_\_\_

Has bidder been involved in investment activities in Iran? \_\_\_\_\_

Describe the type of activities including but not limited to the amounts and the nature of the investments (e.g. banking, energy, real estate) \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

If so, when did the first investment activity occur? \_\_\_\_\_

Have the investment activities ended? \_\_\_\_\_

If so, what was the date of the last investment activity? \_\_\_\_\_

If not, have the investment activities increased or expanded since April 12, 2012? \_\_\_\_\_

Has the bidder adopted, publicized, or implemented a formal plan to cease the investment activities in Iran and to refrain from engaging in any new investments in Iran? \_\_\_\_\_

If so, provide the date of the adoption of the plan by the bidder and proof of the adopted resolution, if any and a copy of the formal plan. \_\_\_\_\_

In detail, state the reasons why the bidder cannot provide the Certification of Compliance with the Iran Divestment Act below (additional pages may be attached):

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

I, \_\_\_\_\_ being duly sworn, deposes and says that he/she is the \_\_\_\_\_ of

the \_\_\_\_\_ Corporation and the foregoing is true and accurate.

\_\_\_\_\_  
SIGNED

SWORN to before me this

\_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_

Notary Public: \_\_\_\_\_



**FORM OF PROPOSAL  
Port Jervis City School District  
Additions & Alterations to PJMS**

**BID DESCRIPTION**

**CONTRACT NO. 7: FS1 – FOOD SERVICE EQUIPMENT**

Work under this Contract may generally be described to include, but not be limited to the following:

Procurement and general requirements; and all other work and related materials as indicated on the Contract Drawings, Multiple Contracts Summary, as specified herein, and as required for the complete and proper execution of the Work.

This outline is a general indication of the requirements of this Contract and is not intended to be all inclusive. The complete Contract Documents in their entirety, to include any and all addenda, form the basis of the responsibility of this Contract.

Each contractor is advised that the specification sections in Division 01 - General Requirements apply distinctly to each Prime Contractor and the balance of the technical specifications apply to each Contractor (as appropriate) for the accomplishment of his work.

All work of this contract shall be coordinated with other Prime Contractors involved in the project. All work shall additionally be coordinated with all other activities, construction, or others at each site throughout the progress of the work of this project.

The Contractor shall use all means possible and shall be responsible for coordinating the installation of all materials of this Contract with work of all other trades involved with this project. All work shall be done in strict accordance with the Contract Documents and in compliance with all applicable Local, State and Federal Codes.

Prior to the Bid Date of this project, the Contractor shall be completely responsible for visiting the project site to become completely familiar with the scope of this project.

Each bidder agrees to waive any claim it has or may have against the Owner, the Architect/Engineer, and the respective employees, arising out of or in connection with the administration, evaluation or recommendation of any bid.

It shall be completely understood that the use of asbestos containing materials in this project is strictly forbidden and all materials are provided in accordance with the Federal Asbestos Hazard Emergency Response Act (AHERA), and the New York State Asbestos Safety Act (SASA).

In addition to those items in the Base Bid, the Contractor shall further sub-divide his bid proposal as described in the following bid items, alternates, and/or unit prices. The Contractor shall include in the Base Bid all of the work of this Contract not specifically described in a Bid Item or Alternative. The Owner reserves the right to accept any and/or all of the Bid Items and/or Alternates or any combination thereof and to waive any informalities or defects in the bid proposals either before or after opening.

**Bid Items:** As described in Specification Section 01 2100 – Allowances

- Bid Item No. 1 – Field Directive Allowance

**Alternates:** None

**FORM OF PROPOSAL  
Port Jervis City School District  
Additions & Alterations to PJMS**

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**FORM OF PROPOSAL**  
**Port Jervis City School District**  
**Additions & Alterations to PJMS**

The Undersigned \_\_\_\_\_  
Contractor

\_\_\_\_\_  
Address Zip Code

hereby certifies that he/she has examined and fully comprehends the requirements and intent of the drawings and specifications as prepared by BCA Architects & Engineers, for **CONTRACT NO. 7: FS1 – FOOD SERVICE EQUIPMENT** to furnish all labor, materials, supplies, plant and equipment and other facilities to properly perform the work for the total:

**BASE BID** \_\_\_\_\_

*BASE BID SUM of*  
\_\_\_\_\_ DOLLARS (\$ \_\_\_\_\_)

*Bid Item No. 1 – Field Directive Allowance*  
\_\_\_\_\_ Fifty Thousand DOLLARS (\$ 50,000.00 )

**TOTAL BASE BID (Base Bid and Bid Item No. 1 Included)**  
\_\_\_\_\_ DOLLARS (\$ \_\_\_\_\_)

Receipt of the following Addenda is hereby acknowledged:

No. \_\_\_\_\_ dated \_\_\_\_\_  
No. \_\_\_\_\_ dated \_\_\_\_\_  
No. \_\_\_\_\_ dated \_\_\_\_\_  
No. \_\_\_\_\_ dated \_\_\_\_\_

No. \_\_\_\_\_ dated \_\_\_\_\_  
No. \_\_\_\_\_ dated \_\_\_\_\_  
No. \_\_\_\_\_ dated \_\_\_\_\_  
No. \_\_\_\_\_ dated \_\_\_\_\_

\_\_\_\_\_  
(Name of Bidder)

Signed \_\_\_\_\_  
Title \_\_\_\_\_  
Street \_\_\_\_\_  
City/State \_\_\_\_\_ Zip Code \_\_\_\_\_  
Telephone \_\_\_\_\_  
Fax \_\_\_\_\_  
Cell Phone \_\_\_\_\_  
Email \_\_\_\_\_  
Date \_\_\_\_\_, 20\_\_

## NON-COLLUSIVE BIDDING CERTIFICATE

By submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid, each party thereto certifies as to its own organization, under penalty of perjury, that to the best of his knowledge and belief:

- (1) the prices in this bid have been arrived at independently without collusion, consultation, communication, or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other bidder or with any competitor;
- (2) unless otherwise required by law, the prices which have been quoted in this bid have not been knowingly disclosed by the bidder and will not knowingly be disclosed by the bidder prior to opening, directly or indirectly to any other bidder or to any competitor; and
- (3) no attempt has been made or will be made by the bidder to induce any other person, partnership or corporation to submit or not to submit a bid for the purpose of restricting competition.

(Signed) \_\_\_\_\_

\_\_\_\_\_  
Title

### RESOLUTION - for corporate bidders only

RESOLVED that \_\_\_\_\_ be authorized to sign and submit the bid or proposal  
(individual)  
of this corporation for the following project

\_\_\_\_\_  
(describe project)

and to include in such bid or proposal the certificate as to non-collusion required by Section 103-d of the General Municipal Law as the act and deed of such corporation, and for any inaccuracies or misstatements in such certificate this corporate bidder shall be liable under the penalties of perjury.

The foregoing is a true and correct copy of the resolution adopted by \_\_\_\_\_  
corporation at a meeting of its Board of Directors held on the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

SEAL OF CORPORATION)

\_\_\_\_\_  
Secretary

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**Statement Concerning Authority to do Business  
in the State of New York for non-New York State Companies**

**Please complete all requested information in both sections below.**

A certificate of authority is required of out of state companies if the company has property, employees or agents used in conducting its business activities within the state of New York. Generally, business activities are defined as having an office in the state, making sales or promotional calls within the state, delivering products or merchandise and/or making service calls within the state.

Companies conducting mail order activities with New York customers are not considered doing business within New York State if the company **has no property, employees, agents and/or representatives in or, traveling into the state.** \_\_\_\_\_ is such a mail order company, and as such, is not  
(Fill in company name)  
required to hold a Certificate of Authority.

Performance under the attached bid will not result in any action that would result in a requirement to obtain a Certificate as all commerce will be conducted by mail. It is the opinion of the legal counsel for this firm:

Name \_\_\_\_\_  
Address \_\_\_\_\_ (Complete the information)  
Address \_\_\_\_\_  
Telephone \_\_\_\_\_

that this firm is not required to file an Authority to do Business in New York State as required by Section 1301 of the NYS Business Corporate Law.

=====

**Complete one of the following two acknowledgements in addition to above information.**

Individual Acknowledgment for Sole Proprietors or Partnerships

\_\_\_\_\_  
Signature

State of \_\_\_\_\_  
County of \_\_\_\_\_ ss.

On this \_\_\_\_\_ day of \_\_\_\_\_ two thousand and \_\_\_\_\_ before me, the subscriber, personally appeared \_\_\_\_\_ to me personally known and known to me to be the same person described in and who executed the within Instrument, and he/she acknowledged to me that he/she executed the same.

\_\_\_\_\_  
Notary Public

Corporate Acknowledgment for corporations or LLC's

\_\_\_\_\_  
Signature

State of \_\_\_\_\_  
County of \_\_\_\_\_ ss.

On this \_\_\_\_\_ day of \_\_\_\_\_ two thousand and \_\_\_\_\_ before me personally known, who, being by me duly sworn did depose and say that he/she resides in \_\_\_\_\_ that he/she is the \_\_\_\_\_ of \_\_\_\_\_ the corporation described in, and which executed, the above Instrument; that he/she knows the seal of said corporation; that the seal affixed to said Instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said corporation; and that he/she signed his/her name thereto by like order.

\_\_\_\_\_  
Notary Public

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## FEDERAL LAW CERTIFICATION

I, \_\_\_\_\_ [insert name], the \_\_\_\_\_ [insert title] of  
\_\_\_\_\_ [name of company], \_\_\_\_\_ [Nine Digit DUNS  
Number] hereby swear or affirm that the following is true:

1. The company, its principles or entities related to the company named above, is not now, nor ever has been, debarred from contracting with the United States Government or any State government.
2. The company is not now under investigation by any agency of the Federal Government or the government of any State for any actions by the company, its principles or any related entity, for any alleged malfeasance or misfeasance of any kind or nature which could lead to a debarment from governmental contracting or criminal prosecution, as well as render any contracts signed in reliance on this certification voidable by the party relying on this certification. This includes any violations related to the Davis-Bacon Act, the federal prevailing wage statute, the Copeland Act and the Contract Hours and Safety Standards Act which covers hours of work and safety standards in federal public contracting.
3. I have full legal authority under my company's organizational documents or bylaws to make this certification on the company's behalf.
4. I understand that submission of a false statement on this document will subject me to criminal prosecution.

\_\_\_\_\_  
(Date)

\_\_\_\_\_  
(Signature)

**THIS FORM MUST BE COMPLETED AND SUBMITTED WITH THE BID**

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## STATEMENT OF SURETY'S INTENT

To:

\_\_\_\_\_  
(Owner)

We have reviewed the Bid of \_\_\_\_\_  
(Contractor)

of \_\_\_\_\_  
(Address)

for \_\_\_\_\_  
(Project)

Bids for which will be received on \_\_\_\_\_  
(Bid Opening Date)

and wish to advise that should this Bid of the Contractor be accepted, and the Contract awarded to him, it is our present intention to become surety on the performance bond and labor and material bond required by the Contract.

Any arrangement for the bonds required by the Contract is a matter between the Contractor and ourselves and we assume no liability to you or third parties if, for any reason, we do not execute the requisite bonds.

We are duly authorized to do business in the State of New York.

Attest:

\_\_\_\_\_  
\_\_\_\_\_  
(Surety's Authorized Signature)

**Attach Power of Attorney**

(Corporate Seal, if any.  
If no seal, write "No Seal"  
across this place and sign.)

**THIS FORM MUST BE COMPLETED AND SUBMITTED WITH THE BID**

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**CERTIFICATION OF COMPLIANCE WITH THE IRAN DIVESTMENT ACT**

As a result of the Iran Divestment Act of 2012 (the "Act"), Chapter 1 of the 2012 Laws of New York, a new provision has been added to State Finance Law (SFL) § 165-a and New York General Municipal Law § 103-g, both effective Aprils 12, 2012. Under the Act, the Commissioner of the Office of General Services (OGS) will be developing a list of "persons" who are engaged in "investment activities in Iran" (both are defined terms in the law) (the "Prohibited Entities List"). Pursuant to SFL § 165-a(3)(b), the initial list is expected to be issued no later than 120 days after the Act's effective date at which time it will be posted on the OGS website.

By submitting a bid in response to this solicitation or by assuming the responsibility of a Contract awarded hereunder, each Bidder/Contractor, any person signing on behalf of any Bidder/Contractor and any assignee or subcontractor and, in the case of a joint bid, each party thereto, certifies, under penalty of perjury, that once the Prohibited Entities List is posted on the OGS website, that to the best of its knowledge and belief, that each Bidder/Contractor and any subcontractor or assignee is not identified on the Prohibited Entities List created pursuant to SFL § 165-a(3)(b).

Additionally, Bidder/Contractor is advised that once the Prohibited Entities List is posted on the OGS Website, any Bidder/Contractor seeking to renew or extend a Contract or assume the responsibility of a Contract awarded in response to this solicitation must certify at the time the Contract is renewed, extended or assigned that it is not included on the Prohibited Entities List.

During the term of the Contract, should the School District receive information that a Bidder/Contractor is in violation of the above-referenced certification, the School District will offer the person or entity an opportunity to respond. If the person or entity fails to demonstrate that he/she/it has ceased engagement in the investment which is in violation of the Act within 90 days after the determination of such violation, then the School District shall take such action as may be appropriate including, but not limited to, imposing sanctions, seeking compliance, recovering damages or declaring the Bidder/Contractor in default. The School District reserves the right to reject any bid or request for assignment for a Bidder/Contractor that appears on the Prohibited Entities List prior to the award of a contract and to pursue a responsibility review with respect to any Bidder/Contractor that is awarded a contract and subsequently appears on the Prohibited Entities List.

I, \_\_\_\_\_, being duly sworn, deposes and says that he/she is the \_\_\_\_\_ of the \_\_\_\_\_ Corporation and that neither the Bidder/ Contractor nor any proposed subcontractor is identified on the Prohibited Entities List.

\_\_\_\_\_  
SIGNED

SWORN to before me this

\_\_\_\_\_ day of \_\_\_\_\_

20\_\_\_\_

Notary Public: \_\_\_\_\_

**EITHER THIS FORM OR THE "DECLARATION OF BIDDER'S INABILITY TO PROVIDE CERTIFICATION OF COMPLIANCE WITH THE IRAN DIVESTMENT ACT" FORM ON THE FOLLOWING PAGE MUST BE COMPLETED AND SUBMITTED WITH THE BID**

**DECLARATION OF BIDDER'S INABILITY TO PROVIDE CERTIFICATION OF COMPLIANCE  
WITH THE IRAN DIVESTMENT ACT**

***Bidders shall complete this form if they cannot certify that the bidder/contractor or any proposed subcontractor is not identified on the Prohibited Entities List. The District reserves the right to undertake any investigation into the information provided herein or to request additional information from the bidder.***

Name of the Bidder: \_\_\_\_\_

Address of Bidder: \_\_\_\_\_

Has bidder been involved in investment activities in Iran? \_\_\_\_\_

Describe the type of activities including but not limited to the amounts and the nature of the investments (e.g. banking, energy, real estate) \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

If so, when did the first investment activity occur? \_\_\_\_\_

Have the investment activities ended? \_\_\_\_\_

If so, what was the date of the last investment activity? \_\_\_\_\_

If not, have the investment activities increased or expanded since April 12, 2012? \_\_\_\_\_

Has the bidder adopted, publicized, or implemented a formal plan to cease the investment activities in Iran and to refrain from engaging in any new investments in Iran? \_\_\_\_\_

If so, provide the date of the adoption of the plan by the bidder and proof of the adopted resolution, if any and a copy of the formal plan. \_\_\_\_\_

In detail, state the reasons why the bidder cannot provide the Certification of Compliance with the Iran Divestment Act below (additional pages may be attached):

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

I, \_\_\_\_\_ being duly sworn, deposes and says that he/she is the \_\_\_\_\_ of

the \_\_\_\_\_ Corporation and the foregoing is true and accurate.

\_\_\_\_\_  
SIGNED

SWORN to before me this

\_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_

Notary Public: \_\_\_\_\_

**FORM OF PROPOSAL  
Port Jervis City School District  
Additions & Alterations to PJMS**

**BID DESCRIPTION**

**CONTRACT NO. 9: WC1 – WINDOW CONSTRUCTION**

Work under this Contract may generally be described to include, but not be limited to the following:

Procurement and general requirements; and all other work and related materials as indicated on the Contract Drawings, Multiple Contracts Summary, as specified herein, and as required for the complete and proper execution of the Work.

This outline is a general indication of the requirements of this Contract and is not intended to be all inclusive. The complete Contract Documents in their entirety, to include any and all addenda, form the basis of the responsibility of this Contract.

Each contractor is advised that the specification sections in Division 01 - General Requirements apply distinctly to each Prime Contractor and the balance of the technical specifications apply to each Contractor (as appropriate) for the accomplishment of his work.

All work of this contract shall be coordinated with other Prime Contractors involved in the project. All work shall additionally be coordinated with all other activities, construction, or others at each site throughout the progress of the work of this project.

The Contractor shall use all means possible and shall be responsible for coordinating the installation of all materials of this Contract with work of all other trades involved with this project. All work shall be done in strict accordance with the Contract Documents and in compliance with all applicable Local, State and Federal Codes.

Prior to the Bid Date of this project, the Contractor shall be completely responsible for visiting the project site to become completely familiar with the scope of this project.

Each bidder agrees to waive any claim it has or may have against the Owner, the Architect/Engineer, and the respective employees, arising out of or in connection with the administration, evaluation or recommendation of any bid.

It shall be completely understood that the use of asbestos containing materials in this project is strictly forbidden and all materials are provided in accordance with the Federal Asbestos Hazard Emergency Response Act (AHERA), and the New York State Asbestos Safety Act (SASA).

In addition to those items in the Base Bid, the Contractor shall further sub-divide his bid proposal as described in the following bid items, alternates, and/or unit prices. The Contractor shall include in the Base Bid all of the work of this Contract not specifically described in a Bid Item or Alternative. The Owner reserves the right to accept any and/or all of the Bid Items and/or Alternates or any combination thereof and to waive any informalities or defects in the bid proposals either before or after opening.

**Bid Items:** As described in Specification Section 01 2100 – Allowances

- Bid Item No. 1 – Field Directive Allowance

**Alternates:** As described in Specification Section 01 2300 – Alternates

- Alternate No. WC-1 – Internal Performance Platform

**FORM OF PROPOSAL  
Port Jervis City School District  
Additions & Alterations to PJMS**

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**FORM OF PROPOSAL**  
**Port Jervis City School District**  
**Additions & Alterations to PJMS**

The Undersigned \_\_\_\_\_  
Contractor

\_\_\_\_\_  
Address Zip Code

hereby certifies that he/she has examined and fully comprehends the requirements and intent of the drawings and specifications as prepared by BCA Architects & Engineers, for **CONTRACT NO. 9: WC1 – WINDOW CONSTRUCTION** to furnish all labor, materials, supplies, plant and equipment and other facilities to properly perform the work for the total:

**BASE BID** \_\_\_\_\_

*BASE BID SUM of*  
\_\_\_\_\_ DOLLARS (\$ \_\_\_\_\_)

*Bid Item No. 1 – Field Directive Allowance*  
\_\_\_\_\_ Eighty Thousand DOLLARS (\$ 80,000.00 )

**TOTAL BASE BID (Base Bid and Bid Item No. 1 Included)**  
\_\_\_\_\_ DOLLARS (\$ \_\_\_\_\_)

**ALTERNATES** \_\_\_\_\_

*Alternate No. WC-1 – Internal Performance Platform*  
\_\_\_\_\_ DOLLARS (\$ \_\_\_\_\_)  
ADD / DEDUCT

Receipt of the following Addenda is hereby acknowledged:

No. \_\_\_\_\_ dated \_\_\_\_\_  
No. \_\_\_\_\_ dated \_\_\_\_\_  
No. \_\_\_\_\_ dated \_\_\_\_\_  
No. \_\_\_\_\_ dated \_\_\_\_\_

No. \_\_\_\_\_ dated \_\_\_\_\_  
No. \_\_\_\_\_ dated \_\_\_\_\_  
No. \_\_\_\_\_ dated \_\_\_\_\_  
No. \_\_\_\_\_ dated \_\_\_\_\_

\_\_\_\_\_  
(Name of Bidder)

Signed \_\_\_\_\_  
Title \_\_\_\_\_  
Street \_\_\_\_\_  
City/State \_\_\_\_\_ Zip Code \_\_\_\_\_  
Telephone \_\_\_\_\_  
Fax \_\_\_\_\_  
Cell Phone \_\_\_\_\_  
Email \_\_\_\_\_  
Date \_\_\_\_\_, 20\_\_

## NON-COLLUSIVE BIDDING CERTIFICATE

By submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid, each party thereto certifies as to its own organization, under penalty of perjury, that to the best of his knowledge and belief:

- (1) the prices in this bid have been arrived at independently without collusion, consultation, communication, or agreement, for the purpose of restricting competition, as to any matter relating to such prices with any other bidder or with any competitor;
- (2) unless otherwise required by law, the prices which have been quoted in this bid have not been knowingly disclosed by the bidder and will not knowingly be disclosed by the bidder prior to opening, directly or indirectly to any other bidder or to any competitor; and
- (3) no attempt has been made or will be made by the bidder to induce any other person, partnership or corporation to submit or not to submit a bid for the purpose of restricting competition.

(Signed) \_\_\_\_\_

\_\_\_\_\_  
Title

### RESOLUTION - for corporate bidders only

RESOLVED that \_\_\_\_\_ be authorized to sign and submit the bid or proposal  
(individual)  
of this corporation for the following project

\_\_\_\_\_  
(describe project)

and to include in such bid or proposal the certificate as to non-collusion required by Section 103-d of the General Municipal Law as the act and deed of such corporation, and for any inaccuracies or misstatements in such certificate this corporate bidder shall be liable under the penalties of perjury.

The foregoing is a true and correct copy of the resolution adopted by \_\_\_\_\_  
corporation at a meeting of its Board of Directors held on the \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

SEAL OF CORPORATION)

\_\_\_\_\_  
Secretary

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**Statement Concerning Authority to do Business  
in the State of New York for non-New York State Companies**

**Please complete all requested information in both sections below.**

A certificate of authority is required of out of state companies if the company has property, employees or agents used in conducting its business activities within the state of New York. Generally, business activities are defined as having an office in the state, making sales or promotional calls within the state, delivering products or merchandise and/or making service calls within the state.

Companies conducting mail order activities with New York customers are not considered doing business within New York State if the company **has no property, employees, agents and/or representatives in or, traveling into the state.** \_\_\_\_\_ is such a mail order company, and as such, is not  
(Fill in company name)  
required to hold a Certificate of Authority.

Performance under the attached bid will not result in any action that would result in a requirement to obtain a Certificate as all commerce will be conducted by mail. It is the opinion of the legal counsel for this firm:

Name \_\_\_\_\_  
Address \_\_\_\_\_ (Complete the information)  
Address \_\_\_\_\_  
Telephone \_\_\_\_\_

that this firm is not required to file an Authority to do Business in New York State as required by Section 1301 of the NYS Business Corporate Law.

=====

**Complete one of the following two acknowledgements in addition to above information.**

Individual Acknowledgment for Sole Proprietors or Partnerships

\_\_\_\_\_  
Signature

State of \_\_\_\_\_  
County of \_\_\_\_\_ ss.

On this \_\_\_\_\_ day of \_\_\_\_\_ two thousand and \_\_\_\_\_ before me, the subscriber, personally appeared \_\_\_\_\_ to me personally known and known to me to be the same person described in and who executed the within Instrument, and he/she acknowledged to me that he/she executed the same.

\_\_\_\_\_  
Notary Public

Corporate Acknowledgment for corporations or LLC's

\_\_\_\_\_  
Signature

State of \_\_\_\_\_  
County of \_\_\_\_\_ ss.

On this \_\_\_\_\_ day of \_\_\_\_\_ two thousand and \_\_\_\_\_ before me personally known, who, being by me duly sworn did depose and say that he/she resides in \_\_\_\_\_ that he/she is the \_\_\_\_\_ of \_\_\_\_\_ the corporation described in, and which executed, the above Instrument; that he/she knows the seal of said corporation; that the seal affixed to said Instrument is such corporate seal; that it was so affixed by order of the Board of Directors of said corporation; and that he/she signed his/her name thereto by like order.

\_\_\_\_\_  
Notary Public

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## FEDERAL LAW CERTIFICATION

I, \_\_\_\_\_ [insert name], the \_\_\_\_\_ [insert title] of  
\_\_\_\_\_ [name of company], \_\_\_\_\_ [Nine Digit DUNS  
Number] hereby swear or affirm that the following is true:

1. The company, its principles or entities related to the company named above, is not now, nor ever has been, debarred from contracting with the United States Government or any State government.
2. The company is not now under investigation by any agency of the Federal Government or the government of any State for any actions by the company, its principles or any related entity, for any alleged malfeasance or misfeasance of any kind or nature which could lead to a debarment from governmental contracting or criminal prosecution, as well as render any contracts signed in reliance on this certification voidable by the party relying on this certification. This includes any violations related to the Davis-Bacon Act, the federal prevailing wage statute, the Copeland Act and the Contract Hours and Safety Standards Act which covers hours of work and safety standards in federal public contracting.
3. I have full legal authority under my company's organizational documents or bylaws to make this certification on the company's behalf.
4. I understand that submission of a false statement on this document will subject me to criminal prosecution.

\_\_\_\_\_  
(Date)

\_\_\_\_\_  
(Signature)

**THIS FORM MUST BE COMPLETED AND SUBMITTED WITH THE BID**

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## STATEMENT OF SURETY'S INTENT

To:

\_\_\_\_\_  
(Owner)

We have reviewed the Bid of \_\_\_\_\_  
(Contractor)

of \_\_\_\_\_  
(Address)

for \_\_\_\_\_  
(Project)

Bids for which will be received on \_\_\_\_\_  
(Bid Opening Date)

and wish to advise that should this Bid of the Contractor be accepted, and the Contract awarded to him, it is our present intention to become surety on the performance bond and labor and material bond required by the Contract.

Any arrangement for the bonds required by the Contract is a matter between the Contractor and ourselves and we assume no liability to you or third parties if, for any reason, we do not execute the requisite bonds.

We are duly authorized to do business in the State of New York.

Attest:

\_\_\_\_\_  
\_\_\_\_\_  
(Surety's Authorized Signature)

**Attach Power of Attorney**

(Corporate Seal, if any.  
If no seal, write "No Seal"  
across this place and sign.)

**THIS FORM MUST BE COMPLETED AND SUBMITTED WITH THE BID**

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**CERTIFICATION OF COMPLIANCE WITH THE IRAN DIVESTMENT ACT**

As a result of the Iran Divestment Act of 2012 (the "Act"), Chapter 1 of the 2012 Laws of New York, a new provision has been added to State Finance Law (SFL) § 165-a and New York General Municipal Law § 103-g, both effective Aprils 12, 2012. Under the Act, the Commissioner of the Office of General Services (OGS) will be developing a list of "persons" who are engaged in "investment activities in Iran" (both are defined terms in the law) (the "Prohibited Entities List"). Pursuant to SFL § 165-a(3)(b), the initial list is expected to be issued no later than 120 days after the Act's effective date at which time it will be posted on the OGS website.

By submitting a bid in response to this solicitation or by assuming the responsibility of a Contract awarded hereunder, each Bidder/Contractor, any person signing on behalf of any Bidder/Contractor and any assignee or subcontractor and, in the case of a joint bid, each party thereto, certifies, under penalty of perjury, that once the Prohibited Entities List is posted on the OGS website, that to the best of its knowledge and belief, that each Bidder/Contractor and any subcontractor or assignee is not identified on the Prohibited Entities List created pursuant to SFL § 165-a(3)(b).

Additionally, Bidder/Contractor is advised that once the Prohibited Entities List is posted on the OGS Website, any Bidder/Contractor seeking to renew or extend a Contract or assume the responsibility of a Contract awarded in response to this solicitation must certify at the time the Contract is renewed, extended or assigned that it is not included on the Prohibited Entities List.

During the term of the Contract, should the School District receive information that a Bidder/Contractor is in violation of the above-referenced certification, the School District will offer the person or entity an opportunity to respond. If the person or entity fails to demonstrate that he/she/it has ceased engagement in the investment which is in violation of the Act within 90 days after the determination of such violation, then the School District shall take such action as may be appropriate including, but not limited to, imposing sanctions, seeking compliance, recovering damages or declaring the Bidder/Contractor in default. The School District reserves the right to reject any bid or request for assignment for a Bidder/Contractor that appears on the Prohibited Entities List prior to the award of a contract and to pursue a responsibility review with respect to any Bidder/Contractor that is awarded a contract and subsequently appears on the Prohibited Entities List.

I, \_\_\_\_\_, being duly sworn, deposes and says that he/she is the \_\_\_\_\_ of the \_\_\_\_\_ Corporation and that neither the Bidder/ Contractor nor any proposed subcontractor is identified on the Prohibited Entities List.

\_\_\_\_\_  
SIGNED

SWORN to before me this

\_\_\_\_\_ day of \_\_\_\_\_

20\_\_\_\_

Notary Public: \_\_\_\_\_

**EITHER THIS FORM OR THE "DECLARATION OF BIDDER'S INABILITY TO PROVIDE CERTIFICATION OF COMPLIANCE WITH THE IRAN DIVESTMENT ACT" FORM ON THE FOLLOWING PAGE MUST BE COMPLETED AND SUBMITTED WITH THE BID**

**DECLARATION OF BIDDER'S INABILITY TO PROVIDE CERTIFICATION OF COMPLIANCE  
WITH THE IRAN DIVESTMENT ACT**

***Bidders shall complete this form if they cannot certify that the bidder/contractor or any proposed subcontractor is not identified on the Prohibited Entities List. The District reserves the right to undertake any investigation into the information provided herein or to request additional information from the bidder.***

Name of the Bidder: \_\_\_\_\_

Address of Bidder: \_\_\_\_\_

Has bidder been involved in investment activities in Iran? \_\_\_\_\_

Describe the type of activities including but not limited to the amounts and the nature of the investments (e.g. banking, energy, real estate) \_\_\_\_\_

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

If so, when did the first investment activity occur? \_\_\_\_\_

Have the investment activities ended? \_\_\_\_\_

If so, what was the date of the last investment activity? \_\_\_\_\_

If not, have the investment activities increased or expanded since April 12, 2012? \_\_\_\_\_

Has the bidder adopted, publicized, or implemented a formal plan to cease the investment activities in Iran and to refrain from engaging in any new investments in Iran? \_\_\_\_\_

If so, provide the date of the adoption of the plan by the bidder and proof of the adopted resolution, if any and a copy of the formal plan. \_\_\_\_\_

In detail, state the reasons why the bidder cannot provide the Certification of Compliance with the Iran Divestment Act below (additional pages may be attached):

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

I, \_\_\_\_\_ being duly sworn, deposes and says that he/she is the \_\_\_\_\_ of

the \_\_\_\_\_ Corporation and the foregoing is true and accurate.

\_\_\_\_\_  
SIGNED

SWORN to before me this

\_\_\_\_\_ day of \_\_\_\_\_, 20\_\_\_\_

Notary Public: \_\_\_\_\_

# DRAFT AIA® Document A132™ – 2019

## Standard Form of Agreement Between Owner and Contractor, Construction Manager as Adviser Edition

**AGREEMENT** made as of the « » day of « » in the year « »  
(In words, indicate day, month, and year.)

**BETWEEN** the Owner:  
(Name, legal status, address, and other information)

«Port Jervis City School District»«»  
«9 Thompson Street  
Port Jervis, New York 12771»  
«Telephone Number: (845) 858-3100»  
«»

and the Contractor:  
(Name, legal status, address, and other information)

« »« »  
« »  
« »  
« »

for the following Project:  
(Name, location, and detailed description)

«Port Jervis CSD Additions & Alterations to PJMS»  
«Port Jervis Middle School  
9 Thompson Street  
Port Jervis, New York 12771»  
«SED Control No. 44-18-00-05-0-005-016

BCA Project No. 2019-011 Ph1

Contract No. X - XXX Construction»

The Construction Manager:  
(Name, legal status, address, and other information)

«the Palombo Group»«»  
«195 Front Street  
First Floor  
Newburgh, New York 12550»  
«Telephone Number: (845) 594-5328»  
«»

The Architect:  
(Name, legal status, address, and other information)

«Bernier, Carr & Associates Engineers, Architects, and Land Surveyors, P.C.»«»  
«798 Cascadilla Street  
Suite C  
Ithaca, New York 14850»

**ADDITIONS AND DELETIONS:** The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

This document is intended to be used in conjunction with AIA Documents A232™-2019, General Conditions of the Contract for Construction, Construction Manager as Adviser Edition; B132™-2019, Standard Form of Agreement Between Owner and Architect, Construction Manager as Adviser Edition; and C132™-2019, Standard Form of Agreement Between Owner and Construction Manager as Adviser. AIA Document A232™-2019 is adopted in this document by reference. Do not use with other general conditions unless this document is modified.

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«Telephone Number: (607) 319-4053»

«»

The Owner and Contractor agree as follows.



## TABLE OF ARTICLES

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| 1 | THE CONTRACT DOCUMENTS                                   |
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| 3 | DATE OF COMMENCEMENT AND DATES OF SUBSTANTIAL COMPLETION |
| 4 | CONTRACT SUM                                             |
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### EXHIBIT A INSURANCE AND BONDS

### EXHIBIT B DETERMINATION OF THE COST OF THE WORK

## ARTICLE 1 THE CONTRACT DOCUMENTS

The Contract Documents consist of this Agreement, Conditions of the Contract (General, Supplementary, and other Conditions), Drawings, Specifications, Addenda issued prior to execution of this Agreement, other documents listed in this Agreement, and Modifications issued after execution of this Agreement, all of which form the Contract, and are as fully a part of the Contract as if attached to this Agreement or repeated herein. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. An enumeration of the Contract Documents, other than Modifications, appears in Article 9.

## ARTICLE 2 THE WORK OF THIS CONTRACT

The Contractor shall fully execute the Work described in the Contract Documents, except as specifically indicated in the Contract Documents to be the responsibility of others.

## ARTICLE 3 DATE OF COMMENCEMENT AND DATES OF SUBSTANTIAL COMPLETION

### § 3.1 The date of commencement of the Work shall be:

*(Check one of the following boxes.)*

☒ [ X ] The date of this Agreement.

☐ [ ] A date set forth in a notice to proceed issued by the Owner.

☐ [ ] Established as follows:  
*(Insert a date or a means to determine the date of commencement of the Work.)*

« »

If a date of commencement of the Work is not selected, then the date of commencement shall be the date of this Agreement.

### § 3.2 The Contract Time shall be measured from the date of commencement of the Work.

### § 3.3 Substantial Completion of the Project or Portions Thereof

§ 3.3.1 Subject to adjustments of the Contract Time as provided in the Contract Documents, the date of Substantial Completion of the Work of all of the Contractors for the Project will be:

*(Insert the date of Substantial Completion of the Work of all Contractors for the Project.)*

§ 3.3.2 Subject to adjustments of the Contract Time as provided in the Contract Documents, if portions of the Work of all of the Contractors for the Project are to be completed prior to Substantial Completion of the entire Work of all of the Contractors for the Project, the Contractors shall achieve Substantial Completion of such portions by the following dates:

Portion of Work

Substantial Completion Date

§ 3.4 When the Work of this Contract, or any Portion Thereof, is Substantially Complete

§ 3.4.1 Subject to adjustments of the Contract Time as provided in the Contract Documents, the Contractor shall substantially complete the entire Work of this Contract:

(Check one of the following boxes and complete the necessary information.)

[ ☐ ] Not later than  (  ) calendar days from the date of commencement of the Work.

[ ☒ ] By the following date:

§ 3.4.2 Subject to adjustments of the Contract Time as provided in the Contract Documents, if portions of the Work of this Contract are to be substantially complete prior to when the entire Work of this Contract shall be substantially complete, the Contractor shall substantially complete such portions by the following dates:

Portion of Work

Date to be substantially complete

§ 3.4.3 If the Contractor fails to substantially complete the Work of this Contract, or portions thereof, as provided in this Section 3.4, liquidated damages, if any, shall be assessed as set forth in Section 4.5.

ARTICLE 4 CONTRACT SUM

§ 4.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor's performance of the Contract. The Contract Sum shall be one of the following:

(Check the appropriate box.)

[ ☒ ] Stipulated Sum, in accordance with Section 4.2 below

[ ☐ ] Cost of the Work plus the Contractor's Fee, in accordance with Section 4.3 below

[ ☐ ] Cost of the Work plus the Contractor's Fee with a Guaranteed Maximum Price, in accordance with Section 4.4 below

(Based on the selection above, complete Section 4.2, 4.3 or 4.4 below.)

§ 4.2 Stipulated Sum

§ 4.2.1 The Contract Sum shall be  (\$  ), subject to additions and deductions as provided in the Contract Documents.

§ 4.2.2 Alternates

§ 4.2.2.1 Alternates, if any, included in the Contract Sum:

Item

Price

§ 4.2.2.2 Subject to the conditions noted below, the following alternates may be accepted by the Owner following execution of this Agreement. Upon acceptance, the Owner shall issue a Modification to this Agreement.

(Insert below each alternate and the conditions that must be met for the Owner to accept the alternate.)



| Item | Price | Conditions for Acceptance |
|------|-------|---------------------------|
|      |       |                           |

§ 4.2.3 Allowances, if any, included in the Contract Sum:  
(Identify each allowance.)

| Item | Price |
|------|-------|
|      |       |

§ 4.2.4 Unit prices, if any:  
(Identify the item and state the unit price, and quantity limitations, if any, to which the unit price will be applicable.)

| Item | Units and Limitations | Price per Unit (\$0.00) |
|------|-----------------------|-------------------------|
|      |                       |                         |

§ 4.5 Liquidated damages, if any:  
(Insert terms and conditions for liquidated damages, if any, to be assessed in accordance with Section 3.4.)

« »

§ 4.6 Other:  
(Insert provisions for bonus, cost savings or other incentives, if any, that might result in a change to the Contract Sum.)

« »

## ARTICLE 5 PAYMENTS

### § 5.1 Progress Payments

§ 5.1.1 Based upon Applications for Payment submitted to the Construction Manager by the Contractor, and Certificates for Payment issued by the Construction Manager and Architect, the Owner shall make progress payments on account of the Contract Sum, to the Contractor, as provided below and elsewhere in the Contract Documents.

§ 5.1.2 The period covered by each Application for Payment shall be one calendar month ending on the last day of the month, or as follows:

« »

§ 5.1.3 Provided that an Application for Payment is received by the Construction Manager not later than the « 20th » day of a month, the Owner shall make payment of the amount certified to the Contractor not later than « thirty (30) » days after receiving the Application for Payment. If an Application for Payment is received by the Construction Manager after the application date fixed above, payment of the amount certified shall be made by the Owner not later than « thirty » ( « 30 » ) days after the Construction Manager receives the Application for Payment.  
(Federal, state or local laws may require payment within a certain period of time.)

### § 5.1.4 Progress Payments Where the Contract Sum is Based on a Stipulated Sum

§ 5.1.4.1 Each Application for Payment shall be based on the most recent schedule of values submitted by the Contractor in accordance with the Contract Documents. The schedule of values shall allocate the entire Contract Sum among the various portions of the Work. The schedule of values shall be prepared in such form, and supported by such data to substantiate its accuracy, as the Construction Manager and Architect may require. This schedule of values shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 5.1.4.2 Applications for Payment shall show the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment.

§ 5.1.4.3 In accordance with AIA Document A232™–2019, General Conditions of the Contract for Construction, Construction Manager as Adviser Edition, and subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

§ 5.1.4.3.1 The amount of each progress payment shall first include:

- .1 That portion of the Contract Sum properly allocable to completed Work;
- .2 That portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction, or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing; and
- .3 That portion of Construction Change Directives that the Architect determines, in the Architect's professional judgment, to be reasonably justified.

§ 5.1.4.3.2 The amount of each progress payment shall then be reduced by:

- .1 The aggregate of any amounts previously paid by the Owner;
- .2 The amount, if any, for Work that remains uncorrected and for which the Architect has previously withheld a Certificate for Payment as provided in Article 9 of AIA Document A232–2019;
- .3 Any amount for which the Contractor does not intend to pay a Subcontractor or material supplier, unless the Work has been performed by others the Contractor intends to pay;
- .4 For Work performed or defects discovered since the last payment application, any amount for which the Architect may withhold payment, or nullify a Certificate of Payment in whole or in part, as provided in Article 9 of AIA Document A232–2019; and
- .5 Retainage withheld pursuant to Section 5.1.7.

## § 5.1.7 Retainage

§ 5.1.7.1 For each progress payment made prior to when the Work of this Contract is substantially complete, the Owner may withhold the following amount, as retainage, from the payment otherwise due:

*(Insert a percentage or amount to be withheld as retainage from each Application for Payment. The amount of retainage may be limited by governing law.)*

« Five Percent (5%) »

§ 5.1.7.1.1 The following items are not subject to retainage:

*(Insert any items not subject to the withholding of retainage, such as general conditions, insurance, etc.)*

« »

§ 5.1.7.2 Reduction or limitation of retainage, if any, shall be as follows:

*(If the retainage established in Section 5.1.7.1 is to be modified prior to when the entire Work of this Contract is substantially complete, including modifications for completion of portions of the Work as provided in Section 3.4.2, insert provisions for such modifications.)*

« »

§ 5.1.7.3 Except as set forth in this Section 5.1.7.3, when the Work of this Contract is substantially complete, the Contractor may submit an Application for Payment that includes the retainage withheld from prior Applications for Payment pursuant to this Section 5.1.7. The Application for Payment submitted when the Work of this Contract is substantially complete shall not include retainage as follows:

*(Insert any other conditions for release of retainage when the Work of this Contract is substantially complete, or upon Substantial Completion of the Work of all Contractors on the Project or portions thereof.)*

« »

## § 5.2 Final Payment

§ 5.2.1 Final Payment Where the Contract Sum is Based on a Stipulated Sum

§ 5.2.1.1 Final payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Contractor when

- .1 the Contractor has fully performed the Contract except for the Contractor's responsibility to correct Work as provided in Article 12 of AIA Document A232–2019, and to satisfy other requirements, if any, which extend beyond final payment; and
- .2 a final Certificate for Payment or Project Certificate for Payment has been issued by the Architect.

§ 5.2.1.2 The Owner's final payment to the Contractor shall be made no later than 30 days after the issuance of the final Certificate for Payment or Project Certificate for Payment, or as follows:

« »

§ 5.3 Payments due and unpaid under the Contract shall bear interest from the date payment is due at the rate stated below, or in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.  
(Insert rate of interest agreed upon, if any.)

« » % « »

## ARTICLE 6 DISPUTE RESOLUTION

### § 6.1 Initial Decision Maker

The Architect will serve as Initial Decision Maker pursuant to Article 15 of AIA Document A232–2019, unless the parties appoint below another individual, not a party to this Agreement, to serve as Initial Decision Maker.

(If the parties mutually agree, insert the name, address and other contact information of the Initial Decision Maker, if other than the Architect.)

« »

« »

« »

« »

### § 6.2 Binding Dispute Resolution

For any Claim subject to, but not resolved by, mediation pursuant to Article 15 of AIA Document A232–2019, the method of binding dispute resolution shall be as follows:

(Check the appropriate box.)

[ ☐ ] Arbitration pursuant to Article 15 of AIA Document A232–2019.

[ ☒ ] Litigation in a court of competent jurisdiction.

[ ☐ ] Other: (Specify)

« »

If the Owner and Contractor do not select a method of binding dispute resolution, or do not subsequently agree in writing to a binding dispute resolution method other than litigation, Claims will be resolved by litigation in a court of competent jurisdiction.

## ARTICLE 7 TERMINATION OR SUSPENSION

### § 7.1 Where the Contract Sum is a Stipulated Sum

§ 7.1.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A232–2019.

§ 7.1.1.1 If the Contract is terminated for the Owner's convenience in accordance with Article 14 of AIA Document A232–2019, then the Owner shall pay the Contractor a termination fee as follows:

(Insert the amount of, or method for determining, the fee, if any, payable to the Contractor following a termination for the Owner's convenience.)

« »

§ 7.1.2 The Work may be suspended by the Owner as provided in Article 14 of AIA Document A232–2019.

### § 7.3 Suspension

The Work may be suspended by the Owner as provided in Article 14 of AIA Document A232–2019; in such case, the Contract Sum and Contract Time shall be increased as provided in Article 14 of AIA Document A232–2019, except that

the term “profit” shall be understood to mean the Contractor’s Fee as described in Section 4.3.2 or 4.4.2, as applicable, of this Agreement.

## ARTICLE 8 MISCELLANEOUS PROVISIONS

§ 8.1 Where reference is made in this Agreement to a provision of AIA Document A232–2019 or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

§ 8.2 The Owner’s representative:  
(Name, address, email address, and other information)

«Deborah Lasch»  
«9 Thompson Street  
Port Jervis, New York 12771»  
«Telephone Number: (845) 858-3100»  
«»  
«»  
«Email Address: delasch@pjschools.org»

§ 8.3 The Contractor’s representative:  
(Name, address, email address, and other information)

« »  
« »  
« »  
« »  
« »  
« »

§ 8.4 Neither the Owner’s nor the Contractor’s representative shall be changed without ten days’ prior notice to the other party.

### § 8.5 Insurance and Bonds

§ 8.5.1 The Owner and the Contractor shall purchase and maintain insurance as set forth in Article 11 of AIA Document A232™–2019, the Supplemental Conditions of the Contract and elsewhere in the Contract Documents.

§ 8.5.2 The Contractor shall provide bonds as set forth in Article 11 of AIA Document A232™–2019, the Supplemental Conditions of the Contract and elsewhere in the Contract Documents.

§ 8.6 Notice in electronic format, pursuant to Article 1 of AIA Document A232–2019, may be given in accordance with AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, if completed, or as otherwise set forth below:

*(If other than in accordance with AIA Document E203–2013, insert requirements for delivering notice in electronic format such as name, title, and email address of the recipient and whether and how the system will be required to generate a read receipt for the transmission.)*

« »

### § 8.7 Relationship of the Parties

Where the Contract is based on the Cost of the Work plus the Contractor’s Fee, with or without a Guaranteed Maximum Price, the Contractor accepts the relationship of trust and confidence established by this Agreement and covenants with the Owner to cooperate with the Architect and exercise the Contractor’s skill and judgment in furthering the interests of the Owner; to furnish efficient business administration and supervision; to furnish at all times an adequate supply of workers and materials; and to perform the Work in an expeditious and economical manner consistent with the Owner’s interests. The Owner agrees to furnish and approve, in a timely manner, information required by the Contractor and to make payments to the Contractor in accordance with the requirements of the Contract Documents.

### § 8.8 Other provisions:

## ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

§ 9.1 This Agreement is comprised of the following documents:

- .1 AIA Document A132™–2019, Standard Form of Agreement Between Owner and Contractor, Construction Manager as Adviser Edition
- .2 AIA Document A132™–2019, Exhibit A, Insurance and Bonds Exhibit
- .3 AIA Document A232™–2019, General Conditions of the Contract for Construction, Construction Manager as Adviser Edition
- .4 AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, dated as indicated below:  
(Insert the date of the E203-2013 incorporated into this Agreement.)

<< >>

- .5 Drawings

| Number | Title | Date |
|--------|-------|------|
|        |       |      |

- .6 Specifications

| Section | Title | Date | Pages |
|---------|-------|------|-------|
|         |       |      |       |

- .7 Addenda, if any:

| Number | Date | Pages |
|--------|------|-------|
|        |      |       |

Portions of Addenda relating to bidding or proposal requirements are not part of the Contract Documents unless the bidding or proposal requirements are also enumerated in this Article 9.

- .8 Other Exhibits:  
(Check all boxes that apply and include appropriate information identifying the exhibit where required.)

[ ☐ ] AIA Document A132™–2019, Exhibit B, Determination of the Cost of the Work

[ ☐ ] AIA Document E235™–2019, Sustainable Projects Exhibit, Construction Manager as Adviser Edition, dated as indicated below:  
(Insert the date of the E235-2019 incorporated into this Agreement.)

<< >>

[ ☐ ] The Sustainability Plan:

| Title | Date | Pages |
|-------|------|-------|
|       |      |       |

[ ☐ ] Supplementary and other Conditions of the Contract:

| Document | Title | Date | Pages |
|----------|-------|------|-------|
|          |       |      |       |

- .9 Other documents, if any, listed below:

*(List here any additional documents that are intended to form part of the Contract Documents. AIA Document A232–2019 provides that the advertisement or invitation to bid, Instructions to Bidders, sample forms, the Contractor’s bid or proposal, portions of Addenda relating to bidding or proposal requirements, and other information furnished by the Owner in anticipation of receiving bids or proposals, are not part of the Contract Documents unless enumerated in this Agreement. Any such documents should be listed here only if intended to be part of the Contract Documents.)*

« [INSERT CONTRACTORS PROPOSAL DATED (MONTH DAY, YEAR)] »

This Agreement is entered into as of the day and year first written above.

**OWNER** *(Signature)*

«Deborah Lasch»«», President»

*(Printed name and title)*

**CONTRACTOR** *(Signature)*

« »« »

*(Printed name and title)*

 **AIA<sup>®</sup> Document A232<sup>™</sup> – 2019****General Conditions of the Contract for Construction, Construction Manager as Adviser  
Edition****for the following PROJECT:***(Name, and location or address)*

Port Jervis CSD Additions & Alterations to PJMS  
Port Jervis Middle School  
9 Thompson Street  
Port Jervis, New York 12771

**THE CONSTRUCTION MANAGER:***(Name, legal status, and address)*

the Palombo Group  
195 Front Street  
First Floor  
Newburgh, New York 12550

**THE OWNER:***(Name, legal status, and address)*

Port Jervis City School District  
9 Thompson Street  
Port Jervis, New York 12771

**THE ARCHITECT:***(Name, legal status, and address)*

Bernier, Carr & Associates Engineers, Architects, and Land Surveyors, P.C.  
798 Cascadilla Street  
Suite C  
Ithaca, New York 14850

**ADDITIONS AND DELETIONS:**

The author of this document has added information needed for its completion. The author may also have revised the text of the original AIA standard form. An *Additions and Deletions Report* that notes added information as well as revisions to the standard form text is available from the author and should be reviewed. A vertical line in the left margin of this document indicates where the author has added necessary information and where the author has added to or deleted from the original AIA text.

This document has important legal consequences. Consultation with an attorney is encouraged with respect to its completion or modification.

This document is intended to be used in conjunction with AIA Documents A132<sup>™</sup>–2019, Standard Form of Agreement Between Owner and Contractor, Construction Manager as Adviser Edition; B132<sup>™</sup>–2019, Standard Form of Agreement Between Owner and Architect, Construction Manager as Adviser Edition; and C132<sup>™</sup>–2019, Standard Form of Agreement Between Owner and Construction Manager as Adviser.

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## ARTICLE 1 GENERAL PROVISIONS

### § 1.1 Basic Definitions

**§ 1.1.1 The Contract Documents.** The Contract Documents include the Notice to Bidders, Information to Bidders, Form of Proposals, General Conditions, Specifications, Drawings, Addenda issued prior to execution of the Contract, Agreement between Owner and Contractor ("Agreement"), other Documents listed in the Agreement, and Modifications issued or negotiated after receipt of bids or execution of the Agreement, and when required by Governmental Agencies or Departments, appropriately inserted Certifications, Regulations, and Wage Rate Schedules.

**§ 1.1.2 The Contract.** The Contract Documents form the Contract for Construction. The Contract or Agreement represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Architect or the Architect's consultants, (2) between the Owner and the Construction Manager or the Construction Manager's consultants, (3) between the Owner and the Architect or the Architect's consultants, (4) between the Contractor and the Construction Manager or the Construction Manager's consultants, (5) between the Owner and a Subcontractor or Sub-subcontractor (6) between the Construction Manager and the Architect as a representative of the Owner, or (7) between any persons or entities other than the Owner and Contractor. The Construction Manager and Architect, as a representative of the Owner, shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of their duties.

Subcontractors shall assume the same obligations to the Contractors as the Contractor has to the Owner and the Architect under General Conditions AIA A232-2019 relationships and responsibilities of the Contractor to the Owner or Architect as defined in General Conditions AIA A232-2019 shall become those of the Subcontractor to the Contractor.

**§ 1.1.2.1** Where the term "Agreement", "Contract" or "Prime Contract" is used in the General Conditions, Supplementary General Conditions, and other Contract Documents, it shall mean the separate Owner-Contractor Agreement between the Owner and each individual Prime Contractor identified in Conditions of the Contract (General, Supplementary and other conditions)."

**§ 1.1.3 The Work.** The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment, and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

**§ 1.1.4 The Project.** The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by other Contractors, and by the Owner's own forces and Separate Contractors.

**§ 1.1.5 Contractors.** Contractors are persons or entities, other than the Contractor or Separate Contractors, who perform Work under contracts with the Owner that are administered by the Architect and Construction Manager.

**§ 1.1.6 Separate Contractors.** Separate Contractors are persons or entities who perform construction under separate contracts with the Owner not administered by the Architect and Construction Manager.

**§ 1.1.7 The Drawings.** The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules, and diagrams.

**§ 1.1.8 The Specifications.** The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services.

**§ 1.1.9 Instruments of Service.** Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect's

consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials.

**§ 1.1.10 Initial Decision Maker.** The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2. The Initial Decision Maker shall not show partiality to the Owner or Contractor and shall not be liable for results of interpretations or decisions rendered in good faith.

**§ 1.1.11 Miscellaneous Definitions:**

- .1 The term "Addendum/Addenda" shall mean Changes to the Contract Documents prior to the receipt of bids which are made part of the Agreement.
- .2 The term "Herein" shall mean the contents of the Contract Documents and/or the contents of the particular section where this term appears.
- .3 The term "Indicated" as used herein shall mean shown on the Drawings or described in the Contract Documents. Terms such as "Shown", "Noted", "Scheduled" and "Specified" have the same meaning as "As Indicated".
- .4 The term "Concealed" as used herein shall mean items hidden from sight in such locations as trenches, chases, shafts, furred spaces, walls, slabs, above ceilings and in crawl spaces or service tunnels.
- .5 The term "Exposed" as used herein shall mean not "concealed" as defined herein and the spaces behind normally closed doors such as interiors of cabinets.
- .6 The term "Product" as used herein shall include materials, systems and/or equipment.
- .7 The term "Furnish" as used herein shall mean furnish and deliver to the job site all products necessary that are connected with the Work including unloading, handling, transporting, unwrapping, and inspecting those products to be installed.
- .8 The term "Install" as used herein shall mean furnish all labor and perform all operations connected with assembly, erection, anchoring, installation of products or Work, curing, finishing, cleaning and similar operations including supplying all necessary tools, rigging and equipment to do the Work, and connect up, test, place in operation and service such products.
- .9 The term "Provide" as used herein shall mean furnish and install, without limitation, all labor, products, materials, equipment, transportation, services, etc., required to install, complete the Work, and/or to test and place in operation/service.
- .10 The term "Modifications" shall mean changes to the Contract Documents subsequent to the commencement of the work.
- .11 The term "Piping" as used herein shall mean pipe, rigid conduit, fittings, valves, hangers, and other accessories, which comprise a system.
- .12 The terms "proper", "satisfactory", "workmanlike" and words of similarly implied interpretation, judgment, or opinion, shall be understood to mean "in the opinion of the Architect".
- .13 As used herein, the terms "General Contractor", "GC" and "General Construction Contractor" have the same meaning.
- .14 As used herein, the terms "Mechanical Contractor" and "MC" shall mean the same thing.
- .15 As used herein, the terms "Plumbing Contractor" and "PC" shall mean the same thing.
- .16 As used herein, the terms "Electrical Contractor" and "EC" shall mean the same thing.
- .17 As used herein, the terms "Site Contractor" and "SC" shall mean the same thing.
- .18 As used herein, the terms "Roof Contractor" and "RC" shall mean the same thing.
- .19 As used herein, the terms "Asbestos Abatement Contractor" and "AAC" shall mean the same thing.
- .20 The term "project site" shall mean the space available to contractors at location of the project either exclusively or to be shared with other contractors for performance of Work.
- .21 The term "minimum requirements" shall mean indicated requirements are for a specific minimum acceptable level of quality/quantity, as recognized in the industry. Actual Work shall comply (within specified tolerances) or may exceed minimums within reasonable limits. Refer uncertainties to Architect before proceeding.
- .22 The term "basis of design" shall mean the material, product or manufacturer shown in the Contract Documents was selected to establish the minimum quality, performance and/or operation of the material or product.
- .23 The term "labeled" refers to classification by an approved Standards Agency.
- .24 As used herein, the term "Architect" shall also mean "Engineer" so duly licensed to "provide consulting services under a New York State License" and under Contract to provide professional services to the Owner."

- .25 The term "Warranty" shall mean a formal promise (guarantee) in writing that the contractor shall repair or replace a faulty product, material, or installation within the prescribed warranty period after Substantial Completion.
- .26 The term "General Conditions" shall mean the General Conditions of the Construction Contract, Construction Manager as Advisor Edition (AIA Document AIA A232-2019 Edition).

## **§ 1.2 Correlation and Intent of the Contract Documents**

**§ 1.2.1** The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the intended results.

**§ 1.2.1.1** The invalidity of any provision of the Contract Documents shall not invalidate the Contract or its remaining provisions. If it is determined that any provision of the Contract Documents violates any law, or is otherwise invalid or unenforceable, then that provision shall be revised to the extent necessary to make that provision legal and enforceable. In such case the Contract Documents shall be construed, to the fullest extent permitted by law, to give effect to the parties' intentions and purposes in executing the Contract.

**§ 1.2.2** Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

**§ 1.2.3** Unless otherwise stated in the Contract Documents, words that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

**§ 1.2.4** In the event of conflict or discrepancies among the Contract Documents, interpretations will be based on the following priorities:

- .1 Contract (Agreement).
- .2 Modifications.
- .3 Addenda, with those of later date having precedence over those of earlier date.
- .4 Instructions to Bidders.
- .5 General Conditions of the Contract for Construction, Construction Manager as Advisor Edition.
- .6 Division 01 of the specifications.
- .7 Divisions 02 thru 49 of the specifications and drawings.
- .8 Other documents specifically enumerated in the Contract as part of the Contract Documents.

In the case of conflict or discrepancies between drawings and Divisions 02 thru 49 of the specifications or within or among the Contract Documents and not clarified by addendum, the Architect will determine which takes precedence.

**§ 1.2.5** Scaling Drawings for dimensions, if done, is done at the Contractor's own risk. All dimensions shown on the Drawings are subject to verification of actual dimensions by the Contractor. It is the responsibility of the Contractor to verify all dimensions in the field to insure proper and accurate fit of materials and items to be installed. Before ordering any materials or doing any Work, the Contractor and each Subcontractor shall verify all existing conditions and measurements. No extra charge or compensation will be allowed on account of differences between actual dimensions and the dimensions indicated on the Drawings. Any differences which may be found shall be submitted to the Construction Manager and Architect for resolution before proceeding with the Work."

**§ 1.2.6** Where items are specified by the use of a reference standard not bound in the specifications, the date of the reference standard shall be the latest edition as outlined in the Building Codes of New York State and/or except as specifically indicated otherwise.

## **§ 1.3 Capitalization**

Terms capitalized in these General Conditions include those that are (1) specifically defined, (2) the titles of numbered articles, or (3) the titles of other documents published by the American Institute of Architects.

## § 1.4 Interpretation

In the interest of brevity the Contract Documents frequently omit modifying words such as "all" and "any" and articles such as "the" and "an," but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

**§1.4.1** In the event of conflicts or discrepancies among the Contract Documents, interpretations will be as outlined under § 1.2.4.

**§ 1.4.2** In the event of inconsistencies within or between parts of the Contract Documents, or between the Contract Documents and applicable standards, codes and ordinances, the Contractor shall: (1) provide the better quality or greater quantity of Work, (2) comply with the more stringent requirement, or (3) either or both in accordance with the Architect's interpretation. The terms and conditions of this § 1.4.2, however, shall not relieve the Contractor of any of the obligations set forth in § 3.2 and § 3.7.

**§1.4.2.1** On the Drawings, given dimensions shall take precedence over scaled measurements and large-scale drawings over small-scale drawings. Scaling Drawings for dimensions, if done, is done at the Contractor's own risk.

**§1.4.2.2** Before ordering any materials or doing any Work, the Contractor and each Subcontractor shall verify measurements at the project site and shall be responsible for the correctness of such measurements. No extra charge or compensation will be allowed on account of differences between actual dimensions and the dimensions indicated on the Drawings. Any difference, which may be found, shall be submitted to the Architect for resolution before proceeding with the Work.

**§1.4.2.3** If a minor change in the Work is found necessary due to actual field conditions, the Contractor shall submit detailed drawings of such departure for review by the Architect before initiating the change.

**§ 1.4.3** The terms "knowledge", "recognize" and "discover", their respective derivatives and similar terms in the Contract Documents, as used in reference to the Contractor, shall be interpreted to mean that which the Contractor knows (or should know), recognizes (or should recognize) and discovers (or should discover) in exercising the care, skill and diligence required by the Contract Documents. The expression "reasonably inferable" and similar terms in the Contract Documents shall be interpreted to mean reasonably inferable by a Contractor familiar with the Project and exercising the care, skill and diligence required of the Contractor by the Contract Documents.

**§ 1.4.4** The phrase "persistently fails" and other similar expressions, as used in reference to the Contractor, shall be interpreted to mean any combination of acts or omissions, which causes the Owner or the Architect to reasonably conclude that the Contractor will not complete the Work within the Contract Time, for the Contract Sum or in substantial compliance with the requirements of the Contract Documents.

**§ 1.4.5** In the event of inconsistencies within or between parts of the Contract Documents, or between the Contract Documents and applicable standards, codes and ordinances, the Architect shall be the sole and final interpreter and will issue a written decision to the Owner and the Contractor within a reasonable time of written notification. The Architect's decision shall be conclusive and final.

## § 1.5 Ownership and Use of Drawings, Specifications, and Other Instruments of Service

**§ 1.5.1** The Architect and the Architect's consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and retain all common law, statutory, and other reserved rights in their Instruments of Service, including copyrights. The Contractor, Subcontractors, sub-subcontractors, and suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with the Project is not to be construed as publication in derogation of the Architect's or Architect's consultants' reserved rights.

**§ 1.5.2** The Contractor, Subcontractors, Sub-subcontractors, and suppliers are authorized to use and reproduce the Instruments of Service provided to them, subject to any protocols established pursuant to Sections 1.7 and 1.8, solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and suppliers may not use the Instruments of Service on other projects or for additions to the Project outside the scope of the Work without the specific written consent of the Owner, Architect, and the Architect's consultants.



## **§ 1.6 Notice**

**§ 1.6.1** Except as otherwise provided in Section 1.6.2, where the Contract Documents require one party to notify or give notice to the other party, such notice shall be provided in writing to the designated representative of the party to whom the notice is addressed and shall be deemed to have been duly served if delivered in person, by mail, by courier, or by electronic transmission if a method for electronic transmission is set forth in the Agreement.

**§ 1.6.2** Notice of Claims as provided in Section 15.1.3 shall be provided in writing and shall be deemed to have been duly served only if delivered to the designated representative of the party to whom the notice is addressed by certified or registered mail, or by courier providing proof of delivery.

## **§ 1.7 Digital Data Use and Transmission**

The parties shall agree upon protocols governing the transmission and use of Instruments of Service or any other information or documentation in digital form. The parties will use AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, to establish the protocols for the development, use, transmission, and exchange of digital data.

## **§ 1.8 Building Information Models Use and Reliance**

Any use of, or reliance on, all or a portion of a building information model without agreement to protocols governing the use of, and reliance on, the information contained in the model and without having those protocols set forth in AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, and the requisite AIA Document G202™–2013, Project Building Information Modeling Protocol Form, shall be at the using or relying party's sole risk and without liability to the other party and its contractors or consultants, the authors of, or contributors to, the building information model, and each of their agents and employees.

## **ARTICLE 2 OWNER**

### **§ 2.1 General**

**§ 2.1.1** The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Owner shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization. Except as otherwise provided in Section 4.2.1, the Construction Manager and the Architect do not have such authority. The term "Owner" means the Owner or the Owner's authorized representative.

**§ 2.1.2** The Owner shall furnish to the Contractor, within fifteen days after receipt of a written request, information necessary and relevant for the Contractor to evaluate, give notice of, or enforce mechanic's lien rights.

### **§ 2.2 Evidence of the Owner's Financial Arrangements**

**§ 2.2.1** Prior to commencement of the Work, and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract. The Contractor shall have no obligation to commence the Work until the Owner provides such evidence. If commencement of the Work is delayed under this Section 2.2.1, the Contract Time shall be extended appropriately.

*(Paragraph deleted)*

**§ 2.2.3** Where the Owner has designated information furnished under this Section 2.2 as "confidential," the Contractor shall keep the information confidential and shall not disclose it to any other person. However, the Contractor may disclose "confidential" information, after seven (7) days' notice to the Owner, where disclosure is required by law, including a subpoena or other form of compulsory legal process issued by a court or governmental entity, or by court or arbitrator(s) order. The Contractor may also disclose "confidential" information to its employees, consultants, sureties, Subcontractors and their employees, Sub-subcontractors, and others who need to know the content of such information solely and exclusively for the Project and who agree to maintain the confidentiality of such information.

*(Paragraph deleted)*

### **§ 2.3 Information and Services Required of the Owner**

**§ 2.3.1** The Owner shall make available for inspection, upon request, that field survey or testing information of existing conditions, which is known to be available, and which is held by the Owner at their offices. Such records are not Contract Documents and the Owner makes no representation as to their accuracy or completeness.

§ 2.3.2 The Owner shall retain an architect lawfully licensed to practice architecture, or an entity lawfully practicing architecture, in the jurisdiction where the Project is located. That person or entity is identified as the Architect in the Agreement and is referred to throughout the Contract Documents as if singular in number.

§ 2.3.3 The Owner shall retain a construction manager adviser lawfully practicing construction management in the jurisdiction where the Project is located. That person or entity is identified as the Construction Manager in the Agreement and is referred to throughout the Contract Documents as if singular in number.

§ 2.3.4 If the employment of the Construction Manager or Architect terminates, the Owner shall employ a successor construction manager or architect to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Construction Manager or Architect, respectively.

§ 2.3.5 The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. The Contractor shall be entitled to rely on the reasonable accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

§ 2.3.6 The Owner may furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner may also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such information or services.

§ 2.3.7 Unless otherwise provided in the Contract Documents, the Owner shall furnish to each Prime Contractor the following:

- .1 Copies for Construction: The Prime Contractors will each be furnished without charge up to two (2) sets of Contract Drawings, Project Manuals and Bid Addendums for use during construction for their own use and the use of their Subcontractors.
- .2 Owner shall furnish additional sets upon a Contractor's written request. Such additional sets will be provided at the cost of printing, postage and handling. Partial sets will NOT be provided.
- .3 Subcontractors and other entities desiring copies of Drawings and other contract Documents shall obtain them from the respective Prime Contractor.

§ 2.3.8 The Owner shall forward all communications to the Contractor through the Construction Manager. Other communication shall be made as set forth in Section 4.2.6.

§ 2.3.9 The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, the Contractors' means, methods, techniques, sequences, or procedures of construction or the safety precautions and programs incident thereto, or for any failure of the Contractor to comply with laws or regulations applicable to the furnishing or performance of the Work. Owner will not be responsible for Contractor's failure to perform or furnish the Work in accordance with the Contract Documents.

## § 2.4 Owner's Right to Stop the Work

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or repeatedly fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Section 6.1.3.

## § 2.5 Owner's Right to Carry Out the Work

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such default or neglect. Such action by the Owner and amounts charged to the Contractor are both subject to review by the Construction Manager and prior approval of the Architect, and the Construction Manager or Architect may, pursuant to Section 9.5.1, withhold or nullify a Certificate for Payment in whole or in part, to the extent reasonably necessary to reimburse the Owner for the reasonable cost of correcting such deficiencies, including

Owner's expenses and compensation for the Construction Manager's and Architect's and their respective consultants' additional services made necessary by such default, neglect, or failure. If current and future payments are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner. If the Contractor disagrees with the actions of the Owner or the Architect, or the amounts claimed as costs to the Owner, the Contractor may file a Claim pursuant to Article 15.

**§ 2.5.1** In the event Contractor fails, refuses or neglects to perform closeout obligations, including without limitation performance of incomplete items as attached to the Certificate of Substantial Completion, within forty-five (45) days following the date of Substantial Completion or time frame mutually agreed upon between Owner and Prime Contractor, the Owner may, without further notice (except to inform the Contractor its attempt to cure is inadequate) and without prejudice to other remedies the Owner may have, correct such deficiencies. In such case, an appropriate Change Order shall be issued deducting from Payments then or thereafter due to Contractor the cost of correcting such deficiencies. Contractor shall be liable to the Owner for any additional costs, including without limitation, those charged by Architect, Attorneys, or others attributable to such failure, refusal, or neglect.

### **§ 2.6 Owner's Rights for Use of Premises**

**§ 2.6.1** Whether Work of various Contractors is or is not partially or fully completed, the premises (site and buildings) are the property of the Owner who shall have certain rights and privileges in connection with use of same.

**§ 2.6.2** In such event, Contractor whose unfinished Work is performed subsequently shall be responsible for the prevention of any damage to such Owner's installation. Such use or occupancy by the Owner shall in no instance constitute acceptance of any of the Work.

## **ARTICLE 3 CONTRACTOR**

### **§ 3.1 General**

**§ 3.1.1** The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Contractor shall be lawfully licensed, if required in the jurisdiction where the Project is located. The Contractor shall designate in writing a representative who shall have express authority to bind the Contractor with respect to all matters under this Contract. The term "Contractor" means the Contractor or the Contractor's authorized representative.

**§ 3.1.1.1** Where the words "Contractor", "Prime Contractor", or any reference to "each Contractor" occurs in the Contract Documents, they shall mean the person, firms or organization having a Contract for the Work as set forth in the Agreement.

**§ 3.1.1.2** The Contractor represents to the Owner that it possesses the skill, experience, and resources to perform the Work competently and diligently in an orderly and safe fashion and in accordance with the anticipated milestone and/or completion date(s) as applicable.

**§ 3.1.2** The Contractor shall perform the Work in accordance with the Contract Documents.

**§ 3.1.3** The Contractor shall not be relieved of its obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Construction Manager or Architect in their administration of the Contract, or by tests, inspections or approvals required or performed by persons or entities other than the Contractor.

### **§ 3.2 Review of Contract Documents and Field Conditions by Contractor**

**§ 3.2.1** Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed, and correlated personal observations with requirements of the Contract Documents.

**§ 3.2.2** Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.3.5, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Construction Manager and Architect any errors, inconsistencies or omissions discovered by or

made known to the Contractor as a request for information submitted to the Construction Manager in such form as the Construction Manager and Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.

§ 3.2.2.1 The Contractor shall promptly notify the Construction Manager and Architect, in writing, of any inconsistencies or errors to provide the Architect ample time for observation, investigation, detail drawings, etc.

§ 3.2.2.2 All Contractors submitting bid proposals shall be presumed to have examined the site to consider fully all conditions, which may have a bearing on the Work, and to have accounted for these conditions in their bid proposals.

§ 3.2.2.3 When required, off-site storage is the responsibility of the Contractor.

§ 3.2.2.4 The exactness of grades, elevations, dimensions, or locations indicated on the Drawings of Work installed by others is not guaranteed by the Construction Manager, Architect, or the Owner.

§ 3.2.2.5 Except as to any reported errors, inconsistencies and to concealed or unknown conditions referred to in § 3.7.4, by executing the Agreement, the Contractor represents the following:

- .1 The Contract Documents are sufficiently complete and detailed for the Contractor to (1) perform the Work required to produce the results intended by the Contract Documents and (2) comply with all the requirements of the Contract Documents.
- .2 The Work required by the Contract Documents, including, without limitations, all construction details, construction means, methods, procedure and techniques necessary to perform the Work, use of materials, selection of equipment and requirements of product manufacturers are consistent with: (1) good and sound practices within the construction industry; (2) generally prevailing and accepted industry standards applicable to Work; (3) requirements of any warranties applicable to the Work; and (4) all laws, ordinances, regulations, rules and orders which bear upon the Contractor's performance of the Work.

§ 3.2.2.6 The Contractor shall satisfy itself as to the accuracy of all grades, elevations, dimensions, and locations indicated on the Drawings. Where the Work of this Contract connects or interfaces with existing or other Work, Contractor shall verify at the site all conditions of such existing or other Work. Any errors due to the Contractor's failure to verify such information shall be promptly remedied by the Contractor at no additional cost to the Owner.

§ 3.2.2.7 Before ordering any materials or doing any Work, the Contractor and each Subcontractor shall verify all existing conditions and measurements. Any differences, which may be found, between actual measurements and dimensions indicated on the Drawings shall be submitted to the Architect for resolution before proceeding with the Work. No extra compensation will be allowed for such discrepancies.

§ 3.2.3 If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall submit Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner, subject to section 15.1.7, as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities.

*(Paragraph deleted)*

### § 3.3 Supervision and Construction Procedures

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences, and procedures, and for coordinating all portions of the Work under the Contract. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences, or procedures, the Contractor shall evaluate the jobsite safety thereof and shall be solely responsible for the jobsite safety of such means, methods, techniques, sequences, or procedures. If the Contractor determines that such means, methods, techniques, sequences



or procedures may not be safe, the Contractor shall give timely notice to the Owner, the Construction Manager, and the Architect, and shall propose alternative means, methods, techniques, sequences, or procedures. The Architect shall evaluate the proposed alternative solely for conformance with the design intent for the completed construction. The Construction Manager shall review the proposed alternative for sequencing, constructability, and coordination impacts on the other Contractors. Unless the Architect or the Construction Manager objects to the Contractor's proposed alternative, the Contractor shall perform the Work using its alternative means, methods, techniques, sequences, or procedures.

**§ 3.3.1.1 Laying out the work:**

- .1** Each Contractor shall carefully lay out its Work in accordance with the Contract Documents and shall coordinate its Work with existing and new Work and it shall verify all lines and levels indicated in the Contract Documents that affect its Work.
- .2** Adjustments required to suit field conditions shall be made only after the Construction Manager's and Architect's review. Each Contractor shall be responsible for the accuracy of layout and shall correct at its own expense any Work that his forces have laid out incorrectly.
- .3** Where equipment lines or piping and/or conduit are shown diagrammatically, the Contractor shall be responsible for the coordination and orderly arrangement of the various lines of piping and conduit included in the Work of its Contract. Contractor shall coordinate its work and prevent all interferences between equipment, lines of piping, architectural features, and avoid any unsightly arrangements in the exposed areas.

**§ 3.3.2** The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors.

**§ 3.3.3** The Contractor shall be responsible for inspection of portions of the Project already performed to determine that such portions are in proper condition to receive subsequent Work.

**§ 3.3.4 Shutdowns:** Such Work as connections to existing sewers, plumbing, heating, and electric systems, shall be done at a time agreeable to the Owner and Construction Manager and shall be determined and agreed to well in advance of the actual doing of such Work so as to interfere as little as possible with the operation and use of existing facilities. Shutdowns must be coordinated through the Construction Manager 48 hours prior to shut down. The continued uninterrupted operation of all facilities is essential. If any existing facilities must be interrupted, the Contractor for the Work shall provide all necessary temporary facilities and connections necessary for maintaining existing facilities. No mechanical, heating, plumbing, sprinkler, or electric services shall be interrupted at any time, except as approved in advance by the Owner. All communication systems must be maintained without interruption. As much related work as possible shall be performed prior to shut-downs, so as to minimize the period of shut-down. All material and manpower to do the work involved shall be at the job prior to interruption of services.

**§ 3.3.5** If the Work involves a School facility, the Contractor represents that it is familiar with and shall adhere to the "Uniform Standards for School Construction and Maintenance Projects" set forth at 8 New York Code of Rules and Regulations §155.5 (8 NYCRR 155).

**§ 3.4 Labor and Materials**

**§ 3.4.1** Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

**§ 3.4.2** Except in the case of minor changes in the Work approved by the Architect in accordance with Section 3.12.8 or ordered by the Architect in accordance with Section 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect, in consultation with the Construction Manager, and in accordance with a Change Order or Construction Change Directive.

**§ 3.4.3** The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them.

**§ 3.4.4 Equivalent Products:** Except as otherwise specified, whenever a material, article or piece of equipment is identified on the Drawings or in the Specifications by reference to manufacturer's or vendors' names, catalog numbers, or the like, it is so identified for the purpose of establishing a standard, and any material, article, or piece of equipment of other manufacturers or vendors which will perform adequately the duties imposed by the general design may be considered equally acceptable provided the material, article, or piece of equipment so proposed is, in the opinion of the Architect, of equal substance, appearance, size, function and performance. Such proposed product shall not be purchased or installed until approved by the Architect.

- .1 The Owner and the Architect will consider a formal request for the substitution of a product in place of the one specified only under the conditions set forth in the General Requirements (Contract, & General Conditions) on "EQUIVALENCY", of the Specifications) for each proposed substitution.
- .2 The Architect will be allowed ten (10) business days to evaluate each proposed substitution. The Architect will be the sole judge of equivalence, and no substitution shall be ordered, installed or utilized without the Architect's review process having been completed and the product accepted by written notification.
- .3 Owner may require Contractor to furnish at the Contractor's expense a special performance warranty or other surety with respect to any substitution.
- .4 The Architect will record time required by the Architect and the Architect's consultants in evaluating substitutions proposed by the Contractor and in making changes in the Contract Documents occasioned thereby. Whether or not the Architect accepts a proposed substitution, Contractor shall reimburse the Owner for the charges of the Architect and the Architect's Consultants for evaluating each proposed substitution. In the event Owner is not obligated to pay Architect for such costs incurred by the Architect in evaluating proposed Substitutions as Additional Services. Contractor shall pay Architect's additional cost for such evaluation directly to Architect as a third-party beneficiary under this Contract.
- .5 Full explanation of the proposed substitution and submittal of all supporting data including technical information, catalog cuts, warranties, test results, installation instructions, operating procedures, and other like information necessary for a complete evaluation of the substitution.
- .6 Reasons the substitution is advantageous and/or necessary, including the benefits to the Owner and Work in the event substitution is acceptable.
- .7 The adjustment, if any, in the Contract Sum in the event the substitution is acceptable.
- .8 The adjustment, if any, in the time of completion of the contract and the construction schedule in the event the submission is acceptable.
- .9 Contractor shall demonstrate that the proposed substitution conforms and meets all the requirements of the pertinent Specifications and the Drawings; and the Contractor accepts the warranty and correction obligations in connection with the proposed substitution as if originally specified by the Architect. Proposals for substitutions shall be submitted to the Architect. Architect will review and make an informed decisions on proposed substitution within ten (10) business days.
- .10 Substitutions and alternates may be rejected with or without written explanation.
- .11 No substitute material shall be purchased or installed by the Contractor without the Architect's written approval. Material that, in the Architect's opinion, is inferior to that specified or is unsuited for the intended use will be rejected. The Architect's decision regarding acceptance of equals shall be final. The risk of whether a proposed substitution will be accepted is borne by the Contractor. No requests for substitution will be considered unless the Architect determines that such substitution is in the best interest of the Owner under the conditions set forth in the Contract Documents.
- .12 By making requests for substitutions the Contractor:
  - a. Represents that the Contractor has personally investigated the proposed substitute product and determined that it is equal or superior in all respects to that specified;
  - b. Represents that the Contractor will provide the same warranty for the substitution that the Contractor would provide for the specified product;
  - c. Certifies that the cost data presented is complete and includes all related costs under this Contract except the Architect's redesign costs, and waives all claims for additional costs related to the substitution which subsequently become apparent;
  - d. Will coordinate the installation of the accepted substitution, making such changes as may be required for the Work to be complete in all respects; and,
  - e. Will reimburse Owner for additional costs from claims by other Prime Contractors resulting from incorporation of the requested substitution.

- .13 If the Project involves Public Work subject to N.Y. General Municipal Law §103, whenever a material, article, device, piece of equipment or type of construction is identified on the Drawings or in the Specifications by reference to manufacturers' or vendors' names, trade names, catalog numbers, or similar specific information, it is so identified for the purpose of establishing a standard of quality, and such identification shall not be construed as limiting competition. In such event, any material, article, device, piece of equipment or type of construction of other manufacturers or vendors that will perform the duties imposed by the general design will be considered equally acceptable provided the material, article, device, piece of equipment or type of construction so proposed is completely described in submittals as set forth herein and is, in the opinion of the Architect, of equal substance, appearance, and function.
- .14 The burden of proof to show equivalency or equal quality shall be that of the Contractor. Submissions for this purpose shall follow the format for Submittals. Submissions shall be complete, informative & address all data required in the base bid specification in such a manner that the Architect can, without unusual effort or exhaustive research, review and make a judgment as to its equivalency. Excessive or unusual effort required of the Architect by the Contractor to review, research and qualify items proposed as equivalents shall be charged to the Contractor at the current billing rate of the Architect.
- .15 Proposed equivalents or substitutions will not be considered unless requested as set forth herein. Mere express or implied indication of equivalents or substitutions will not be considered without full compliance these requirements.
- .16 The Contractor shall indicate the kind, type, brand or manufacturer that is to be substituted for the specified item. The Contractor will submit information describing in specific detail the differences in quality, performance, cost and time between the substitution and the item that was specified. This information shall include notification of possible changes to the Work or to work of other contracts."

§ 3.4.5 A shortage of labor in the industry shall not be accepted as an excuse for not properly manning the project at each site.

§ 3.4.6 Contractor shall be responsible for the care and protection of all equipment and materials for his work of this project, including equipment and material furnished by the Owner.

§ 3.4.7 Contractor warrants that it has good title to all materials used in the Work of this Contract. No materials or supplies shall be furnished by Contractor or any of its Subcontractors that are subject to any chattel mortgage, conditional sale or other agreement by which an interest is retained by the seller.

### § 3.5 Warranty

§ 3.5.1 The Contractor warrants to the Owner, Construction Manager, and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Construction Manager or Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

§ 3.5.1.1 Neither final payment, nor provision in Contract Documents, nor partial or entire occupancy of premises by Owner shall constitute an acceptance of Work not done in accordance with Contract Documents or relieve the Contractor of liability in respect to any express warranties or responsibility for faulty materials or workmanship.

§ 3.5.1.2 In emergencies occurring during the warantee period, the Owner may correct any defect immediately and charge the cost to the Contractor. The Owner shall at once notify the Contactor, who may take over the Work and make any corrections remaining after his forces arrive at the Work. Any repair work not started within seven (7) days following notice to the Contractor of any defect shall be considered an emergency.

§ 3.5.2 All material, equipment, or other special warranties required by the Contract Documents shall be issued in the name of the Owner, or shall be transferable to the Owner, and shall commence in accordance with Section 9.8.4.



### § 3.6 Taxes

Except as otherwise specified, the Contractor shall pay sales, consumer, use and similar taxes for the Work or portions thereof provided by the Contractor that are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

**§ 3.6.1** The OWNER is exempt from the payment of Sales and Compensating Use Taxes of the State of New York and of cities and counties, on all materials, equipment and supplies to be sold to the OWNER pursuant to this Contract. The exemption does not, however, apply to tools, machinery, equipment, or other property leased by or to the contractor or to a Sub-Contractor and the Contractor and its Sub-Contractor. Also exempt from such taxes are purchases by the CONTRACTOR and its subcontractors of materials, equipment and supplies to be sold to the OWNER pursuant to its Contract, including tangible personal property to be incorporated in any structure, building or other real property forming part of the Project." The exemption does not, however, apply to tools, machinery, equipment, or other property leased by or to the CONTRACTOR or a Sub-Contractor and the CONTRACTOR and its Sub-Contractor shall be responsible for any pay, any and all applicable taxes, including Sales and Compensating Use Taxes, on such leased tools, machinery, equipment or other property, and for materials not incorporated into the project.

### § 3.7 Permits, Fees, Notices, and Compliance with Laws

**§ 3.7.1** Each Contractor shall secure and pay for all required permits, governmental fees, licenses, certificates of inspection, of occupancy, of Underwriters, and of all other required certificates for the Work, necessary for the proper execution and completion of the Work, which are customarily secured after execution of the Contract and which are legally required at the time the bids are received. Each Contractor shall be responsible for complying with any and all requirements specified with each Permit.

**§ 3.7.2** The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work.

**§ 3.7.3** If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

**§ 3.7.4 Concealed or Unknown Conditions.** If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner, Construction Manager, and the Architect before conditions are disturbed or affected work is performed and in no event later than 7 days after first observance of the conditions. The Architect and Construction Manager will promptly investigate such conditions and, if the Architect, in consultation with the Construction Manager, determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend that an equitable adjustment be made in the Contract Sum or Contract Time, or both. If the Architect, in consultation with the Construction Manager, determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner, Construction Manager, and Contractor, stating the reasons. If the Owner or Contractor disputes the Architect's determination or recommendation, either party may submit a Claim as provided in Article 15.

**§ 3.7.5** If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner, Construction Manager, and Architect. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.

### § 3.8 Allowances

§ 3.8.1 The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities to whom the Contractor has reasonable objection.

§ 3.8.2 Unless otherwise provided in the Contract Documents:

- .1 allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
- .2 Contractor's costs for overhead, profit, and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances; and
- .3 whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.
- .4 Value of allowances shall also include:
  - All costs for plant, equipment and labor for unloading, handling and storage at the site;
  - Any costs for protection;
  - All costs for associated demolition work;
  - Costs for removal and off-site disposal of demolished materials;
  - Cost for labor, materials and equipment for installation and finishing, except where labor is specified not to be a part of the allowance.
  - Other expenses required to complete the installation.

§ 3.8.3 Materials and equipment under an allowance shall be selected by the Owner with reasonable promptness.

### § 3.9 Superintendent

§ 3.9.1 The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect, through the Construction Manager, of the name and qualifications of a proposed superintendent. Within 14 days of receipt of the information, the Construction Manager may notify the Contractor, stating whether the Owner, the Construction Manager, or the Architect (1) has reasonable objection to the proposed superintendent or (2) require additional time for review. Failure of the Construction Manager to provide notice within the 14-day period shall constitute notice of no reasonable objection.

§ 3.9.3 The Contractor shall not employ a proposed superintendent to whom the Owner, Construction Manager, or Architect has made reasonable and timely objection. The Contractor shall not change the superintendent without the Owner's consent, which shall not unreasonably be withheld or delayed.

§ 3.9.4 The Contractor shall not reduce or terminate supervision of the Work.

§ 3.9.5 If, for any reason, the Contractor takes an action resulting in any of the changes noted in § 3.9, which negatively affects the projects progress or quality, or resulting in additional work by the Owner or their agents, the Owner has the right to charge the Contractor all costs associated with these efforts including the costs of legal, Construction Management Services, and Architectural services. The Owner shall notify the Contractor in writing of their intent to back charge as a result of lack of supervision.

### § 3.10 Contractor's Construction and Submittal Schedules

§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall submit for the Owner's and Architect's information, and the Construction Manager's use in developing the Project schedule, a Contractor's construction schedule for the Work. The schedule shall contain detail appropriate for the Project, including (1) the date of commencement of the Work, interim schedule milestone dates, and the date of Substantial Completion; (2) an apportionment of the Work by construction activity; and (3) the time required for completion of each portion of the Work. The schedule shall provide for the orderly progression of the Work to completion and shall not exceed time limits current under the Contract Documents. The schedule shall be revised at appropriate intervals as required by the conditions of the Work and Project. The Contractor shall cooperate with the Construction Manager in scheduling and

performing the Contractor's Work to avoid conflict with, and as to cause no delay in, the work or activities of other Contractors, or the construction or operations of the Owner's own forces or Separate Contractors.

**§ 3.10.2** The Contractor, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, shall submit a submittal schedule for the Construction Manager's and Architect's approval. The Architect and Construction Manager's approval shall not be unreasonably delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Construction Manager and Architect reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, or fails to provide submittals in accordance with the approved submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

**§ 3.10.3** The Contractor shall participate with other Contractors, the Construction Manager, and the Owner in reviewing and coordinating all schedules for incorporation into the Project schedule that is prepared by the Construction Manager. The Contractor shall make revisions to the construction schedule and submittal schedule as deemed necessary by the Construction Manager to conform to the Project schedule.

**§ 3.10.4** The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner, Construction Manager, and Architect, and incorporated into the approved Project schedule.

**§ 3.11 Documents and Samples at the Site**

The Contractor shall make available, at the Project site, the Contract Documents, including Change Orders, Construction Change Directives, and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and the approved Shop Drawings, Product Data, Samples, and similar required submittals. These shall be in electronic form or paper copy, available to the Construction Manager, Architect, and Owner, and delivered to the Construction Manager for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

**§ 3.12 Shop Drawings, Product Data, and Samples**

**§ 3.12.1** Shop Drawings are drawings, diagrams, schedules, and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier, or distributor to illustrate some portion of the Work.

**§ 3.12.2** Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams, and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

**§ 3.12.3** Samples are physical examples that illustrate materials, equipment, or workmanship, and establish standards by which the Work will be judged.

**§ 3.12.4** Shop Drawings, Product Data, Samples, and similar submittals are not Contract Documents. Their purpose is to demonstrate how the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review by the Architect and Construction Manager is subject to the limitations of Sections 4.2.10 through 4.2.12.

Informational submittals upon which the Construction Manager and Architect are not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Construction Manager or Architect without action.

**§ 3.12.5** The Contractor shall review for compliance with the Contract Documents, approve, and submit to the Construction Manager, Shop Drawings, Product Data, Samples, and similar submittals required by the Contract Documents, in accordance with the Project submittal schedule approved by the Construction Manager and Architect or, in the absence of an approved Project submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of other Contractors, Separate Contractors, or the Owner's own forces. The Contractor shall cooperate with the Construction Manager in the coordination of the Contractor's Shop Drawings, Product Data, Samples, and similar submittals with related documents submitted by other Contractors.

**§ 3.12.5.1** No extension of time will be granted to the Contractor because of failure to have shop drawings, product data, and samples submitted in ample time to allow for review by the Construction Manager, Architect or their Consultants.



§ 3.12.6 By submitting Shop Drawings, Product Data, Samples, and similar submittals, the Contractor represents to the Owner, Construction Manager, and Architect, that the Contractor has (1) reviewed and approved them, (2) determined and verified materials, field measurements and field construction criteria related thereto, or will do so, and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

§ 3.12.7 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples, or similar submittals, until the respective submittal has been reviewed and approved by the Architect.

§ 3.12.8 The Work shall be in accordance with approved submittals except that the Contractor shall not be relieved of responsibility for deviations from the requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples, or similar submittals, unless the Contractor has specifically notified the Construction Manager and Architect of such deviation at the time of submittal and (1) the Architect has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples, or similar submittals, by the Architect's approval thereof.

§ 3.12.9 The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples, or similar submittals, to revisions other than those requested by the Construction Manager and Architect on previous submittals. In the absence of such notice, the Architect's approval of a resubmission shall not apply to such revisions.

§ 3.12.10 The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences, and procedures. The Contractor shall not be required to provide professional services in violation of applicable law.

§ 3.12.10.1 If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall be entitled to rely upon the adequacy and accuracy of the performance and design criteria provided in the Contract Documents. The Contractor shall cause such services or certifications to be provided by an appropriately licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings, and other submittals prepared by such professional. Shop Drawings, and other submittals related to the Work, designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner, the Architect, and the Construction Manager shall be entitled to rely upon the adequacy and accuracy of the services, certifications, and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor the performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review and approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Construction Manager shall review submittals for sequencing, constructability, and coordination impacts on other Contractors.

§ 3.12.10.2 If the Contract Documents require the Contractor's design professional to certify that the Work has been performed in accordance with the design criteria, the Contractor shall furnish such certifications to the Construction Manager and Architect at the time and in the form specified by the Architect.

§ 3.12.10.2.1 If it is the position of the Contractor, or his licensed design professional, that the Owner and Architect have not provided all performance and design criteria, the Contractor shall request additional criteria in writing before proceeding with the professional services described in § 3.12.10. Proceeding with the professional services shall be evidence that the Owner and Architect have provided all necessary performance and design criteria.

### § 3.13 Use of Site

§ 3.13.1 The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, lawful orders of public authorities, and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

#### § 3.13.1.1 Use of site and building:

- .1 Each Prime Contractor shall cooperate with the Owner in making available for the Owner's use, areas of the completed or partially completed building(s) or site as provided for in Article 9, Paragraph 9.9. The Owner shall have the right to take possession of and to use any completed or partially completed portions of the building or site even though the time of completing the entire Work or such portion of the Work may not have expired. Such use shall not constitute acceptance thereof. Such occupancy shall in no way abrogate any specified warranties or guaranties for materials, workmanship or operation of equipment pertaining to the occupied portions.
- .2 Each Prime Contractor shall cooperate with the Owner in making available for the Owner's use such building services as heating, ventilating, cooling, water, lighting and telephone for the space or spaces to be occupied, and if the equipment required to furnish such services is not entirely completed at the time the Owner desires to occupy the aforesaid space or spaces, the Contractor shall make every reasonable effort to complete such part of his Work as soon as possible to the extent that the necessary equipment can be put into operation and use.
- .3 Mutually acceptable arrangements shall be made as to the warranties or guaranties affecting all Work associated therewith.
- .4 Such occupancy or use shall not commence prior to a time mutually agreed to by the Owner and Contractor and to which the insurance company or companies providing the property insurance have consented by endorsement to the policy or policies. (See 11.3.1.5) Such occupancy shall be documented with an appropriately executed Certificate of Substantial Completion.
- .5 See Article 2, Paragraph 2.5 for special situations.

§ 3.13.2 The Contractor shall coordinate the Contractor's operations with, and secure the approval of, the Construction Manager before using any portion of the site.

### § 3.13.3 Protection of Building Occupants

§ 3.13.3.1 Owner or Tenant occupied areas of the building shall always comply with the minimum requirements necessary to maintain a Certificate of Occupancy.

§ 3.13.3.2 General safety and security standards for this project include:

- .1 All construction materials shall be stored in a safe and secure manner;
- .2 Fences shall be maintained around construction supplies or debris.
- .3 Gates in temporary fences shall always be locked unless a worker is in attendance to prevent unauthorized entry to the Contract areas.
- .4 During exterior renovation work, overhead protection shall be provided for any sidewalks or areas immediately beneath the work site or such areas shall be fenced off and provided with warning signs to prevent entry.
- .5 Workers shall wear photo-identification badges at all times for identification and security purposes.
- .6 Separation of Construction Areas: Construction areas that are under the control of a Contractor and therefore not occupied by Owner or Tenants shall be separated from occupied areas. Provisions shall be made to prevent the passage of dust and contaminants into occupied parts of the building. Periodic inspection and repairs of the contaminant barriers must be made to prevent exposure to dust or contaminants. Each Contractor working inside the buildings shall temporarily seal doorways enclosing their work area, using heavy duty plastic, duct tape, etc. Repairs of the plastic and tape must be made in the event the tape becomes loose or the plastic is cut or torn.
- .7 Type "X" Gypsum Board shall be used in exit ways or other areas that require fire rated separation.
- .8 Plastic sheeting may be used only as a vapor, fine dust, or air infiltration barrier, and shall not be used to separate occupied spaces from construction areas.
- .9 A specific stairwell and/or elevator should be assigned for construction worker use during work hours. In general, workers may not use corridors, stairs, or elevators designated for Owner or Tenants.



- .10 Large amounts of debris must be removed by using enclosed chutes or a similar sealed system. There shall be no movement of debris through halls of occupied spaces of the building. No material shall be dropped or thrown outside the walls of the building.
- .11 All parts of the building affected by renovation activity shall be cleaned at the close of each workday, including but not limited to cleaning and disinfection in connection with infectious disease exposure precautions, whether permanent or temporary, required or suggested by federal, state or local governmental authorities.
- .12 Fire and hazard prevention: Areas of buildings under construction that are to remain occupied shall maintain a Certificate of Occupancy.

**§ 3.13.3.3 Noise Abatement During Construction:**

- .1 Construction and maintenance operations shall not produce noise in excess of 60 dba in occupied spaces or shall be scheduled for times when the building is not occupied, or acoustical abatement measures shall be taken.

**§ 3.13.3.4 Control of airborne contaminants during construction:**

- .1 The Contractor shall be responsible for the control of the chemical fumes, gases, and other contaminants produced by their welding, gasoline or diesel engines, roofing, paving, painting, etc. to ensure they do not enter occupied portions of the building or air intakes.
- .2 The Contractor shall be responsible to ensure that its activities and materials which result in off-gassing of volatile organic compounds such as glues, paints, furniture, carpeting, wall covering, drapery, etc. are scheduled, cured, or ventilated in accordance with manufacturer's recommendations before a space can be occupied.
- .3 Large and small asbestos abatement projects as defined by 12NYCRR56 shall not be performed in occupied areas of the building. Any area of the building where abatement of hazardous materials is being performed must be sealed off in an air-tight fashion from the remainder of the building in accordance with NY Code Rule 56 and other applicable laws and regulations.
- .4 The requirements of Section 155 of the Regulations of the New York State Commissioner of Education apply to this Project. Reference Section 01 3529.1 Life Safety Requirements During School Construction and the Official Compilation of Codes, Rules and Regulations of the State of New York, Title 8 Education Department, Chapter II Regulations of the Commissioner, Subchapter J. Buildings and Transportation Part 155 Education Facilities.

**§ 3.13.4** Each Contractor shall be responsible for complying with Occupational Safety and Health Administration (OSHA) and U.S. Department of Health and Human Services' Center for Disease Control and Prevention (CDC) on COVID-19 Guidance for safe work practices, use of personal protective equipment (PPE), social distancing, cleaning, and sanitizing of the worksite. These protocols shall be incorporated into each Contractor's safety work plan.

**§ 3.13.5** All construction workers and suppliers are to execute a Health Declaration Form/Questionnaire each day prior to gaining access to one of the construction sites during the COVID-19 crisis.

**§ 3.14 Cutting and Patching**

**§ 3.14.1** The Contractor shall be responsible for cutting, fitting, or patching required to complete the Work or to make its parts fit together properly. All areas requiring cutting, fitting, or patching shall be restored to the condition existing prior to the cutting, fitting, or patching, unless otherwise required by the Contract Documents.

**§ 3.14.2** In order to eliminate cutting and patching as much as possible, each Prime Contractor shall coordinate the installation of sleeves and inserts with the other Prime Contractors affected and shall give proper and detailed instructions to others where Work may be affected by their Work, with adequate notice prior to the erection of new Work. Cutting and patching Work as required to install new Work or remove existing Work shall be done carefully and neatly with as little damage as possible.

**§ 3.14.3** Unless otherwise stated in Specification Section 01 7329 Cutting and Patching, each Prime Contractor shall perform all cutting and patching as required to complete their Work. Cutting is to be done neatly with minimal damage to surrounding materials and holes to be patched and/or fire safe as required to the satisfaction of the Construction Manager, Architect and Owner.

**§ 3.14.4** Any costs caused by defective or ill-timed Work shall be borne by the Contractor responsible, therefore. Any Contractor who is required to cut and patch its new Work to provide conditions for other contractors to complete their new Work and who was not given adequate prior notice of the conditions required for completion of such Work before doing its Work, shall charge the Contractor in default the documented cost of the cutting and patching Work plus 15% for overhead and profit unless otherwise specified.

**§ 3.14.5** Cutting and patching of any Work shall be made in such a manner as to not breach any provisions of any guarantee or warranty on existing Work left in place or guarantee or warranty required for his new Work. Patching of Work shall match existing adjacent surfaces and patch work shall be disguised completely to hide any trace of patching.

**§ 3.14.6** Refer to Contract (General, Supplementary and other conditions) Section 01 7329 Cutting and Patching for more information.

### **§ 3.15 Cleaning Up**

**§ 3.15.1** The Contractor shall keep the premises and surrounding area free from accumulation of waste materials and rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery, and surplus materials from and about the Project.

**§ 3.15.2** If the Contractor fails to clean up as provided in the Contract Documents, the Owner, or Construction Manager with the Owner's approval, may do so and the Owner shall be entitled to reimbursement from the Contractor.

**§ 3.15.3** Each Prime Contractor is solely responsible for clean-up to the Construction Manager's and Owner's satisfaction. Further, each Contractor shall fully cooperate with all other Contractors in the coordinated effort to meet the Owner's time and quality requirements for clean-up.

### **§ 3.16 Access to Work**

The Contractor shall provide the Owner, Construction Manager, and Architect with access to the Work in preparation and progress wherever located.

### **§ 3.17 Royalties, Patents and Copyrights**

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner, Construction Manager, and Architect harmless from loss on account thereof, but shall not be responsible for defense or loss when a particular design, process, or product of a particular manufacturer or manufacturers is required by the Contract Documents, or where the copyright violations are contained in Drawings, Specifications, or other documents prepared by the Owner, Architect, or Construction Manager. However, if an infringement of a copyright or patent is discovered by, or made known to, the Contractor, the Contractor shall be responsible for the loss unless the information is promptly furnished to the Architect through the Construction Manager.

### **§ 3.18 Indemnification**

**§ 3.18.1** To the fullest extent permitted by law, the Contractor shall defend, indemnify and hold harmless the Owner, Architect, and the Construction Manager, and each of their consultant's, officers, board members, agents, and employees, from and against any suits, claims, damages, losses, or expenses, including but not limited to attorneys' fees and litigation costs, arising out of or resulting from performance of the Work, including suits, claims, damages, losses or expenses attributable to any bodily injury, sickness, disease, or death, or injury to or destruction of any tangible property, including loss of use resulting therefrom, or any statutory violations, but only to the extent caused in whole or in part by the act, omission, fault, or statutory violation of the Contractor, a subcontractor, or any person or entity directly or indirectly employed by them, or any person or entity for whose acts they may be liable or arises out of operation of law as a consequence of any act or omission of the Contractor, any Subcontractor, anyone directly or indirectly employed by any of them, or anyone for whose acts any of the above may be liable, regardless of whether any of them has been negligent. This provision shall not be construed to require the Contractor to indemnify the Owner, Architect or Construction Manager for the negligence of the Owner, Architect or Construction Manager, respectively, to the extent such negligence, in whole or in part, proximately caused the damages resulting in the suit, claim, damage, loss or expense.

**§ 3.18.2** In claims against any person or entity indemnified under this Section 3.18 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, the indemnification obligation under Section 3.18.1 shall not be limited by a limitation on amount or type of damages, compensation, or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts, or other employee benefit acts.

**§ 3.18.3** In any and all Claims against the Owner, Construction Manager, or the Architect or their agents or employees by third parties, the indemnification obligation under § 3.18 shall apply and shall not be limited by limitation or amount of or type of damages, compensation, or benefits payable by or for the Contractor or Subcontractors.

**§ 3.18.4** Contractor shall comply with, and cooperate with, Construction Manager, Architect and Owner in complying with legal requirements. Among other things, Contractor shall be responsible for performing corrective Work within any abatement periods prescribed by governmental entities including but not limited to OSHA, appealing from decisions or orders, requesting extensions on abatement periods, and furnishing such information or evidentiary material as may be necessary or as may be requested by Construction Manager, Architect or Owner to fully protect the rights and interests of Owner, Construction Manager, and Architect with respect to possible, threatened or pending proceedings or orders.

**§ 3.19 Contractor's Responsibilities**

**§ 3.19** Contractor agrees, in addition to all other responsibilities and duties under the Contract:

**§ 3.19.1** To use all necessary means to discover and to notify the Construction Manager, Architect and Owner in writing of any defect in other Work upon which the satisfactory performance of the Work may depend, and to allow a reasonable amount of time for remedying such defects. If Contractor should proceed with the Work, Contractor shall be considered to have accepted and be responsible for such other Work unless over Contractor's written objection, Contractor shall have proceeded pursuant to written instructions from the Architect.

**§ 3.19.2** To submit to Owner, Construction Manager, and Architect promptly upon request, information with respect to the names, responsibilities and titles of the principal members of Contractor's staff.

**§ 3.19.3** To take all steps necessary to avoid labor disputes; and to be responsible for any delays and damages to Owner caused by such disputes.

**§ 3.19.4** To pay for costs of repair to other Work attributable, in whole or in part, to the fault or negligence of Contractor and Owner's charges for removal of rubbish attributed to Contractor, and any clean-up related to Contractor or the Work, as determined by Owner or Construction Manager.

**§ 3.19.5** To comply with all legal requirements; to appear at hearings, proceedings or in court in respect of such compliance or in respect of violations or claimed violations of legal requirements; to pay any fines or penalties imposed for said violations; and to pay all legal fees, fines and penalties incurred by or imposed upon Owner relating to Contractor's compliance, violations or claimed violations. Without limiting the foregoing, Contractor shall appear at hearings, proceedings and/or in court and consent to its substitution as a party defendant in respect of all summonses and claimed violations arising out of or relating to the Work.

**§ 3.19.6** Not to display on or about the Project site any sign, trademark or other advertisement without written consent of the Owner.

**§ 3.19.7** Each Contractor's Subcontractor and supplier shall be bound by all Contract Documents to the same extent and with the same effect as if the Subcontractor or supplier were the Contractor. Contractor shall cause Subcontractors and suppliers to comply with all the Contract Documents. Contractor shall be responsible for all the acts, work, material and equipment of its Subcontractors and supplier and all persons either directly or indirectly employed by any of them.

**§ 3.19.8** To:

- .1** Furnish a competent and adequate staff and use its best skill and attention for the proper administration, coordination, supervision, and superintendence of the Work;

- .2 Organize the procurement of all materials and equipment so that they will be available at the time needed for the Work;
- .3 Keep an adequate force of skilled workers on the job to complete the Work in strict accordance with all requirements of the Contract Documents;
- .4 Maintain throughout the duration of the Work a competent superintendent and any necessary assistants, all of whom shall be acceptable to Owner and shall not be changed without the consent of the Owner;
- .5 Enforce discipline and order and not to employ at the Project any unfit person or anyone not skilled in the task assigned; and
- .6 Provide supervision by experts in all aspects of the application of the materials, equipment or system being fabricated and installed.

**§ 3.19.9** That if any Work is performed which is contrary to legal requirements, to promptly make all changes as required and take all other corrective action to comply therewith and pay all costs arising there from.

**§ 3.19.10** That any review or consideration by Owner, Construction Manager, or Architect of any method of construction, invention, appliance, process, article, device or material of any kind shall be for its general adequacy for the Work and shall not be an approval for the use thereof by Contractor in violation of any patent or other rights of any third person. Owner and Architect shall in no event be deemed to have reviewed or to have been required to review or consider the means and methods of construction, all of which are chosen exclusively by the Contractor.

**§ 3.19.11** That if any provision of the Contract Documents conflicts with any agreement among members of trade associations, or with a union or labor council which regulates the work to be performed by a particular trade, to reconcile such conflict without delay or damage to Owner. In the event the progress of the Work is delayed by such conflict, Architect may require that other material or equipment of equal or better kind and quality be provided at no additional cost to Owner. This right of substitution shall not limit other rights that the Owner may have concerning such delay.

**§ 3.19.12** In accordance with local or NY State Laws and Regulations, the Contractor, including any of its employees, subcontractors, suppliers or materialmen or other representatives, shall not use tobacco in any form on the premises during the course of the Work. Contractors failing to abide by this requirement shall be prohibited from working at the site and shall be responsible for any consequent delays or added costs to the Owner as a result of such noncompliance.

**§ 3.19.13** The Contractor shall provide reasonable and visible identification for each employee, Subcontractor, or other person at the Project site, and shall, upon request of the Owner, make available a list of names of those employees, Subcontractors or others working under the direction of the Contractor at the Project site. Any such identification shall be reasonably visible to the Construction Manager, Architect and to Owner's or Tenants' personnel at all times to allow the Owner to maintain the safety and security of buildings, property, and persons at the Project site. Contractors failing to abide by this requirement are different from those as indicated.

**§ 3.19.14** The Contractor, its employees and Subcontractors and their employees shall be subject to and abide by rules and regulations established by the Owner. No weapons of any kind shall be permitted on-site; there shall be no harassment of a sexual, ethnic, or religious nature; there shall be no use of profanity.

### **§ 3.20 Local Conditions, Existing Features and Underground Data**

**§ 3.20.1** The Contractor acknowledges it has satisfied itself as to the nature and location of the Work, the general and local conditions, particularly those bearing on transportation, disposal, handling and storage of materials, availability of labor, materials, equipment, utilities, roads, weather, ground water table, character of surface and subsurface materials and conditions, the facilities needed to prosecute the Work, and all other factors which in any way affect the Work or the cost thereof under this Contract. Any failure by the Contractor to acquaint itself with the available information concerning these conditions will not relieve it from the responsibility of successfully performing work. See Section § 1.2.2.1.

**§ 3.20.2** The location of existing features shown on plans is intended for general information only. The Contractor is solely responsible for accurate determination of the location of all structures and shall not be entitled to any extra payment due to any unforeseen difficulties or distances encountered in the Work.



**§3.20.3** The locations, depths, and data as to underground conditions have been obtained from records, surface indications and data furnished by others. The information furnished is solely for the convenience of the Contractor without any warranty, expressed or implied as to its accuracy or completeness. To the extent permitted by law, the Contractor shall make no claim against the Owner or Architect or the Construction Manager with respect to the accuracy or completeness of such information if erroneous, or if the conditions found at the time of construction.

### **§ 3.21 Construction Stresses**

**§ 3.21.1** The Contractor shall be solely responsible for the load conditions created during construction. The Contractor shall be responsible for repairing any structure which is dislocated, over strained, or damaged during construction.

**§ 3.21.2** The Contractor is responsible for restoration and/or repair of utilities, property, buildings, pavement, walkways, roads, etc. damaged by its activities.

### **§ 3.22 Training and Instructions**

**§ 3.22.1** Upon Substantial Completion of the Work, the Contractor shall orient and instruct the Owner's designated personnel in the operation and maintenance of all equipment furnished by the Contractor and shall turn over all pertinent literature and operational manuals relating to the equipment. The format for organizing, binding, and delivering such manuals shall be as described in the Specifications.

## **ARTICLE 4 ARCHITECT AND CONSTRUCTION MANAGER**

### **§ 4.1 General**

**§ 4.1.1** The Architect is the person or entity retained by the Owner pursuant to Section 2.3.2 and identified as such in the Agreement.

**§ 4.1.2** The Construction Manager is the person or entity retained by the Owner pursuant to Section 2.3.3 and identified as such in the Agreement.

**§ 4.1.3** Duties, responsibilities, and limitations of authority of the Construction Manager and Architect as set forth in the Contract Documents shall not be restricted, modified, or extended without written consent of the Owner, Construction Manager, and Architect. Consent shall not be unreasonably withheld.

**§ 4.1.4** If the employment of the Architect or Construction Manager is terminated, the Owner shall employ a successor Architect or Construction Manager.

**§ 4.1.5** The Architect shall be deemed a third-party beneficiary of the Contract and the General Conditions of the Construction Contract and Supplementary Conditions. As such, where Architect incurs additional costs as a result of actions of the Contractor or any of its Subcontractors and Architect is not entitled to compensations for such costs by Owner as Additional Services, such additional cost shall be paid by the Contractor directly to the Architect as Architect's current rates.

### **§ 4.2 Administration of the Contract**

**§ 4.2.1** The Construction Manager and Architect will provide administration of the Contract as described in the Contract Documents and will be the Owner's representatives during construction until the date the Architect issues the final Certificate for Payment. The Construction Manager and Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

**§ 4.2.2** The Architect will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. On the basis of the site visits, the Architect will keep the Owner and the Construction Manager reasonably informed about the progress and quality of the portion of the Work completed, and promptly report to the Owner and Construction Manager known deviations from the Contract Documents and defects and deficiencies observed in the Work.

**§ 4.2.3** The Construction Manager shall provide one or more representatives who shall be in attendance at the Project site whenever the Work is being performed. The Construction Manager will determine in general if the Work observed is

being performed in accordance with the Contract Documents, will keep the Owner and Architect reasonably informed of the progress of the Work, and will promptly report to the Owner and Architect known deviations from the Contract Documents and the most recent Project schedule, and defects and deficiencies observed in the Work.

**§ 4.2.4** The Construction Manager will schedule and coordinate the activities of the Contractor and other Contractors in accordance with the latest approved Project schedule.

**§ 4.2.5** The Construction Manager, except to the extent required by Section 4.2.4, and Architect will not have control over, charge of, or responsibility for, the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents, and neither will be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. Neither the Construction Manager nor the Architect will have control over or charge of, or be responsible for acts or omissions of, the Contractor, Subcontractors, or their agents or employees, or of any other persons or entities performing portions of the Work.

**§ 4.2.6 Communications.** The Owner shall communicate with the Contractor and the Construction Manager's consultants through the Construction Manager about matters arising out of or relating to the Contract Documents. The Owner and Construction Manager shall include the Architect in all communications that relate to or affect the Architect's services or professional responsibilities. The Owner shall promptly notify the Architect of the substance of any direct communications between the Owner and the Construction Manager otherwise relating to the Project. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and suppliers shall be through the Contractor. Communications by and with other Contractors shall be through the Construction Manager. Communications by and with the Owner's own forces and Separate Contractors shall be through the Owner. The Contract Documents may specify other communication protocols.

**§ 4.2.7** The Construction Manager and Architect will review and certify all Applications for Payment by the Contractor, in accordance with the provisions of Article 9.

**§ 4.2.8** The Architect and Construction Manager have authority to reject Work that does not conform to the Contract Documents, and will notify each other about the rejection. Whenever the Construction Manager considers it necessary or advisable, the Construction Manager will have authority to require inspection or testing of the Work in accordance with Sections 13.4.2 and 13.4.3, upon written authorization of the Owner, whether or not the Work is fabricated, installed or completed. The foregoing authority of the Construction Manager will be subject to the provisions of Sections 4.2.18 through 4.2.20 inclusive, with respect to interpretations and decisions of the Architect. However, neither the Architect's nor the Construction Manager's authority to act under this Section 4.2.8 nor a decision made by either of them in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect or the Construction Manager to the Contractor, Subcontractors, suppliers, their agents or employees, or other persons performing any of the Work.

**§ 4.2.9** Utilizing the submittal schedule provided by the Contractor, the Construction Manager shall prepare, and revise as necessary, a Project submittal schedule incorporating information from other Contractors, the Owner, Owner's consultants, Owner's Separate Contractors and vendors, governmental agencies, and participants in the Project under the management of the Construction Manager. The Project submittal schedule and any revisions shall be submitted to the Architect for approval.

**§ 4.2.10** The Construction Manager will receive and promptly review for conformance with the submittal requirements of the Contract Documents, all submittals from the Contractor such as Shop Drawings, Product Data, and Samples. Where there are other Contractors, the Construction Manager will also check and coordinate the information contained within each submittal received from the Contractor and other Contractors, and transmit to the Architect those recommended for approval. By submitting Shop Drawings, Product Data, Samples, and similar submittals, the Construction Manager represents to the Owner and Architect that the Construction Manager has reviewed and recommended them for approval. The Construction Manager's actions will be taken in accordance with the Project submittal schedule approved by the Architect or, in the absence of an approved Project submittal schedule, with reasonable promptness while allowing sufficient time to permit adequate review by the Architect.

**§ 4.2.11** The Architect will review and approve, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data, and Samples, but only for the limited purpose of checking for conformance

with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. Upon the Architect's completed review, the Architect shall transmit its submittal review to the Construction Manager.

§ 4.2.12 Review of the Contractor's submittals by the Construction Manager and Architect is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Construction Manager and Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5, and 3.12. The Construction Manager and Architect's review shall not constitute approval of safety precautions or of any construction means, methods, techniques, sequences, or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

§ 4.2.13 The Construction Manager will prepare Change Orders and Construction Change Directives.

§ 4.2.14 The Construction Manager and the Architect will take appropriate action on Change Orders or Construction Change Directives in accordance with Article 7, and the Architect will have authority to order minor changes in the Work as provided in Section 7.4. The Architect, in consultation with the Construction Manager, will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

§ 4.2.15 Utilizing the documents provided by the Contractor, the Construction Manager will maintain at the site for the Owner one copy of all Contract Documents, approved Shop Drawings, Product Data, Samples, and similar required submittals, in good order and marked currently to record all changes and selections made during construction. These will be available to the Architect and the Contractor, and will be delivered to the Owner upon completion of the Project.

§ 4.2.16 The Construction Manager will assist the Architect in conducting inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion in conjunction with the Architect pursuant to Section 9.8; and receive and forward to the Owner written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10. The Construction Manager will forward to the Architect a final Application and Certificate for Payment or final Project Application and Project Certificate for Payment upon the Contractor's compliance with the requirements of the Contract Documents.

§ 4.2.17 If the Owner and Architect agree, the Architect will provide one or more Project representatives to assist in carrying out the Architect's responsibilities at the site. The Owner shall notify the Construction Manager of any change in the duties, responsibilities and limitations of authority of the Project representatives.

§ 4.2.18 The Architect will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of the Construction Manager, Owner, or Contractor through the Construction Manager. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness.

§ 4.2.19 Interpretations and decisions of the Architect will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either, and will not be liable for results of interpretations or decisions so rendered in good faith.

§ 4.2.20 The Architect's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

§ 4.2.21 The Construction Manager will receive and review requests for information from the Contractor, and forward each request for information to the Architect, with the Construction Manager's recommendation. The Architect will review and respond in writing, through the Construction Manager, to requests for information about the Contract Documents. The Construction Manager's recommendation and the Architect's response to each request will be made



in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

## **ARTICLE 5 SUBCONTRACTORS**

### **§ 5.1 Definitions**

**§ 5.1.1** A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work on the Project. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include other Contractors or Separate Contractors or the subcontractors of other Contractors or Separate Contractors.

**§ 5.1.2** A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work on the Project. The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

### **§ 5.2 Award of Subcontracts and Other Contracts for Portions of the Work**

**§ 5.2.1** Unless otherwise stated in the Contract Documents, the Contractor, as soon as practicable after award of the Contract, shall notify the Construction Manager, for review by the Owner, Construction Manager and Architect, of the persons or entities proposed for each principal portion of the Work, including those who are to furnish materials or equipment fabricated to a special design. Within 14 days of receipt of the information, the Construction Manager may notify the Contractor whether the Owner, the Construction Manager or the Architect (1) has reasonable objection to any such proposed person or entity or, (2) requires additional time for review. Failure of the Construction Manager to provide notice within the 14-day period shall constitute notice of no reasonable objection.

**§ 5.2.2** The Contractor shall not contract with a proposed person or entity to whom the Owner, Construction Manager or Architect has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

**§ 5.2.3** If the Owner, Construction Manager or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner, Construction Manager or Architect has no reasonable objection. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.

**§ 5.2.4** The Contractor shall not substitute a Subcontractor, person, or entity for one previously selected if the Owner, Construction Manager or Architect makes reasonable objection to such substitution.

### **§ 5.3 Subcontractual Relations**

By appropriate written agreement, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work, that the Contractor, by these Contract Documents, assumes toward the Owner, Construction Manager and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner, Construction Manager and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies, and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.



## **§ 5.4 Contingent Assignment of Subcontracts**

**§ 5.4.1** Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner, provided that

- .1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor; and
- .2 assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract.

**§ 5.4.2** Upon such assignment, if the Work has been suspended for more than 30 days, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension.

**§ 5.4.3** Upon assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor Contractor or other entity. If the Owner assigns the subcontract to a successor Contractor or other entity, the Owner shall nevertheless remain legally responsible for all of the successor Contractor's obligations under the subcontract.

## **ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS**

### **§ 6.1 Owner's Right to Perform Construction with Own Forces and to Award Other Contracts**

**§ 6.1.1** The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and with Separate Contractors retained under Conditions of the Contract substantially similar to those of this Contract, including those provisions of the Conditions of the Contract related to insurance and waiver of subrogation.

**§ 6.1.2** When the Owner performs construction or operations with the Owner's own forces or Separate Contractors, the Owner shall provide for coordination of such forces and Separate Contractors with the Work of the Contractor, who shall cooperate with them.

**§ 6.1.3** Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces or with Separate Contractors, the Owner or its Separate Contractors shall have the same obligations and rights that the Contractor has under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6, and Articles 10, 11, and 12.

### **§ 6.2 Mutual Responsibility**

**§ 6.2.1** The Contractor shall afford the Owner's own forces, Separate Contractors, Construction Manager and other Contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

**§ 6.2.2** If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner's own forces, Separate Contractors or other Contractors, the Contractor shall, prior to proceeding with that portion of the Work, promptly notify the Construction Manager and Architect of apparent discrepancies or defects in the construction or operations by the Owner or Separate Contractor or other Contractors that would render it unsuitable for proper execution and results of the Contractor's Work. Failure of the Contractor to notify the Construction Manager and the Architect of apparent discrepancies or defects prior to proceeding with the Work shall constitute an acknowledgment that the Owner's or Separate Contractor's or other Contractors' completed or partially completed construction is fit and proper to receive the Contractor's Work. The Contractor shall not be responsible for discrepancies or defects in the construction or operations by the Owner or Separate Contractors or other Contractors that are not apparent.

**§ 6.2.3** The Contractor shall reimburse the Owner for costs the Owner incurs, including costs that are payable to a Separate Contractors or to other Contractors, because of the Contractor's delays, improperly timed activities or defective construction.

§ 6.2.4 The Contractor shall promptly remedy damage that the Contractor wrongfully causes to completed or partially completed construction, or to property of the Owner, Separate Contractors, or other Contractors as provided in Section 10.2.5.

§ 6.2.5 The Owner, Separate Contractors, and other Contractors shall have the same responsibilities for cutting and patching as are described for the Contractor in Section 3.14.

### § 6.3 Owner's Right to Clean Up

If a dispute arises among the Contractor, Separate Contractors, other Contractors, and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Construction Manager, with notice to the Architect, will allocate the cost among those responsible.

## ARTICLE 7 CHANGES IN THE WORK

### § 7.1 General

§ 7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.

§ 7.1.1.1 Construction Change Directive: Architect may issue a document, on AIA Form G714, signed by Owner, instructing Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order. The Document shall describe the changes in the Work and designates method of determining any change in Contract Sum or Contract Time.

1. The document will describe the required changes and will designate method of determining any change in Contract Sum or Contract time.
2. Promptly execute the change.

§ 7.1.2 A Change Order shall be based upon agreement among the Owner, Construction Manager, Architect and Contractor. A Construction Change Directive requires agreement by the Owner, Construction Manager and Architect and may or may not be agreed to by the Contractor. An order for a minor change in the Work may be issued by the Architect alone.

§ 7.1.2.1 Proposal Request: Architect may issue a document which includes a detailed description of a proposed change with supplementary or revised Drawings and specifications. Contractor shall prepare and submit a fixed price quotation within 7 calendar days of receipt of such documents.

§ 7.1.2.2 Submit to the Construction Manager, the Name of the Individual Authorized to receive change documents and who will be responsible for informing others in contractor's employ or subcontractors of changes to the Contract Documents.

§ 7.1.2.3 Contractor may propose a change by submitting a request for change to the Construction Manager, describing the proposed change and its full effect on the Work, with a statement describing the reason for the change, and the effect on the Contract Sum and Contract time with full documentation and a statement describing the effect on Work by separate or other contractors. The Construction Manager Shall Submit to the Architect for review.

§ 7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents. The Contractor shall proceed promptly with changes in the Work, unless otherwise provided in the Change Order, Construction Change Directive, or order for a minor change in the Work.

§ 7.1.4 Changes in the Work involving additional Work or deletion of Work whether or not resulting in an addition to or subtraction from the Contract Sum shall not be made until the Contractor submits to the Construction Manager the cost of the added or deleted Work with a complete and detailed listing of all Subcontractors involved, all materials, labor and equipment.

§ 7.1.4.1 Overhead and profit as described in § 7.1.7 and § 7.1.7.1 may be added to the cost of a Claim for additional Work *only* when the source of monies for such additional Work is not an Allowance included in the Contract Sum or any other monies for Work included in the Contract Sum.

**§ 7.1.4.2** Changes in the Work whether or not involving additions or deductions from the Contract Sum shall not be made until an appropriate Change Order or Change Directive have been issued.

**§ 7.1.4.3** ALL CHANGE ORDERS MUST HAVE THE APPROVAL OF THE OWNER AND ARCHITECT IN WRITING.

**§ 7.1.5** Actual cost of labor and material shall be defined as the amount paid for the following items, to the extent determined reasonable and necessary:

- .1** Cost of materials delivered to the job site for incorporation into the contract work.
- .2** Wage paid to workers and foreman and wage supplements paid to labor organizations in accordance with current labor agreements.
- .3** Premiums or taxes paid by the Contractor for worker's compensation insurance, unemployment insurance, FICA tax and other payroll taxes as required by law, net of actual and anticipated refunds and rebates. (Not to be included in calculation of overhead and profit.)
- .4** Sales taxes as required by law.
- .5** Allowance for use of construction equipment (exclusive of hand tools and minor equipment), as approved for use by the Architect. The rate on self-owned equipment used for periods of under 1 week will be the Associated Equipment Distributor's published monthly rate divided by 22 days to establish a daily rate and divided again by 8 hours to establish an hourly rate. Equipment used for periods of 5 days or more will be billed at a rate equal to 45 percent of the published monthly rate. In the alternative, the Architect may approve the reimbursement of a rate representing the allocable costs of ownership. Self-owned equipment is defined to include equipment rented from controlled or affiliated companies. Rented equipment will be paid for at the actual rental cost. Gasoline, oil and grease required for operation and maintenance will be paid for at the actual cost. When, in the opinion of the Contractor and as approved by the Architect, suitable equipment is not available on the site, the moving of said equipment to and from the site will be paid for at actual cost.

**§ 7.1.6** Overhead shall include insurance other than those incidental to labor mentioned above, premiums on bonds required by the Contractor, Contractor's Supervisory employees, office management, home and field office expenses, transportation costs and both manual and power small tools and manual and power small equipment.

**§ 7.1.6.1** For Work done by the Prime Contractor's own forces, mark-up for combined overhead and profit on materials and on cost of labor shall not exceed 15%.

- .1** Work authorized under Article §3.8 Allowances are not subject to overhead and profit.

**§ 7.1.6.2** For Work done by the Subcontractors, mark-up of costs as defined herein by Subcontractor's for combined overhead and profit on materials and on cost of labor shall not exceed 10%.

- .1** To this amount, 5% may be added for the Prime Contractor's combined overhead and profit.
- .2** Work authorized under Article §3.8 Allowances are not subject to overhead and profit.

**§ 7.1.7** To facilitate reviewing quotations for either extra charges or deductions, all proposals shall be accompanied by a complete itemization of costs including labor, materials, subcontracts, and if allowed, mark-ups for overhead and profit. Subcontracts shall be similarly itemized. In no case will a change involving over \$1,000.00 be approved without itemization.

**§ 7.1.7.1** If requested, the Contractor shall submit detailed quotations from material suppliers.

**§ 7.1.8** Regardless of the method used to determine the value of any change, the Contractor will be required to submit evidence satisfactory to the Architect to substantiate each and every item that constitutes his proposal of the value of the change. The amounts allowed for overhead and profit shall not exceed the applicable percentages as established in the two (2) following Sections:

**§ 7.1.8.1** If the Work is done directly by the Contractor, overhead and profit in the amount of 15% may be added to the cost proposal. The percentages for overhead and profit may vary according to the nature, extent and complexity of the work involved, but in no case shall exceed the percentages set forth in the paragraph. Overhead and profit percentages are not to be applied to the premium portion of overtime pay.

**§ 7.1.8.2** If the Work is done by a subcontractor, subcontractor's overhead and profit in the amount of 10% may be added to the cost of labor and materials. To this amount, there may be added 5 percent for the Contractor's combined overhead and profit. Overhead and profit percentages are not to be applied to the premium portion of overtime pay.

**§ 7.1.9** Whenever the cost of any Work is to be determined pursuant to § 7.1.1 thru § 7.1.8, Contractor will submit in form acceptable to the Construction Manager and Architect an itemized cost breakdown together with supporting data.

**§ 7.1.9.1** In computing the value of a change order which involves additions and deductions of work and the added work exceed the omitted work, overhead and profit shall be computed on the amount by which the cost of additional labor and materials exceeds the cost of the omitted labor and material, except no additional overhead and profit shall be allowed on value of work determined in accordance with § 7.1.5.

**§ 7.1.9.2** In computing the value of a change order which involves deductions and additions and the Work omitted exceeds the added Work, the Contractor will be allowed to retain the overhead and profit on the amount by which the omitted Work exceeds the added Work, except that no overhead and profit shall be retained on value of work.

**§ 7.1.9.3** The Contractor may retain overhead and profit on a change order which involves deductions only, except that no overhead and profit shall be considered on value of Work."

## **§ 7.2 Change Orders**

A Change Order is a written instrument prepared by the Construction Manager and signed by the Owner, Construction Manager, Architect, and Contractor, stating their agreement upon all of the following:

- .1 The change in the Work;
- .2 The amount of the adjustment, if any, in the Contract Sum; and
- .3 The extent of the adjustment, if any, in the Contract Time.

## **§ 7.3 Construction Change Directives**

**§ 7.3.1** A Construction Change Directive is a written order prepared by the Architect and signed by the Owner, Contractor, Construction Manager and Architect, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions, or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

**§ 7.3.2** A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

**§ 7.3.3** If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

- .1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation. Lump sum adjustment shall be substantiated by submitting evidence of actual costs to the Construction Manager and Architect for evaluation;
- .2 Unit prices stated in the Contract Documents or subsequently agreed upon;
- .3 Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed; or
- .4 As provided in Section 7.3.4.

**§ 7.3.4** If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Construction Manager shall determine the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an allowance for overhead and profit in accordance with § 7.1.8, § 7.1.8.1, § 7.1.8.2, § 7.1.9, § 7.1.9.1, § 7.1.9.2, § 7.1.9.3, and when permitted by § 7.1.6 and § 7.1.6.1. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Construction Manager may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.4 shall be limited to the following:



- .1 Costs of labor, including applicable payroll taxes, fringe benefits required by agreement or custom, workers' compensation insurance, and other employee costs approved by the Construction Manager and Architect;
- .2 Costs of materials, supplies, and equipment, including cost of transportation, whether incorporated or consumed;
- .3 Rental costs of machinery and equipment, exclusive of manual and small power tools and manual and small power equipment, whether rented from the Contractor or others;
- .4 Costs of permit fees, and sales, use, or similar taxes, directly related to the change; and
- .5 Costs of consumable supplies.

**§ 7.3.5** If the Contractor disagrees with the adjustment in the Contract Time, the Contractor may make a Claim in accordance with applicable provisions of Article 15.

**§ 7.3.6** Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Construction Manager of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.

**§ 7.3.7** A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be incorporated into a Change Order.

**§ 7.3.8** Pending final determination of the total cost of a Construction Change Directive to the Owner, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The Construction Manager and Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Construction Manager and Architect determine to be reasonably justified. The interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15.

**§ 7.3.9** When the Owner and Contractor agree with a determination made by the Construction Manager and Architect concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and the Construction Manager shall prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

*(Paragraph deleted)*

#### **§ 7.4 Minor Changes in the Work**

The Architect may order minor changes in the Work that are consistent with the intent of the Contract Documents and do not involve an adjustment in the Contract Sum or an extension of the Contract Time. The Architect's order for minor changes shall be in writing. If the Contractor believes that the proposed minor change in the Work will affect the Contract Sum or Contract Time, the Contractor shall notify the Construction Manager and shall not proceed to implement the change in the Work. If the Contractor performs the Work set forth in the Architect's order for a minor change without prior notice to the Construction Manager that such change will affect the Contract Sum or Contract Time, the Contractor waives any adjustment to the Contract Sum or extension of the Contract Time.

#### **§ 7.5 Unit Prices**

**§ 7.5.1** Where the Work involved is covered by unit prices contained in the Contract Documents, by application of unit prices to the quantities of the items involved (subject to the provisions of § 7.1.1.1 through § 7.5.1.4 inclusive).

**§ 7.5.1.1** Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the established unit prices for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work performed by Contractor will be made by Architect in accordance with § 7.5.4.

**§ 7.5.1.2** Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.

§ 7.5.1.3 Where the quantity of any item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement and there is no corresponding adjustment with respect to any other item of work and if Contractor believes that Contractor has incurred additional expense as a result thereof, Contractor may make a claim for an increase in the Contract Price in accordance with Article 11 if the parties are unable to agree as to the amount of any such increase.

§ 7.5.1.4 Construction Manager will determine the actual quantities and classifications of unit price work performed by Contractor. Construction Manager and Architect will review with the Contractor, Architect's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Architect's written decisions thereon will be final and binding upon Construction Manager, Owner and Contractor unless, within 10 days after the date of any such decision, either Owner or Contractor delivers to the other party to the Agreement and to Architect written notice of intention to appeal from such a decision.

## § 7.6 Alternates

§ 7.6.1 Where the Work involved is covered by Alternate contained in the Contract Documents, the Owner shall have the right of selection in respect to any or all of the Alternates as Bid. The Contractor shall provide the Owner thirty (30) days' written notice when the doing said work of an Alternate impacts the new Work or the removal of materials/products already installed or the acceptance of the Alternate will increase the Contractor's Contract amount.

## ARTICLE 8 TIME

### § 8.1 Definitions

§ 8.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

§ 8.1.2 The date of commencement of the Work is the date established in the Agreement.

§ 8.1.3 The date of Substantial Completion is the date certified by the Architect in accordance with Section 9.8.

§ 8.1.4 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

### § 8.2 Progress and Completion

§ 8.2.1 **TIME IS OF THE ESSENCE IN THE COMMENCEMENT, EXECUTION AND CONSTRUCTION OF THE WORK.** Contractor shall be responsible for all direct and consequential damages to Owner, Construction Manager, and Architect arising from any delay of Contractor, its Subcontractors and suppliers, in performing or completing the Work in accordance with the time requirements. By executing the Agreement, the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

§ 8.2.1.1 Contractor shall cooperate with the Owner, Construction Manager, Architect and other Contractors on the Project, making every reasonable effort to reduce the contract time.

§ 8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, commence the Work prior to the effective date of insurance required to be furnished by the Contractor and Owner.

§ 8.2.2.1 Contractor shall not commence Work on the site until two copies of all insurance policies as indicated in Article 11, attesting that the required coverage is in force, have been accepted by the Owner.

§ 8.2.3 Contractor shall do all things necessary to ensure the prosecution of the Work in accordance with any one or more of the following as determined by the Construction Manager and the Owner, in their discretion:

- .1 Project schedules and revisions thereof;
- .2 The time requirements for various portions of Work;
- .3 The requirements of the Project including, but not limited to, coordination requirements as may from time to time be known to Contractor;
- .4 Schedules of the Work provided by Contractor to Construction Manager upon the Owner's request.

**§ 8.2.4** If the Contractor does not achieve Substantial Completion within the Contract Time established in the Agreement between the Owner and the Contractor, or in a subsequent Change Order, the Contractor shall be liable to the Owner, in addition to any actual or consequential damages, for the costs of reimbursements to the Owner's Agents including, but not limited to, the Construction Manager and Architect for their services attributable to this delay.

**§ 8.2.5** Should the progress of the Work and/or other Work be delayed by any fault, neglect, act or failure to act of Contractor or any of its Subcontractors or suppliers so as to cause any additional cost, expense, liability or damage to Owner, Construction Manager, or Architect or for which Owner, Construction Manager, or Architect may become liable, Contractor shall hold Owner, Construction Manager, and Architect harmless from and indemnify Owner, Construction Manager, and Architect against all such additional cost, expense liability or damage in accordance with the provisions of Article 11.

**§ 8.2.6** The Work shall be performed during designated working hours, except that in the event of emergency or when necessary to perform the Work in accordance with the requirements of § 8.2, Work shall be performed at Contractor's cost and expense on other shifts, overtime, Saturdays, Sundays, Holidays and at other times, if permission to do so has been obtained in writing from Owner. Without limiting the requirements of the preceding sentence, if the progress of the Work or of the Project has been delayed by any fault, neglect, act or failure to act of Contractor or any of its Subcontractors or suppliers, Contractor shall work such overtime, at Contractor's cost and expense as aforesaid, as Construction Manager shall deem necessary or desirable to make up for all time lost and to avoid delay in the completion of the Work and of the Project. The failure by Construction Manager to direct Contractor to engage in such overtime shall not relieve Contractor of the consequences of its delay.

**§ 8.2.7** Unless otherwise noted, the date of commencement of the Work is the date established in the Agreement. Contractor shall organize construction schedules as specified in § 3.10, Contractor's Construction Schedules. The commencement date shall not be postponed by the failure to act of the Contractor or of persons or entities for which the Contractor is responsible.

**§ 8.2.8** The Construction Manager may direct acceleration of the Work so that it may be performed in advance of the schedules, time requirements and Project requirements. If so directed, Contractor shall increase its staff and/or work overtime. Contractor will not be entitled to additional compensation for Work performed outside of designated working hours, except as approved by Owner. Provided that Contractor is not in default under the Contract, and Owner has issued the aforesaid authorization, there shall be added to the Contract Sum as actual out-of-pocket amount equal to:

- .1 Additional premiums on wages actually paid, at rates that have been accepted by Construction Manager and Architect
- .2 Taxes imposed by law on such additional wages;
- .3 Premiums for worker's compensation and liability insurance if required to be paid on such additional wages.

Written authorization for overtime work that exceeds \$500.00 for which Contractor intends to charge the Owner in any one week shall be invalid unless confirmed in writing by the Owner, it being understood that Owner's Designated Representative shall not have authority to authorize such overtime which exceeds \$500.00 in any one week.

**§ 8.2.9** In no case shall the contractor delay the progress of the Work or any part thereof on account of changes in the Work or disputes caused by proposed or ordered changes in the Work or any disputes or disagreements as to the equitable value of such changes.

**§ 8.2.10** Contractor and Contractor's Surety shall be strictly accountable for completion as a condition to satisfactorily contractual performance.

### **§ 8.3 Delays and Extensions of Time**

**§ 8.3.1** Should Contractor be obstructed or delayed in the commencement, prosecution or completion of the Work, without fault on its part, by reason of failure to act, direction, order, neglect, delay or default of the Owner, Construction Manager, or the Architect; by changes in the Work; fire, lightning, earthquake, enemy action, act of God

or similar catastrophe; by Governmental restrictions with respect to materials or labor, or by an industry-wide strike beyond Contractor's reasonable control, then Contractor shall be entitled to an extension of time lost by reason of any and all causes aforesaid, but no Claim for extension of time on account of delay shall be allowed unless a Claim in writing therefore is presented to Construction Manager with reasonable diligence but in any event not later than fifteen (15) days after the commencement of such claimed delay. Except for the causes specifically listed above in this sub-section, no other cause or causes of delays shall give rise to an extension of time to perform the Work. The granting of an extension of time is conditioned upon Contractor's timely submission of the aforesaid written notice. Except to the extent, if any, expressly prohibited by law, Contractor expressly agrees not to make, and hereby waives, any Claim for damages, including those resulting from increased labor or material cost, on account of any delay, obstruction or hindrance for any cause whatsoever, whether or not foreseeable and whether or not anticipated including but not limited to the aforescribed causes, and agrees that the sole right and remedy therefore shall be extension of time, provided the requisite condition as to written Claim has been met.

**§ 8.3.2** If Contractor claims an increase in the Contract Sum or an extension in the completion time required by reason of a change in the Work, Contractor shall give Construction Manager and Architect written notice within fifteen (15) days after Contractor's knowledge of the occurrence of the matter giving rise to such Claim. This notice shall be given by Contractor before proceeding to execute the changed Work, except in an emergency endangering life or property in which case Contractor shall proceed in accordance with § 10.3. No such Claim will be valid unless notice is given as required in this section. Contractor shall proceed to execute the Work, even though the increase or time extension has not been agreed upon.

**§ 8.3.2.1** Extension of time, if requested by the Contractor, shall only be considered after the Contractor has made reasonable effort to recover the lost time. These efforts shall be documented by the Contractor and submitted to the Architect.

**§ 8.3.2.2** An extension, or extensions, of time may be granted subject to the provisions of this article, but only after written application therefore by the contractor in accordance with Article 15.

**§ 8.3.2.3** An extension of time shall be only for the number of days of delay that the Construction Manager may determine to be due solely to the causes set forth in the application for extension of time. The Contractor shall not be entitled to receive a separate extension of time for each one of several causes of delay operating concurrently; but if at all, only the actual period of delay as determined by the Construction Manager.

**§ 8.3.3** Contractor shall not be allowed an extension of time unless Contractor has established to the satisfaction of the Owner, Construction Manager, and Architect that the delay claimed by Contractor is to a portion of the Work on the critical path of the work schedule.

**§ 8.3.4** Under no circumstances will Contractor look to or make a Claim against Owner, Construction Manager, or Architect for the consequences of any delay resulting from directions given or not given by Construction Manager including scheduling and coordination of the Work or resulting from Architect's preparation of Drawings and Specifications or review of Shop Drawings.

**§ 8.3.5** When the Contract Time has been extended, such extension of time shall not be considered as justification for extra compensation to the Contractor for administrative costs or other similar reasons.

## **§ 8.4 Damages for Delay**

**§ 8.4.1 Architectural Changes for Delay in Completion.** If the entire work is not fully completed within the maximum allowable time for completion specified in the agreement, including any extensions granted thereto, architectural charges incurred by the Owner, from the completion date thus established to the actual final Date of Substantial Completion of the work, shall be charges to the Contractor for failing to complete its work by the stipulated date and be deducted from the final monies due the Contractor. Such charges shall be determined at the rate of \$750.00 per day per man for each and every man and day that the Architect and Construction Manager needs to furnish project management or an on-site Construction Manager Representative.

**§ 8.4.2 Liquidated Damages for Delay in Completion.** Failure to complete the work within the maximum allowable time for completion specified in the Agreement and/or the Milestone Schedule, including any extensions granted thereto, or failure to meet an intermediate milestone date as established by the Milestone Schedule, shall entitle the



Owner to deduct from monies due to the Contractor, or to otherwise charge the Contractor, as liquidated damages the amount per calendar day of One Thousand Dollars (\$1,000.00) for each calendar day beyond such maximum allowable time in the completion of the work. Such amount of liquidated damages shall be in addition to the \$750 per day charges for delay described in Paragraph 8.4.1.

The absence of a liquidated damage amount and/or other criteria concerning same shall not preclude the Owner from exercising its rights. All time limits stated in the Contract Documents are of the essence of the Agreement. The provisions of this Article 8 shall not exclude recovery by Owner for damages (including but not limited to fees and charges of Engineers, Architects, Construction Manager, Attorneys and other professionals and court and litigation costs) for delay by the Contractor.

**§ 8.4.3 No Damage for Delay.** Each Prime Contractor agrees to make no claims for delay in the performance of this Contract occasioned by an act or omission, or act of the Owner or any of its representatives and agrees that such a claim shall be fully compensated for by an extension of time to complete the performance of the work as provided herein.

## **ARTICLE 9 PAYMENTS AND COMPLETION**

### **§ 9.1 Contract Sum**

**§ 9.1.1** The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

**§ 9.1.2** If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed so that application of such unit prices to the actual quantities causes substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

### **§ 9.2 Schedule of Values**

Where the Contract is based on a stipulated sum or Guaranteed Maximum Price, the Contractor shall submit a schedule of values to the Construction Manager, before the first Application for Payment, allocating the entire Contract Sum to the various portions of the Work. The schedule of values shall be prepared in the form, and supported by the data to substantiate its accuracy, required by the Construction Manager and the Architect. This schedule, unless objected to by the Construction Manager or Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment. The Construction Manager shall forward to the Architect the Contractor's schedule of values. Any changes to the schedule of values shall be submitted to the Construction Manager and supported by such data to substantiate its accuracy as the Construction Manager and the Architect may require, and unless objected to by the Construction Manager or the Architect, shall be used as a basis for reviewing the Contractor's subsequent Applications for Payment.

**§ 9.2.1** Submit a printed schedule on AIA form G703 – Application and Certificate for Payment Continuation Sheet. Submit in duplicate to the Architect within 15 days after date of Owner-Contractor Agreement.

**§ 9.2.2** Format: Utilize the Table of Contents of the Project Manual. Identify each line item with number and title of the Specification Section for each Project site. Provide breakdown of both labor and materials.

**§ 9.2.3** Include within each line item a direct proportional amount of contractor's overhead and profit.

**§ 9.2.4** Line item for Record Drawings which are to be turned over to the Owner at the end of the Project shall not be less than 0.15 percent of the Contract price.

### **§ 9.2.5 Schedule of Contract Values**

- .1** The list of items shall include all items included in all Divisions and Sections of the specifications and shall be shown as separate line items.
- .2** The following items shall also be listed separately as line items (with their respective values):
  - Bond and Project Insurance.
  - Mobilization and Demobilization.
  - Superintendence.
  - Training, Operations and Maintenance Manual, Construction Record Documents.
  - Each Allowance associated with the Contract.

- Each Alternate accepted.
  - Each Change Directive as it is issued; to be listed below the associated allowance.
  - Each Change Order as it is issued.
  - Warranties.
  - Records Drawings.
  - Temporary Facilities.
  - Cleaning.
  - Submittals.
  - Items to be Completed List.
- .3 Contractor shall maintain and keep current all changes to the Schedule of Values caused by Change Orders, Construction Change Directives or other authorized changes. Such revised Schedule of Values shall be presented monthly with the Application for Payment.

### **§ 9.3 Applications for Payment**

**§ 9.3.1** Applications for payment shall be made monthly on the current AIA Form G732-2019 Application and Certificate for Payment and G703 Continuation Sheet for operations completed in accordance with the Approved Schedule of Values. Applications shall be based on the contract prices of labor and materials incorporated into the Work and of materials suitably stored and secured up to the last day of the previous month, less retainage and less the aggregate of previous payments. Change orders when approved shall be listed at the bottom of the last sheet of the payment application.

**§ 9.3.1.1** At least twenty (20) days prior to date established for each progress payment, each Contractor shall submit to the Construction Manager for its review, a preliminary pencil copy of an itemized Application for Payment completed in accordance with the approved Schedule(s) of Values.

**§ 9.3.1.2** Such applications may include requests for payment on account of changes in the Work that have been properly authorized by Construction Change Directives but not included in Change Orders. Such items, if anticipated to be paid from an Allowance, shall be listed under that associated Allowance.

**§ 9.3.1.3** Such applications may not include requests for payment of amounts the Contractor does not intend to pay to a Subcontractor or material supplier because of a dispute or other reason.

**§ 9.3.1.4** All supporting data requested by the Construction Manager and Architect from Subcontractors and material suppliers necessary to substantiate the Contractor's right to payment shall be furnished by the Contractor.

**§ 9.3.1.5** Until the Contract-scheduled date of Substantial Completion (including authorized adjustment), the Owner shall pay 95% of the amount due the Contractor on account of progress payments, less an amount equal to 250% of the amount of any Claims, liens, or judgments against the Contractor which have not been satisfactorily discharged.

- .1 Retainage resulting from § 9.3.1.5 shall be 5% plus an amount equal to 200% of the amount of any Claims, liens, or judgments against the Contractor which have not been satisfactorily discharged.
- .2 At Substantial Completion, when satisfied with the progress of the Work, the Owner, with Consent of Surety, may adjust the amount retained from previous progress payments in accordance with § 9.8.3.
- .3 The full retainage may be reinstated if the manner of completion of the Work and its progress do not remain satisfactory to the Owner and the Architect, if the Surety withholds his consent or for other good and sufficient reasons.

**§ 9.3.1.6** Each Contractor shall submit three (3) final copies of their Application for Payment, incorporating those revisions noted on the pencil copies, to the Construction Manager within two (2) days after being notified that the draft copy, with revisions, is acceptable.

**§ 9.3.1.7** The final copies of each Application for Payment (AIA Form G732-2019) shall be signed by an officer of the Contractor whose signature shall be notarized in the space provided.

**§ 9.3.1.8** Applications shall be based on the completed Work as described above less retainage, and less the aggregate of previous payments. Change Orders when approved shall be listed at the bottom of the last sheet of the payment application.

**§ 9.3.2** Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage, and transportation to the site, for such materials and equipment stored off the site.

**§ 9.3.2.1** Procedures required by Owner shall include, but are not necessarily limited to, submission by the Contractor to the Construction Manager and Architect of bills of sale and bills of lading for such materials and equipment, provision of opportunity for the Construction Manager's and Architect's visual verification that such materials and equipment are in place in storage; and, if stored off-site, submission by the contractor of verification that such materials and equipment are stored in a bonded warehouse.

**§ 9.3.2.2** All such materials and equipment, including materials and equipment stored on-site but not yet incorporated into the Work, and upon which partial payments have been made, shall become the property of the Owner. The care and protection of such materials and equipment shall remain the responsibility of the Contractor until incorporation into the Work, including property storage and maintenance of insurance coverage against theft, damage and fire on a replacement cost basis without voluntary deductible.

**§ 9.3.2.3 Stored Materials**

- .1 If the Contractor intends to request payment for materials stored on the site in accordance with the provisions of the Contract Documents, he must identify same on the current Contractor's Application for Payment form. The value of **previous** months' "stored materials" shall be included in the "Work Completed" column of the current application.
- .2 The relationship of labor and materials as indicated on the Payment Application shall be the basis for establishing the rate of payment for the transfer of material stored to materials installed.
- .3 All such materials and equipment, including materials and equipment stored on-site but not yet incorporated into the Work, upon which partial payments have been made, shall become the property of the Owner.
- .4 Payment for stored materials shall be in the amount of 95% of the value of stored materials less 5% retainage.

**§ 9.3.3** The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information, and belief, be free and clear of liens, claims, security interests, or encumbrances, in favor of the Contractor, Subcontractors, suppliers, or other persons or entities that provided labor, materials and equipment relating to the Work.

**§ 9.3.3.1** The Contractor shall keep the Owner and the Owner's property (including funds for payment under the Project) free from all liens, legal or equitable, arising out of Contractor's Work hereunder. If any such lien is filed with the Owner by anyone claiming by, through or under the Contractor, the Contractor shall discharge the lien within 10 days of the filing thereof. The Contractor further expressly agrees to defend the Owner, at the Contractor's sole expense, against any actions, lawsuits or proceedings brought against the Owner as a result of liens filed against payments due the Contractor or the Work, the site of any of the Work, the Project site and any improvements thereon or any portion of the property of the Owner. The Contractor hereby agrees to indemnify and hold the Owner harmless against any such liens or Claims of lien and agrees to pay any judgment or lien resulting from any such actions, lawsuits or proceedings. The Owner agrees to release any payments with as a result of a duly filed lien, upon compliance by the Contractor with the applicable discharge or vacatur provisions of the Lien Law.

**§ 9.3.4** The Contractor and all of its subcontractors shall submit to the Owner, within thirty (30) days after issuance of their first certified payroll and every thirty (30) days thereafter, a transcript of the original certified payroll record, as provided by the Labor Law, subscribed, and affirmed as true under the penalties of perjury for the Contractor and all its Subcontractors. Failure to do so shall be cause for the Owner to withhold payment until such records are received.

**§ 9.3.5** When the Construction Manager or Architects requires substantiating information, submit data justifying dollar amount in question. Provide one copy of data with cover letter for each copy of submittal. Show application number and date, and line item by number and description."

**§ 9.3.6** The Contractor further expressly undertakes to defend the Owner, at the Contractor's sole expense, against any actions, lawsuits or proceedings brought against Owner as a result of liens filed against the Work, the site of any of the Work, the project site, and any improvements thereon, payments due the Contractor or any portion of the property of any of the Owners (referred to collectively as liens in §9.3.3). The Contractor hereby agrees to indemnify and hold Owner harmless against any such liens or claims of lien and agrees to pay any judgment or lien resulting from any such actions, lawsuits, or proceedings.

**§ 9.3.7** The Owner shall release any payments withheld due to a lien or a claim of lien if the Contractor obtains security acceptable to the Owner or a lien bond which is: (1) issued by a surety acceptable to the Owner, (2) in form and substance satisfactory to the Owner, and (3) in the maximum amount prescribed by law. By posting a lien bond or other acceptable security, however, the Contractor shall not be relieved of any responsibilities or obligations under this § 9.3, including, without limitation, the duty to defend and indemnify the Indemnities. The cost of any premiums incurred in connection with such bonds and security shall be the responsibility of the Contractor and shall not be part of, or cause any adjustment to, the Contract Sum.

**§ 9.3.8** The Contractor agrees to waive any right which it may have to assert a mechanic's or other lien against the Project site and any improvements thereon, including, without limit, the Work itself. Furthermore, the Contractor will cause a similar provision, waiving any right to a mechanic's or other lien against the property, to be included in all of its subcontracts, any subcontracts, and all contracts with material suppliers. Upon execution of the Agreement, the Contractor shall also execute the waiver of lien attached to the Agreement and made a part thereof as an Exhibit.

#### **§ 9.4 Certificates for Payment**

**§ 9.4.1** Where there is only one Contractor, the Construction Manager will, within seven days after the Construction Manager's receipt of the Contractor's Application for Payment, review the Application, certify the amount the Construction Manager determines is due the Contractor, and forward the Contractor's Application and Certificate for Payment to the Architect. Within seven days after the Architect receives the Contractor's Application for Payment from the Construction Manager, the Architect will either (1) issue to the Owner a Certificate for Payment, in the full amount of the Application for Payment, with a copy to the Construction Manager; or (2) issue to the Owner a Certificate for Payment for such amount as the Architect determines is properly due, and notify the Construction Manager and Owner of the Architect's reasons for withholding certification in part as provided in Section 9.5.1; or (3) withhold certification of the entire Application for Payment, and notify the Construction Manager and Owner of the Architect's reason for withholding certification in whole as provided in Section 9.5.1. The Construction Manager will promptly forward to the Contractor the Architect's notice of withholding certification.

**§ 9.4.2** Where there is more than one Contractor performing portions of the Project, the Construction Manager will, within seven days after the Construction Manager receives all of the Contractors' Applications for Payment: (1) review the Applications and certify the amount the Construction Manager determines is due each of the Contractors; (2) prepare a Summary of Contractors' Applications for Payment by combining information from each Contractor's application with information from similar applications for progress payments from the other Contractors; (3) prepare a Project Application and Certificate for Payment; (4) certify the amount the Construction Manager determines is due all Contractors; and (5) forward the Summary of Contractors' Applications for Payment and Project Application and Certificate for Payment to the Architect.

**§ 9.4.2.1** Within seven days after the Architect receives the Project Application and Project Certificate for Payment and the Summary of Contractors' Applications for Payment from the Construction Manager, the Architect will either (1) issue to the Owner a Project Certificate for Payment, with a copy to the Construction Manager; or (2) issue to the Owner a Project Certificate for Payment for such amount as the Architect determines is properly due, and notify the Construction Manager and Owner of the Architect's reasons for withholding certification in part as provided in Section 9.5.1; or (3) withhold certification of the entire Project Application for Payment, and notify the Construction Manager and Owner of the Architect's reason for withholding certification in whole as provided in Section 9.5.1. The Construction Manager will promptly forward the Architect's notice of withholding certification to the Contractors.



**§ 9.4.3** The Construction Manager's certification of an Application for Payment or, in the case of more than one Contractor, a Project Application and Certificate for Payment, shall be based upon the Construction Manager's evaluation of the Work and the data in the Application or Applications for Payment. The Construction Manager's certification will constitute a representation that, to the best of the Construction Manager's knowledge, information, and belief, the Work has progressed to the point indicated, the quality of the Work is in accordance with the Contract Documents, and that the Contractor is, or Contractors are, entitled to payment in the amount certified.

**§ 9.4.4** The Architect's issuance of a Certificate for Payment or, in the case of more than one Contractor, Project Application and Certificate for Payment, shall be based upon the Architect's evaluation of the Work, the recommendation of the Construction Manager, and data in the Application for Payment or Project Application for Payment. The Architect's certification will constitute a representation that, to the best of the Architect's knowledge, information, and belief, the Work has progressed to the point indicated, the quality of the Work is in accordance with the Contract Documents, and that the Contractor is, or Contractors are, entitled to payment in the amount certified.

**§ 9.4.5** The representations made pursuant to Sections 9.4.3 and 9.4.4 are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion, and to specific qualifications expressed by the Construction Manager or Architect.

**§ 9.4.6** The issuance of a Certificate for Payment or a Project Certificate for Payment will not be a representation that the Construction Manager or Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work; (2) reviewed construction means, methods, techniques, sequences, or procedures; (3) reviewed copies of requisitions received from Subcontractors and suppliers and other data requested by the Owner to substantiate the Contractor's right to payment; or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

#### **§ 9.5 Decisions to Withhold Certification**

**§ 9.5.1** The Construction Manager or Architect may withhold a Certificate for Payment or Project Certificate for Payment in whole or in part, to the extent reasonably necessary and as permitted by State Law, to protect the Owner, if in the Construction Manager's or Architect's opinion the representations to the Owner required by Section 9.4.3 and 9.4.4 cannot be made. If the Construction Manager or Architect is unable to certify payment in the amount of the Application, the Construction Manager will notify the Contractor and Owner as provided in Section 9.4.1 and 9.4.2. If the Contractor, Construction Manager and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment or a Project Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Construction Manager or Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment or Project Certificate for Payment previously issued, to such extent as may be necessary in the Construction Manager's or Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from the acts and omissions described in Section 3.3.2 because of

- .1 defective Work not remedied;
- .2 third party claims filed or reasonable evidence indicating probable filing of such claims, unless security acceptable to the Owner is provided by the Contractor;
- .3 failure of the Contractor to make payments properly to Subcontractors or suppliers for labor, materials or equipment;
- .4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- .5 damage to the Owner or a Separate Contractor or other Contractor;
- .6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay;
- .7 repeated failure to carry out the Work in accordance with the Contract Documents; or
- .8 any other breach of this Agreement.

**§ 9.5.2** When either party disputes the Architect's decision regarding a Certificate for Payment under Section 9.5.1, in whole or in part, that party may submit a Claim in accordance with Article 15.

**§ 9.5.3** When the reasons for withholding certification are removed, certification will be made for amounts previously withheld.

**§ 9.5.4** If the Architect or Construction Manager withholds certification for payment under Section 9.5.1, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or supplier to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Construction Manager, and both will reflect such payment on the next Certificate for Payment.

## **§ 9.6 Progress Payments**

**§ 9.6.1** After the Architect has issued a Certificate for Payment or Project Certificate for Payment, the Owner shall make payment in the manner and within 30 days after receipt, and shall so notify the Construction Manager and Architect.

**§ 9.6.2** The Contractor shall pay each Subcontractor, no later than seven days after receipt of payment from the Owner, the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner.

**§ 9.6.3** The Construction Manager will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Owner, Construction Manager and Architect on account of portions of the Work done by such Subcontractor.

**§ 9.6.4** The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven days, the Owner shall have the right to contact Subcontractors and suppliers to ascertain whether they have been properly paid. Neither the Owner, Construction Manager nor Architect shall have an obligation to pay, or to see to the payment of money to, a Subcontractor or supplier, except as may otherwise be required by law.

**§ 9.6.5** The Contractor's payments to suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

**§ 9.6.6** A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

**§ 9.6.7** Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor for Work properly performed by Subcontractors or provided by suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, create any fiduciary liability or tort liability on the part of the Contractor for breach of trust, or entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

**§ 9.6.8** Provided the Owner has fulfilled its payment obligations under the Contract Documents, the Contractor shall defend and indemnify the Owner from all loss, liability, damage or expense, including reasonable attorney's fees and litigation expenses, arising out of any lien claim or other claim for payment by any Subcontractor or supplier of any tier. Upon receipt of notice of a lien claim or other claim for payment, the Owner shall notify the Contractor. If approved by the applicable court, when required, the Contractor may substitute a surety bond for the property against which the lien or other claim for payment has been asserted.

**§ 9.6.9** Upon Substantial Completion of the entire Work, the Contractor shall submit a requisition for the "contract balance". The Owner shall pay the remaining amount less the greater value of a lump sum of \$10,000 OR the sum of two- and one-half times the value of any items to be completed plus an amount necessary to satisfy any outstanding Claims, liens, or judgments against the Contractor. Until all remaining items of Work are satisfactory completed or corrected, the Owner may hold all retainage, including monies for all "uncompleted" items, until all items are completed, and closeout submittals are complete.

**§ 9.6.9.1** Contractors' requests for discontinuance of retainages shall be accompanied by a properly executed copy of the "Consent of Surety to Reduction in or Partial Release of Retainage", AIA Document G707A.

#### **§ 9.6.10 Retainage**

**§ 9.6.10.1** Applications for Payment shall include a retainage amount of not less than five percent (5%) of the value of the completed work. Reduction of retainage shall only be approved upon completion of the Work and when authorized by the Owner in writing.

#### **§ 9.7 Failure of Payment**

If the Construction Manager and Architect fail persistently to issue a Certificate for Payment or a Project Certificate for Payment, through no fault of the Contractor, within fourteen days after the Construction Manager's receipt of the Contractor's Application for Payment, or if the Owner fails persistently to pay the Contractor within seven days after the date established in the Contract Documents, the amount certified by the Construction Manager and Architect, then the Contractor may, upon thirty additional days' notice to the Owner, Construction Manager and Architect, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided for in the Contract Documents.

#### **§ 9.8 Substantial Completion**

**§ 9.8.1** Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so the Owner can occupy or utilize the Work for its intended use.

**§ 9.8.2** When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall notify the Construction Manager, and the Contractor and Construction Manager shall jointly prepare and submit to the Architect a comprehensive list of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

**§ 9.8.3** Upon receipt of the list, the Architect, assisted by the Construction Manager, will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect's inspection discloses any item, whether or not included on the list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect, assisted by the Construction Manager, to determine Substantial Completion.

**§ 9.8.3.1** No partial payments will be made after the time fixed for the completion of the Work or the time to which completion may be extended under the terms of the Contract, until the full and final completion and acceptance of all Work herein agreed upon.

**§ 9.8.3.2** Where project includes heating and/or air conditioning or other systems that are not put into operation at the time of occupancy, a sum shall be withheld until these systems have operated to the general satisfaction of the Architect. The retained amount shall approximate 5% of the cost of the systems as determined by the cost breakdown submitted.

**§ 9.8.4** When the Architect, assisted by the Construction Manager, determines that the Work of all of the Contractors, or designated portion thereof, is substantially complete, the Construction Manager will prepare, and the Construction Manager and Architect shall execute, a Certificate of Substantial Completion that shall establish the date of Substantial Completion; establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance; and fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion or this Agreement.

**§ 9.8.5** The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in the Certificate. Upon such acceptance, and consent of surety if any, the Owner shall make payment of retainage applying to the Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.



**§ 9.8.6** If the Architect and/or the Construction Manager are required to inspect the Work more than two (2) times prior to certifying the Work as being substantially complete on account of the discovery of one or more items that are not sufficiently complete, the Contractor shall be liable to the Owner for the amount of any costs, additional fees or compensation due from or paid by the Owner to the Architect and/or the Construction Manager for the additional inspections.

### **§ 9.9 Partial Occupancy or Use**

**§ 9.9.1** The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer and authorized by public authorities having jurisdiction over the Project. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor and Construction Manager shall jointly prepare and submit a list to the Architect as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect after consultation with the Construction Manager.

**§ 9.9.2** Immediately prior to such partial occupancy or use, the Owner, Construction Manager, Contractor, and Architect shall jointly inspect the area to be occupied or portion of the Work to be used. The Contractor will provide the Owner and Construction Manager with photographs documenting the condition of the space to be occupied. The photographs must be dated and supplied within three (3) business days of the inspection. Any subsequent damage to the space which cannot be confirmed by the Contractor's photographs (as occurring as a result of the Owner's occupancy) will be repaired by the Contractor at no additional cost to the Owner.

**§ 9.9.3** Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

### **§ 9.10 Final Completion and Final Payment**

**§ 9.10.1** Upon completion of the Work, the Contractor shall forward to the Construction Manager a notice that the Work is ready for final inspection and acceptance, and shall also forward to the Construction Manager a final Contractor's Application for Payment. Upon receipt, the Construction Manager shall perform an inspection to confirm the completion of Work of the Contractor. The Construction Manager shall make recommendations to the Architect when the Work of all of the Contractors is ready for final inspection, and shall then forward the Contractors' notices and Application for Payment or Project Application for Payment, to the Architect, who will promptly make such inspection. When the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Construction Manager and Architect will promptly issue a final Certificate for Payment or Project Certificate for Payment stating that to the best of their knowledge, information and belief, and on the basis of their on-site visits and inspections, the Work has been completed in accordance with the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Construction Manager's and Architect's final Certificate for Payment or Project Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

**§ 9.10.1.1** If the Work is not accepted by the Owner after final inspection and additional time is required to complete items identified during the final inspection, the date starting the one-year correction period described in Article 12 shall be set by the Architect at its discretion.

**§ 9.10.1.2** If the Architect and Construction Manager are required to perform additional inspections subsequent to the "final inspection" because the Work fails to comply with the requirements of the Contract, the amount of compensation paid to the Architect and Construction Manager by the Owner for additional services shall be deducted from the final payment to the Contractor.



§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect through the Construction Manager:

- (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied,
- (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect,
- (3) a written statement that the Contractor knows of no reason that the insurance will not be renewable to cover the period required by the Contract Documents,
- (4) consent of surety, if any, to final payment
- (5) documentation of any special warranties, such as manufacturers' warranties or specific Subcontractor warranties, and
- (6) if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts and releases and waivers of liens, claims, security interests, or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner.
  - (a) If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien, claim, security interest, or encumbrance. If a lien, claim, security interest, or encumbrance remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging the lien, claim, security interest, or encumbrance, including all costs and reasonable attorneys' fees.

§ 9.10.2.1 In addition to the submittals requested in § 9.10.2 above, the Contractor shall submit releases or waivers of liens from each Subcontractor, material supplier, and others with lien rights against the property of the Owner and shall submit a list of such parties.

§ 9.10.3 If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Construction Manager and Architect so confirm, the Owner shall, upon application by the Contractor and certification by the Construction Manager and Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed, corrected, and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of the surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect through the Construction Manager prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

§ 9.10.4 The making of final payment shall constitute a waiver of Claims by the Owner except those arising from

- .1 liens, Claims, security interests, or encumbrances arising out of the Contract and unsettled;
- .2 failure of the Work to comply with the requirements of the Contract Documents;
- .3 terms of special warranties required by the Contract Documents;
- .4 audits performed by the Owner, if permitted by the Contract Documents, after final payment; or
- .5 Costs, loss or damages sustained, either prior to or subsequent to such payment, as a result of any breach of the Contract, or any wrongful act or omission of the Contractor or any Subcontractor.

§ 9.10.5 Acceptance of final payment by the Contractor, a Subcontractor, or a supplier, shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

## ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

### § 10.1 Safety Precautions and Programs

The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Contract. The Contractor shall submit the Contractor's safety program to the Construction Manager for review and coordination with the safety programs of other Contractors. The Construction Manager's responsibilities for review and coordination of safety programs shall not extend to direct control over or charge of the acts or omissions of the Contractors, Subcontractors, agents or employees of the Contractors or Subcontractors, or any other persons performing portions of the Work and not directly employed by the Construction Manager.

**§ 10.1.1** Contractor is fully responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work and the Work site consistent with applicable laws and regulations, and generally accepted standards in the construction industry. Contractor acknowledges and agrees that it is fully responsible for the supervision and control of the Work and of Contractor's employees, subcontractors and/or suppliers, (and any party employed directly or indirectly by any of them, or for whom any of them are legally responsible) and the means, methods and manner in which the Work is performed.

**§ 10.1.2** Contractor specifically agrees to provide all necessary equipment, give all required notices, perform all required tests, and to employ all necessary safety measures and procedures to protect its employees, agents, subcontractors, and all other persons at the Project site from any hazards created directly or indirectly by Contractor's operation or performance of the Work, and any hazards which are not created by Contractor's operations or performance of the Work to which such parties are exposed at the Project site as a result of Contractor's operations or performance of the Work. In the event that equipment or safety devices are required, Contractor agrees that it will obtain such equipment or safety devices and employ same at its sole expense, and will strictly adhere to all provisions of the Occupational Safety and Health Act, as well as any State statutes, codes, rules and regulations pertaining to the safety or property as may be deemed applicable to the Contractor's work or the work of any person or party directly or indirectly employed by Contractor or for whom contractor is responsible. Contractor agrees that it shall be Contractor's sole responsibility to ensure that each of its employees, subcontractors and suppliers are also fully aware and in compliance with all such statutes, codes, rules and regulations at all times.

**§ 10.1.3** From the commencement until the acceptance of the Work, Contractor shall be solely responsible for the care of the Work covered by the Contract and for the materials, supplies and equipment delivered at the Site intended to be used in the Work, and all injury or damage to the same from whatever cause shall be made good at this expense before the final payment is made. Contractor shall provide suitable means of protection for and shall protect all materials intended to be used in the Work, all work in progress, and all completed work. Contractor shall take all necessary precautions to prevent injury or damage to the Work by flood, fire freezing or from inclemencies of the weather.

**§ 10.1.4** Not by way of limitation of the foregoing, at the end of each workday, Contractor shall secure all power tools and other potentially dangerous tools and equipment and shall remove means of access to areas of the Work site, so as to further protect the safety of occupants of the premises during such off-work hours.

**§ 10.1.5** Contractor's obligations under this section are not dependent upon any question of negligence on its part or on the part of its officers, agents, servants or employees, and neither the approval by the Architect or the Owner to Architect to call attention to improper or inadequate methods or to require a change in methods nor the neglect of the Architect or the Owner to direct Contractor to take any particular precautions or to refrain from doing any particular thing shall excuse the Contractor from his obligations hereunder in case of any such injury to person or damage to property. The provisions of this section are intended for the sole benefit and protection of the Owner and shall not create any cause of action in favor of any person, corporation entity, other than the Owner.

## **§ 10.2 Safety of Persons and Property**

**§ 10.2.1** The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury, or loss to

- .1 employees on the Work and other persons who may be affected thereby;
- .2 the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody, or control of the Contractor, a Subcontractor, or a Sub-subcontractor;
- .3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction; and
- .4 construction or operations by the Owner, Separate Contractors, or other Contractors.

**§ 10.2.2** The Contractor shall comply with, and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities, bearing on safety of persons or property or their protection from damage, injury, or loss.

**§ 10.2.2.1** The Contractor acknowledges that certain applicable laws, including, but not limited to, Sections 240 and 241 of New York State Labor Law, may impose liability on the Owner for injuries to persons employed by the

Contractor or by its Subcontractors or Sub-subcontractors. As between the Owner and the Contractor (or any of the Contractor's Subcontractors or Sub-subcontractors or any persons for which any of them shall be responsible), the Contractor shall be solely responsible for compliance with all such laws to the extent they pertain to the safety or protection of persons on the Project site or performing the Work. Any claim, charge, penalty or cause of action arising out of or on account of any such law shall be subject to Section 3.18.

**§ 10.2.3** The Contractor shall implement, erect, and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards; promulgating safety regulations; and notifying the owners and users of adjacent sites and utilities of the safeguards.

**§ 10.2.4** When use or storage of explosives or other hazardous materials or equipment or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel.

**§ 10.2.5** The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2, 10.2.1.3 and 10.2.1.4 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2, 10.2.1.3 and 10.2.1.4. The Contractor may make a Claim for the cost to remedy the damage or loss to the extent such damage or loss is attributable to acts or omissions of the Owner, Construction Manager or Architect or anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.

**§ 10.2.6** The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner, Construction Manager and Architect.

**§ 10.2.7** The Contractor shall not permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition.

**§ 10.2.8 Injury or Damage to Person or Property**

**Injury or Damage to Person or Property.** If the Contractor suffers injury or damage to persons or property because of an act or omission of the Owner or of any of the Owner's employees or agents or any others for whose acts the Owner is legally responsible, the Contractor shall give written notice thereof to the Owner and the Architect within a reasonable time not exceeding 2 days after first observance. The notice shall provide sufficient detail to enable to Owner to investigate the matter. If a Claim for additional cost or additional time is related to this Claim, it shall be made in accordance with the provisions of Article 15.

**§ 10.2.9 Restoration.** If during the construction, public or private property is damaged or destroyed as a result of its Work, the Contractor responsible shall, at its own expense, restore such property to a condition equal to that existing before such damage or injury was done, by cleaning up, repairing, rebuilding or replacing it, or otherwise making good such damage or destruction in an acceptable manner.

**§ 10.2.10 OSHA.** In addition to all requirements set forth herein, all Contractors and Subcontractors who perform any Work under this Contract will fully comply with the provisions of the Federal Occupational Safety and Health Act (OSHA) of 1970 and with any rules and regulations pursuant to the Act. This requirement shall apply continuously and not be limited to normal Working hours. The duty of the Construction Manager, Architect to conduct construction review of the Contractor's or its Subcontractor's performance is not intended to include review of the adequacy of the Contractor's or its Subcontractor's safety measures in, on or near the construction site or buildings.

**§ 10.2.11 Welding:**

- .1 All welding shall be done in accordance with the American Welding Society Code for Arch Welding Society, certified for current year.



- .2 When cutting or welding is to be done, the Owner **MUST** be notified prior to start. In addition, the Contractor for the Work shall provide a **fire guard** with proper fire extinguisher for duration of cutting and welding work.
- .3 A welding curtain is to be installed around area where welding or cutting is to be done. No welding machines will be tied into electric panels without express permission from the Owner. Portable gasoline driven generators may **not** be used without the expressed permission of the Owner.
- .4 Obtain Owner's permission for each location in existing building where welding is required. Owner's stipulated requirements shall be adhered to.

**§ 10.2.12 Open Burning.** Open burning on the site is prohibited. All possible precautions shall be taken to prevent fires.

**§ 10.2.13** When all or a portion of the Work is suspended for any reason, the Contractor shall securely fasten down all coverings and protect the Work from damage by any cause.

**§ 10.2.14** The Contractor shall promptly report, in writing, to the Construction Manager, Architect and the Owner all accidents arising out of or in connection with the Work that causes property damage, personal injury or death, giving full details and statements of any witnesses. In addition, if death, serious personal injury or serious property damage is caused, the accident shall be reported immediately by telephone or messenger to the above parties."

**§ 10.2.15** The Contractor shall be solely responsible for the conditions which develop during construction and in the event any structure is dislocated, over strained, or damaged so as to affect its usefulness, the Contractor shall be solely responsible. The Contractor shall take whatever steps necessary to strengthen, relocate or rebuild the structure to meet requirements.

### **§ 10.3 Hazardous Materials**

**§ 10.3.1** The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials or substances. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and notify the Owner, Construction Manager and Architect of the condition.

**§ 10.3.2** Upon receipt of the Contractor's written notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor, Construction Manager and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of the material or substance or who are to perform the task of removal or safe containment of the material or substance. The Contractor, the Construction Manager and the Architect will promptly reply to the Owner in writing stating whether or not any of them has reasonable objection to the persons or entities proposed by the Owner. If the Contractor, Construction Manager or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor, the Construction Manager and the Architect have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable additional costs of shutdown, delay, and start-up.

**§ 10.3.3** To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Construction Manager, Architect, their consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work in the affected area if in fact the material or substance presents the risk of bodily injury or death as described in Section 10.3.1 and has not been rendered harmless, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), except to the extent that such damage, loss, or expense is due to the fault or negligence of the party seeking indemnity.

§ 10.3.4 The Owner shall not be responsible under this Section 10.3 for hazardous materials or substances the Contractor brings to the site unless such materials or substances are required by the Contract Documents. The Owner shall be responsible for hazardous materials or substances required by the Contract Documents, except to the extent of the Contractor's fault or negligence in the use and handling of such materials or substances.

§ 10.3.5 The Contractor shall reimburse the Owner for the cost and expense the Owner incurs (1) for remediation of hazardous materials or substances the Contractor brings to the site and negligently handles, or (2) where the Contractor fails to perform its obligations under Section 10.3.1, except to the extent that the cost and expense are due to the Owner's fault or negligence.

§ 10.3.6 If, without negligence on the part of the Contractor, the Contractor is held liable by a government agency for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the Owner shall reimburse the Contractor for all cost and expense thereby incurred.

#### § 10.4 Emergencies

§ 10.4.1 In an emergency affecting life, the Work, or the Owner or Owner's property, Contractor, without special instructions or authorization from Construction Manager or Architect, shall take the action necessary to deal adequately with such emergency. Notice of any such action shall be given by Contractor to Construction Manager, Architect and Owner as soon as is practicable, but not later than 2 days following the occurrence.

### ARTICLE 11 INSURANCE AND BONDS

#### § 11.1 Contractor's Insurance and Bonds

§ 11.1.1 The Contractor shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Contractor shall purchase and maintain the required occurrence-based insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located and rated B+ or better by A.M. Best Company and to which the Owner has no reasonable objection. The Owner, Construction Manager and Construction Manager's consultants, and the Architect and Architect's consultants, shall be named as additional insureds under the Contractor's commercial general liability policy or as otherwise described in the Contract Documents.

§ 11.1.1.1 Within the time period set by the Owner after award of the Contract, and before the effective date of the Agreement, the Contractor shall cause the authorized representative of the insurance company to completely fill out and execute the Certificate of Insurance form which is bound with the Agreement section of the Contract Documents, such instrument certifying the kinds and amounts of insurance being issued, including statement that coverage provided under the policies will not be canceled or materially changed until at least 30 days prior written notice has been given to the Owner. The Contractor shall also furnish the Owner one (1) duplicate of the original policy covering each kind of insurance issued. Each subcontractor shall follow the identical procedure, and it shall not commence work until the Certificate of Insurance, including any requested duplicate policies, has been submitted to and approved by the Owner. The Contractor shall furnish to the Owner insurance certificates for all subcontractors with the amount of insurance as required herein. Contractor shall include New York Construction Certificate of Liability Insurance Addendum – Accord Form 855 with the Certificate of Insurance.

§ 11.1.1.2 All claims against the Contractor or its subcontractors, arising from the performance of the work or conditions incidental thereto, must be investigated immediately by the insurance company furnishing the applicable coverage. The Contractor shall require the insurance company to furnish, to the Architect and Owner, written reports following the investigation and the disposition of each claim or demand by the owner; a status report shall be provided to the Owner and Architect on all claims more than two months outstanding.

§ 11.1.1.3 All insurance coverage furnished by subcontractors shall remain in force until their work has been completed and the subcontractor does not intend to gain further access to the site, and the Contractor has released said subcontractor from further liability associated therewith. All liability insurance furnished by the Contractor shall remain in force during the time intervals defined Article 8 – Time in General Conditions of the Contract for Construction and Supplementary Conditions. All property insurance furnished by Contractor shall remain in force until Owner approves Architect's Certificate of Substantial Completion and has made final payment to Contractor.

§ 11.1.1.4 The kinds and amounts of insurance are as follows:

- .1 **Worker's Compensation and Employer's Liability:** A policy shall be issued in compliance with the provisions of the Worker's Compensation Law.
- .2 **Non-Occupational Disability Benefits:** A policy shall be issued in compliance with the provisions of the Disability Benefits Law.
- .3 **Comprehensive General Liability** having limits of not less than:
 

|                                                           |             |
|-----------------------------------------------------------|-------------|
| General Aggregate (except Products Complete & Operations) | \$2,000,000 |
| Products Complete & Operations Aggregate                  | \$1,000,000 |
- .4 **BODILY INJURY LIABILITY + PROPERTY DAMAGE LIABILITY** having limits of not less than the following:
 

|                       |                                |
|-----------------------|--------------------------------|
| Combined single limit | \$1,000,000.00 Each Occurrence |
|                       | \$2,000,000.00 Aggregate       |

for all damages arising during the life of the Contract, and shall include at least the following designated hazards:

- a. Premises and Operations
- b. Independent Contractors
- c. Completed Operations, including products
- d. Broad Form Property Damage, including "XCU" (explosion, collapse, and underground)
- e. Contractual Liability, covering indemnification assumed per requirements of Article 11 (AIA Document A232 -2019 General Conditions of the Contract for Construction, Construction Manager as advisor edition and Supplementary Conditions.
- f. Fire damage.
- g. Personal and Advertising Injury with Employment Exclusion deleted.
- h. Labor Law coverage is mandatory for all General Liability Policies.

Completed projects shall carry General Liability coverage for 2 years after substantial completion.

- .5 **Pollution/Special Hazards Liability:** Provide coverage for legal liability and expense for damage to property or bodily injury and death with respect to the removal, disturbance, handling, and disposal of contaminated or hazardous materials under this contract by the Contractor or any person or organization employed directly or indirectly by the Contractor. (NOTE: This coverage is required only for those contracts which contain work involving Asbestos Abatement Lead Hazard Control work, PCB Containing Material Removal, or Petroleum Remediation.) If included in Contractor's Umbrella Policy, this shall be detailed in the Umbrella Policy Documents.

|                       |                                |
|-----------------------|--------------------------------|
| Combined single limit | \$1,000,000.00 Each Occurrence |
|                       | \$2,000,000.00 Aggregate       |

- .6 **Comprehensive Automobile Liability** (including non-owned and hire automobiles), having limits of liability not less than \$1,000,000.00.

- .7 **Umbrella Liability** (mandatory):

\$2,000,000.00 for Contracts under \$2,000,000.00  
 \$5,000,000.00 for Contracts exceeding \$2,000,000.00  
 \$10,000,000.00 for Contracts exceeding \$7,000,000.00  
 \$15,000,000.00 for Contracts exceeding \$10,000,000.00  
 Labor Law Coverage is mandatory for all Umbrella Liability Policies

- .8 **Property Insurance (Builders Risk/Installation Floater):** To be provided by the Owner.

Each Contractor is responsible for all tools, equipment, materials, Work, etc., until Substantial Completion and possession by the Owner. Each Contractor shall provide insurance for theft as he may require for himself, his Subcontractors, and his employees' protection). The insurance coverage referred to in this subparagraph shall be in accordance with a standard Builder's Risk Policy used in the State where the project is located.

The Owner does not waive any rights of recovery or provide any waivers of subrogation for losses caused by negligent acts of the aforementioned parties. Any right of recovery or subrogation shall not affect payment of claims made by the Property Insurer to all the aforementioned parties including any negligent party.

- .9 Owner's Protective Liability:** Furnish to the Owner complete Owner's Protective Liability Insurance in the amounts specified in Coverage .3 above for Personal Bodily Injury Liability Insurance and for Property Damage Liability Insurance.
- .10 Additional Coverages:** The Architect, Construction Manager and Owner along with their respective officers, agents, and employees shall be named as additional insured for ongoing operations and products/completed operations on all Contractors' comprehensive general and automobile liability policies, bodily injury and property damage liability policies and umbrella liability policies which all must be primary and non-contributory with respect to additional insured's.
- .11 Per Project Aggregate:** Provide full aggregate general liability limits of each project.
- .12 Waiver of Subrogation:** To the fullest extent permitted by state law, a waiver of subrogation clause shall be added to the general liability, auto, and worker's compensation policies in favor of the Owner, its officers, agents, or employees with respect to this project. The Owner does not waive any rights of recovery or provide any waivers of subrogation for losses caused by negligent acts of the aforementioned parties. Any right of recovery or subrogation shall not affect payment of claims made by the Property Insurer to all the aforementioned parties including any negligent party."

**§ 11.1.1.5** The Contractor shall not commence Work at the project site under this Contract until Contractor has obtained all the insurance required herein and until such insurance has been accepted by the Owner, nor shall Work be commenced on their subcontracts until all similar insurance required of the Subcontractors has been obtained and accepted by the Owner.

**§ 11.1.2** Each Contractor shall furnish Bonds covering the faithful performance of the Contract and the payment of all obligations arising thereunder in the amount of 100% of the accepted bid on the form indicated in the Information to Bidders, with such Sureties as may be agreeable to the Owner. The Premiums shall be paid by the Contractor.

**§ 11.1.2.1** The Contractor shall deliver the required Bond dated as of the date of the Contract or applicable letter of intent, whichever is earlier, to the Owner no later than the date of execution of the Contract, or if the Work is commenced prior thereto in response to a Notice to Proceed, the Contractor shall, prior to commencement of the Work, submit evidence satisfactory to the Owner that such Bond will be issued."

**§ 11.1.2.2** The Payment and Performance Bonds shall be written on AIA Document A312 Series and the Warranty Bond shall be written on AIA Document A313-2020 or such other forms as the Owner may approve.

**§ 11.1.2.3** The Contractor shall require the attorney-in-fact who executes the required Bonds on behalf of the Surety to affix thereto a certified and current copy of the power of attorney.

**§ 11.1.2.4** The Contractor shall provide the name and address of Surety for process of service as well as supply the contact information for the Surety representative responsible for the Bond, including the individual's name, address, telephone number, fax number and email address."

**§ 11.1.2.5** The Performance and Payment Bonds shall remain in full force and effect through the warranty period.

**§ 11.1.3** Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

**§ 11.1.3.1** The Contractor shall not commence Work at the project site under this Contract until Contractor has obtained all the insurance required herein and until such insurance has been accepted by the Owner, nor shall Work be commenced on their subcontracts until all similar insurance required of the Subcontractors has been obtained and accepted by the Owner.



**§ 11.1.4 Notice of Cancellation or Expiration of Contractor's Required Insurance.** Within three (3) business days of the date the Contractor becomes aware of an impending or actual cancellation or expiration of any insurance required by the Contract Documents, the Contractor shall provide notice directly to the Owner, and separately to the Construction Manager, of such impending or actual cancellation or expiration. Upon receipt of notice from the Contractor, the Owner shall, unless the lapse in coverage arises from an act or omission of the Owner, have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by the Contractor. The furnishing of notice by the Contractor shall not relieve the Contractor of any contractual obligation to provide any required coverage.

## **§ 11.2 Owner's Insurance**

**§ 11.2.1** The Owner shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Owner shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located.

**§ 11.2.2 Failure to Purchase Required Property Insurance.** If the Owner fails to purchase and maintain the required property insurance, with all of the coverages and in the amounts described in the Agreement or elsewhere in the Contract Documents, the Owner shall inform both the Contractor and the Construction Manager, separately and in writing, prior to commencement of the Work. Upon receipt of notice from the Owner, the Contractor may delay commencement of the Work and may obtain insurance that will protect the interests of the Contractor, Subcontractors, and Sub-Subcontractors in the Work. When the failure to provide coverage has been cured or resolved, the Contract Sum and Contract Time shall be equitably adjusted. In the event the Owner fails to procure coverage, the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent the loss to the Owner would have been covered by the insurance to have been procured by the Owner. The cost of the insurance shall be charged to the Owner by a Change Order. If the Owner does not provide written notice, and the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain the required insurance, the Owner shall reimburse the Contractor for all reasonable costs and damages attributable thereto.

**§ 11.2.3 Notice of Cancellation or Expiration of Owner's Required Property Insurance.** Within three (3) business days of the date the Owner becomes aware of an impending or actual cancellation or expiration of any property insurance required by the Contract Documents, the Owner shall provide notice directly to the Contractor, and separately to the Construction Manager, of such impending or actual cancellation or expiration. Unless the lapse in coverage arises from an act or omission of the Contractor: (1) the Contractor, upon receipt of notice from the Owner, shall have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by either the Owner or the Contractor; (2) the Contract Time and Contract Sum shall be equitably adjusted; and (3) the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent any loss to the Owner would have been covered by the insurance had it not expired or been cancelled. If the Contractor purchases replacement coverage, the cost of the insurance shall be charged to the Owner by an appropriate Change Order. The furnishing of notice by the Owner shall not relieve the Owner of any contractual obligation to provide required insurance.

## **§ 11.3 Waivers of Subrogation**

**§ 11.3.1** The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents, and employees, each of the other; (2) the Construction Manager and Construction Manager's consultants; (3) the Architect and Architect's consultants; (4) other Contractors and any of their subcontractors, sub-subcontractors, agents, and employees; and (5) Separate Contractors, if any, and any of their subcontractors, sub-subcontractors, agents, and employees, for damages caused by fire, or other causes of loss, to the extent those losses are covered by property insurance required by the Agreement or other property insurance applicable to the Project, except such rights as they have to proceeds of such insurance. The Owner or Contractor, as appropriate, shall require similar written waivers in favor of the individuals and entities identified above from the Construction Manager, Construction Manager's consultants, Architect, Architect's consultants, other Contractors, Separate Contractors, subcontractors, and sub-subcontractors. The policies of insurance purchased and maintained by each person or entity agreeing to waive claims pursuant to this Section 11.3.1 shall not prohibit this waiver of subrogation. This waiver of subrogation shall be effective as to a person or entity (1) even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, (2) even though that person or entity did not pay the insurance premium directly or indirectly, or (3) whether or not the person or entity had an insurable interest in the damaged property.



§ 11.3.1.1 As relates to § 11.3, the Owner does not waive any rights of recovery or provide any waivers of subrogation for losses caused by negligent acts of the aforementioned parties. Any right of recovery or subrogation shall not affect payment of claims made by the Property Insurer to all the aforementioned parties including any negligent party.

§ 11.3.2 If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, to the extent permissible by such policies, the Owner waives all rights in accordance with the terms of Section 11.3.1 for damages caused by fire or other causes of loss covered by this separate property insurance.

#### § 11.4 Loss of Use, Business Interruption, and Delay in Completion Insurance

The Owner, at the Owner's option, may purchase and maintain insurance that will protect the Owner against loss of use of the Owner's property, or the inability to conduct normal operations, due to fire or other causes of loss. The Owner waives all rights of action against the Contractor, Architect, and Construction Manager for loss of use of the Owner's property, due to fire or other hazards however caused.

#### § 11.5 Adjustment and Settlement of Insured Loss

§ 11.5.1 A loss insured under the property insurance required by the Agreement shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.5.2. The Owner shall pay the Construction Manager, Architect and Contractor their just shares of insurance proceeds received by the Owner, and by appropriate agreements the Construction Manager, Architect and Contractor shall make payments to their consultants and Subcontractors in similar manner.

§ 11.5.2 Prior to settlement of an insured loss, the Owner shall notify the Contractor of the terms of the proposed settlement as well as the proposed allocation of the insurance proceeds. The Contractor shall have 14 days from receipt of notice to object to the proposed settlement or allocation of the proceeds. If the Contractor does not object, the Owner shall settle the loss and the Contractor shall be bound by the settlement and allocation. Upon receipt, the Owner shall deposit the insurance proceeds in a separate account and make the appropriate distributions. Thereafter, if no other agreement is made or the Owner does not terminate the Contract for convenience, the Owner and Contractor shall execute a Change Order for reconstruction of the damaged or destroyed Work in the amount allocated for that purpose. If the Contractor timely objects to either the terms of the proposed settlement or the allocation of the proceeds, the Owner may proceed to settle the insured loss, and any dispute between the Owner and Contractor arising out of the settlement or allocation of the proceeds shall be resolved pursuant to Article 15. Pending resolution of any dispute, the Owner may issue a Construction Change Directive for the reconstruction of the damaged or destroyed Work.

#### § 11.6 Appearance of Counsel

§ 11.6.1 If an action for bodily injury and/or property damage is commenced against Owner or Architect, which in the opinion of the Owner's Architect's legal counsel or insurance coordinator is covered by the indemnity provisions of Article 3, Contractor shall, upon Owner's written request, promptly cause Contractor's insurance carrier to have its attorneys appear timely in the action on behalf of Owner and/or Architect and provide the defense of Owner and/or Architect.

### ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

#### § 12.1 Uncovering of Work

§ 12.1.1 If a portion of the Work is covered contrary to the Construction Manager's or Architect's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by either, be uncovered for their examination and be replaced at the Contractor's expense without change in the Contract Time.

§ 12.1.2 If a portion of the Work has been covered that the Construction Manager or Architect has not specifically requested to examine prior to its being covered, the Construction Manager or Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, the Contractor shall be entitled to an equitable adjustment to the Contract Sum and Contract Time as may be appropriate.

If such Work is not in accordance with the Contract Documents, the costs of uncovering the Work, and the cost of correction, shall be at the Contractor's expense.

## **§ 12.2 Correction of Work**

### **§ 12.2.1 Before Substantial Completion**

The Contractor shall promptly correct Work rejected by the Construction Manager or Architect or failing to conform to the requirements of the Contract Documents, discovered before Substantial Completion, and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Construction Manager's and Architect's services and expenses made necessary thereby, shall be at the Contractor's expense.

### **§ 12.2.2 After Substantial Completion**

**§ 12.2.2.1** In addition to the Contractor's obligations under Section 3.5, if, within one year after the date of Substantial Completion of the Work or designated portion thereof, or after the date for commencement of warranties established under Section 9.9.1, or by terms of any applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of notice from the Owner to do so, unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner, Construction Manager or Architect, the Owner may correct it in accordance with Section 2.5.

**§ 12.2.2.2** The one-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

**§ 12.2.2.3** The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Section 12.2. *Exception:* Any correction made under this 12.2.2 or under any other guarantee or warranty required by or included in the Contract Documents shall likewise be subject to correction at Contractor's own expense if it is found not to be in accordance with the Contract Documents within one year after the date that such correction is accepted by the Owner.

**§ 12.2.2.4** The guarantee-warranties required by § 12.2.2 shall be written in a form acceptable to the Owner, properly sworn to and signed by a responsible officer of the Contractor's firm.

**§ 12.2.2.5** The Performance and Payment Bonds shall remain in effect and full force through this period.

**§ 12.2.3** The Contractor shall remove from the site portions of the Work that are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

**§ 12.2.4** The Contractor shall bear the cost of correcting destroyed or damaged construction of the Owner, Separate Contractors, or other Contractors, whether completed or partially completed, caused by the Contractor's correction or removal of Work that is not in accordance with the requirements of the Contract Documents.

**§ 12.2.5** Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the one-year period for correction of Work as described in Section 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

## **§ 12.3 Acceptance of Nonconforming Work**

If the Owner prefers to accept Work that is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

§ 12.3.1 The Owner, with the advice of the Construction Manager and assistance of the Architect, shall determine the adjustment to the Contract Sum. The Contractor shall bear all direct, indirect and consequential costs attributable to the evaluation of and decision to accept such defective Work. Such costs for the efforts of the Construction Manager and Architect (at their current billing rates) and any other costs to the Owner will be charged to the Contractor through Change Order procedures.

## **ARTICLE 13 MISCELLANEOUS PROVISIONS**

### **§ 13.1 Governing Law**

The Contract shall be governed by the law of the place where the Project is located.

### **§ 13.2 Successors and Assigns**

§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns, and legal representatives to covenants, agreements, and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

*(Paragraph deleted)*

### **§ 13.3 Rights and Remedies**

§ 13.3.1 Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights, and remedies otherwise imposed or available by law.

§ 13.3.2 No action or failure to act by the Owner, Construction Manager, Architect, or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach thereunder, except as may be specifically agreed upon in writing.

### **§ 13.4 Tests and Inspections**

§ 13.4.1 Tests, inspections, and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules, and regulations or lawful orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections, and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections, and approvals. The Contractor shall give the Construction Manager and Architect timely notice of when and where tests and inspections are to be made so that the Construction Manager and Architect may be present for such procedures. The Owner shall bear costs of tests, inspections, or approvals that do not become requirements until after bids are received or negotiations concluded. The Owner shall directly arrange and pay for tests, inspections, or approvals where building codes or applicable laws or regulations so require.

§ 13.4.2 If the Construction Manager, Architect, Owner, or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection, or approval not included under Section 13.4.1, the Construction Manager and Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection, or approval, by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Construction Manager and Architect of when and where tests and inspections are to be made so that the Construction Manager and Architect may be present for such procedures. Such costs, except as provided in Section 13.4.3, shall be at the Owner's expense.

§ 13.4.3 If procedures for testing, inspection, or approval under Sections 13.4.1 and 13.4.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure, including those of repeated procedures and compensation for the Construction Manager's and Architect's services and expenses, shall be at the Contractor's expense.

§ 13.4.4 Required certificates of testing, inspection, or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Construction Manager for transmittal to the Architect.

§ 13.4.5 If the Construction Manager or Architect is to observe tests, inspections, or approvals required by the Contract Documents, the Construction Manager or Architect will do so promptly and, where practicable, at the normal place of testing.

§ 13.4.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

#### § 13.5 Interest

Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at a rate of 1% per annum.

### ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

#### § 14.1 Termination by the Contractor

§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of 30 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, for any of the following reasons:

- .1 Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;
- .2 An act of government, such as a declaration of national emergency, that requires all Work to be stopped;
- .3 Because the Construction Manager has not certified or the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents; or
- .4 The Owner has failed to furnish to the Contractor reasonable evidence as required by Section 2.2.

§ 14.1.2 The Contractor may terminate the Contract if, through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, repeated suspensions, delays, or interruptions of the entire Work by the Owner as described in Section 14.3, constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, or 120 days in any 365-day period, whichever is less.

§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon thirty days' notice to the Owner, Construction Manager and Architect, and upon the failure of the Owner to cure the alleged grounds for termination within 14 days following receipt of said notice, terminate the Contract and recover from the Owner payment for Work executed, as well as reasonable overhead and profit on Work not executed, and costs incurred by reason of such termination.

§ 14.1.4 If the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, or their agents or employees, or any other persons performing portions of the Work because the Owner has repeatedly failed to fulfill the Owner's obligations under the Contract Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven additional days' notice to the Owner, Construction Manager and Architect, terminate the Contract and recover from the Owner as provided in Section 14.1.3.

#### § 14.2 Termination by the Owner for Cause

§ 14.2.1 The Owner may terminate the Contract if the Contractor

- .1 refuses or fails to supply enough properly skilled workers or proper materials;
- .2 fails to make payment to Subcontractors or suppliers in accordance with the respective agreements between the Contractor and the Subcontractors or suppliers;
- .3 disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or
- .4 otherwise is guilty of breach of a provision of the Contract Documents.
- .5 files for bankruptcy or other debtor insolvency relief;
- .6 an act of omission by the Contractor that stops, delays, interferes with or damages the Work;
- .7 any other failure by the Contractor to perform any other terms and conditions of their Contract;
- .8 disregards the authority of the Owner.



§ 14.2.2 When any of the reasons described in Section 14.2.1 exist, after consultation with the Construction Manager, and upon certification by the Architect that sufficient cause exists to justify such action, the Owner may, without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

- .1 Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
- .2 Accept assignment of subcontracts pursuant to Section 5.4; and
- .3 Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

§ 14.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Construction Manager's and Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall, upon application, be certified by the Initial Decision Maker after consultation with the Construction Manager, and this obligation for payment shall survive termination of the Contract.

#### § 14.3 Suspension by the Owner for Convenience

§ 14.3.1 The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work, in whole or in part for such period of time as the Owner may determine.

§ 14.3.2 The Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay, or interruption under Section 14.3.1. No adjustment shall be made to the extent:

- .1 that performance is, was, or would have been, so suspended, delayed, or interrupted, by another cause for which the Contractor is responsible; or
- .2 that an equitable adjustment is made or denied under another provision of this Contract.

#### § 14.4 Termination by the Owner for Convenience

§ 14.4.1 The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.

§ 14.4.2 Upon receipt of notice from the Owner of such termination for the Owner's convenience, the Contractor shall

- .1 cease operations as directed by the Owner in the notice;
- .2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and
- .3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

§ 14.4.3 In case of such termination for the Owner's convenience, the Owner shall pay the Contractor for Work properly executed.

### ARTICLE 15 CLAIMS AND DISPUTES

#### § 15.1 Claims

§ 15.1.1 **Definition.** A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, a change in the Contract Time, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim. The Owner may, but is not required to, comply with the provisions of Article 15 when filing a Claim.

#### § 15.1.2 Time Limits on Claims

The Owner and Contractor shall commence all Claims and causes of action against the other and arising out of or related to the Contract, whether in contract, tort, breach of warranty or otherwise, in accordance with the requirements

of the binding dispute resolution method selected in the Agreement and within the period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all Claims and causes of action not commenced in accordance with this Section 15.1.2.

**§ 15.1.2.1** An additional Claim made after any initial Claim has been filed with the Owner, Construction Manager and Architect will not be considered unless submitted in a timely manner and in accordance with Article 15."

**§ 15.1.2.2** Any Claim shall be sufficiently detailed and descriptive to allow for a complete evaluation. The Contractor shall furnish any information requested by the Owner or Architect in connection with this investigation within ten (10) business days of that request. Failure to provide the requested information shall constitute a waiver of the Claim.

**§ 15.1.2.3** All written Claims for additional cost, additional time, or damages shall include the time of occurrence, location and other identifying factors and shall be supported, at a minimum, by letters, photographs, journals and diaries, instructions, or other pertinent and applicable records, as the Architect and Owner may require.

### **§ 15.1.3 Notice of Claims**

**§ 15.1.3.1** Claims by other parties or the Contractor, where the condition giving rise to the Claim is first discovered prior to expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the Owner and to the Initial Decision Maker with a copy sent to the Construction Manager and Architect, if the Architect is not serving as the Initial Decision Maker. Claims by the Contractor under this Section 15.1.3.1 shall be initiated within 15 days after occurrence of the event giving rise to such Claim or within 15 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.

**§ 15.1.3.2** Claims by other parties or the Contractor, where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party. In such event, no decision by the Initial Decision Maker is required.

**§ 15.1.3.3** An additional Claim made after any initial Claim has been filed with the Owner and Architect will not be considered unless submitted in a timely manner and in accordance with Article 15.

**§ 15.1.3.4** Claims by the Contractor must be made by written notice in accordance with the following procedures:

- .1 The Contractor may submit a claim concerning a matter properly noticed in accordance with the time requirements of this Contract.
- .2 Failure by the Contractor to furnish the required claim documentation within the time set forth above shall constitute waiver of the Contractor's right to compensation for such claim.
- .3 Contractor shall furnish three (3) certified copies of the required claim documentation, with a copy submitted to the Owner and Architect. The claim documentation shall be complete when furnished. The evaluation of the Contractor's claim will be based, among other things, upon the Owner project records and the Contractor's furnished claim documentation.
- .4 Claim documentation shall conform to Generally Accepted Accounting Principles and shall be in the following format:
  - A. General Introduction
  - B. General Background Discussion
  - C. Issues
    - 1) Index of Issues (listed numerically)
    - 2) For **each** issue:
      - (a) Background
      - (b) Chronology
      - (c) Contractor's position (reason for Owner's potential liability)
      - (d) Supporting documentation of merit or entitlement
      - (e) Begin each issue on a new page
  - D. All critical path method schedules, (as planned, monthly updates, schedule revisions, and as-built) along with the computer disks of all schedules related to the claim.
  - E. Productivity exhibits (if appropriate)
  - F. Summary of Issues and Damages
- .5 Supporting documentation of merit for each issue shall be cited by reference, photocopies, or explanation. Supporting documentation may include, but shall not be limited to, general conditions;

general requirements; technical specifications; drawings; correspondence; conference notes; shop drawings and submittals; shop drawing logs; survey books; inspection reports; delivery schedules; test reports; daily reports; subcontracts; fragmentary CPM schedules or time impact analyses; photographs; technical reports; requests for information; field instructions; and all other related records necessary to support the Contractor's claim.

- .6 Supporting documentation of damages for each issue shall be cited, photocopies, or explained. Supporting documentation may include, but shall not be limited to, any or all documents related to the preparation and submission of the bid; certified, detailed labor records including labor distribution reports; material and equipment procurement records; construction equipment ownership cost records or rental records; subcontractor or vendor files and cost records; service cost records; purchase orders; invoices; project as-planned and as-built cost records; general ledger records; variance reports; accounting adjustment records; and any other accounting materials necessary to support the Contractor's claim.
- .7 Each copy of the claim documentation shall be certified by a responsible officer of the Contractor in accordance with the requirements of these Contract Documents.

#### **§ 15.1.4 Continuing Contract Performance**

**§ 15.1.4.1** Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents.

**§ 15.1.4.2** The Contract Sum and Contract Time shall be adjusted in accordance with the Initial Decision Maker's decision, subject to the right of either party to proceed in accordance with this Article 15. The Architect will issue Certificates for Payment in accordance with the decision of the Initial Decision Maker.

**§ 15.1.5 Claims for Additional Cost.** If the Contractor wishes to make a Claim for an increase in the Contract Sum, notice as provided in Section 15.1.3 shall be given before proceeding to execute the portion of the Work that is the subject of the Claim. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

#### **§ 15.1.6 Claims for Additional Time**

**§ 15.1.6.1** If the Contractor wishes to make a Claim for an increase in the Contract Time, notice as provided in Section 15.1.3 shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay only one Claim is necessary.

**§ 15.1.6.2** If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated and had an adverse effect on the scheduled construction.

**§ 15.1.7 Waiver of Claims for Consequential Damages.** The Contractor waives all Claims against the Owner for consequential damages arising out of or relating to this Contract. This  
(Paragraphs deleted)

waiver includes, but is not limited to, damages incurred by the Contractor for principal office expenses, including the compensation of personnel stationed there, for losses of financing, business losses and reputation damage, and for loss of profit. This waiver also is applicable, without limitation, to all consequential damages due to Owner's termination of the Contract in accordance with Article 14, and the Contractor's sole rights to payment in the event of any termination of the Contract by the Owner are limited to the payments expressly set forth in Article 14.

#### **§ 15.1.8 Limitation and Waiver of Money Damages**

**§ 15.1.8.1** Notwithstanding anything else set forth in the Contract Documents or otherwise, the Owner shall not be liable to the Contractor and/or any Subcontractor for Claims or damages of any nature caused by or arising out of delays, impacts on schedule, schedule acceleration, schedule compression or by any breach of contract, delay in performance or other act of neglect by other Contractors or Subcontractors having Contracts for performance of any portion of Work. Except to the extent, if any, expressly prohibited by law the Contractor agrees not to make any Claim for such damages. The sole remedy against the Owner for delays shall be the allowance of additional time for completion of the Work, the amount of which shall be subject to the Claims procedure set forth herein. The Contractor understands that it hereby agrees not to make, and hereby waives, any Claim for damages for delay from any cause

whatsoever, including but not limited to, those resulting from increased labor or material costs; schedule acceleration, schedule compression, directions given or not given by the Construction Manager, Owner or Architect, including but not limited to scheduling and coordination of the Work; the Architect's preparation of Drawings and Specifications; the Architect's review of shop drawings and requests for instruction(s); or on account of any delay, obstruction or hindrance for any other cause whatsoever by the Owner, Construction Manager, Architect or any other Contractor on the project whether or not foreseeable or anticipated. The Contractor agrees that no monetary recovery may be obtained by the Contractor for any of the foregoing against the Owner, Construction Manager or the Architect based upon any reason, and it is emphasized that the Contractor's sole remedy for any of the foregoing shall be an extension of time, if appropriate.

## **§ 15.2 Initial Decision**

**§ 15.2.1** Claims by the Contractor, excluding those where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2 or arising under Sections 10.3, 10.4, and 11.5, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim. If an initial decision has not been rendered within 30 days after the Claim has been referred to the Initial Decision Maker, the party asserting the Claim may demand mediation and binding dispute resolution without a decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

**§ 15.2.2** The Initial Decision Maker will review Claims and within ten days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim, or (6) submit a schedule to the parties indicating when the Architect expects to take action.

**§ 15.2.3** In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision. The Initial Decision Maker may request the Owner to authorize retention of such persons at the Owner's expense.

**§ 15.2.4** If the Initial Decision Maker requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of the request, and shall either (1) provide a response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished, or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.

**§ 15.2.5** The Initial Decision Maker will render an initial decision approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties, the Construction Manager, and the Architect, if the Architect is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties but subject to mediation and, if the parties fail to resolve their dispute through mediation, to litigation.

**§ 15.2.6** Either party may file for mediation of an initial decision at any time, subject to the terms of Section 15.2.6.1.

**§ 15.2.6.1** Either party may, within 30 days from the date of receipt of an initial decision, demand in writing that the other party file for mediation. If such a demand is made and the party receiving the demand fails to file for mediation within 30 days of receipt thereof, then both parties waive their rights to mediate or pursue binding dispute resolution proceedings with respect to the initial decision.

**§ 15.2.7** In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.



§ 15.2.8 If a Claim relates to or is the subject of a mechanic's lien, the party asserting such Claim may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.

### § 15.3 Mediation

§ 15.3.1 Claims, disputes, or other matters in controversy arising out of or related to the Contract, except those waived as provided for in Sections 9.10.4, 9.10.5, and 15.1.7, shall be subject to mediation as a condition precedent to binding dispute resolution.

§ 15.3.2 The parties shall endeavor to resolve their Claims by mediation. A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order.

§ 15.3.3 Either party may, within 30 days from the date that mediation has been concluded without resolution of the dispute or 60 days after mediation has been demanded without resolution of the dispute, demand in writing that the other party file for binding dispute resolution. If such a demand is made and the party receiving the demand fails to file for binding dispute resolution within 60 days after receipt thereof, then both parties waive their rights to binding dispute resolution proceedings with respect to the initial decision.

§ 15.3.4 The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

### § 15.4 Litigation

§ 15.4.1 Claims that have not been satisfactorily resolved by other means shall be subject to litigation in accordance with law. The Contractor shall comply with any applicable statutory requirements regarding Notice of Claim and with any applicable Statute of Limitations provisions. In the event the Contractor serves a Notice of Claim to the Owner, the Owner may, as a condition precedent to litigation, require the Contractor to submit to an examination under oath by an attorney or other representative of the Owner, and to provide documentary evidence reasonably requested in connection with the examination. The venue of any litigation shall be New York State Supreme Court in the county in which the Project is located. The prevailing party of the litigation shall be entitled to reasonable attorneys' fees and necessary disbursements.

# Additions and Deletions Report for AIA® Document A232™ – 2019

This Additions and Deletions Report, as defined on page 1 of the associated document, reproduces below all text the author has added to the standard form AIA document in order to complete it, as well as any text the author may have added to or deleted from the original AIA text. Added text is shown underlined. Deleted text is indicated with a horizontal line through the original AIA text.

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## PAGE 1

*(Name, and location or address)*

Port Jervis CSD Additions & Alterations to PJMS  
Port Jervis Middle School  
9 Thompson Street  
Port Jervis, New York 12771

...

*(Name, legal status, and address)*

the Palombo Group  
195 Front Street  
First Floor  
Newburgh, New York 12550

...

Port Jervis City School District  
9 Thompson Street  
Port Jervis, New York 12771

...

*(Name, legal status, and address)*

Bernier, Carr & Associates Engineers, Architects, and Land Surveyors, P.C.  
798 Cascadilla Street  
Suite C  
Ithaca, New York 14850

## PAGE 3

**§ 1.1.1 The Contract Documents.** The Contract Documents ~~are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of the Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, include the Notice to Bidders, Information to Bidders, Form of Proposals, General Conditions, Specifications, Drawings, Addenda issued prior to execution of the Contract, other documents~~ Agreement between Owner and Contractor ("Agreement"), other Documents listed in the Agreement, and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive, or (4) a written order for a minor change in the Work issued by the Architect. Unless specifically enumerated in the Agreement, the Contract Documents do not include the advertisement or invitation to bid, Instructions to Bidders, sample forms, other information furnished by the Owner in anticipation of receiving bids or proposals, the Contractor's bid or proposal, or

portions of addenda relating to bidding or proposal requirements or negotiated after receipt of bids or execution of the Agreement, and when required by Governmental Agencies or Departments, appropriately inserted Certifications, Regulations, and Wage Rate Schedules.

**§ 1.1.2 The Contract.** The Contract Documents form the Contract for Construction. The Contract or Agreement represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Architect or the Architect's consultants, (2) between the Owner and the Construction Manager or the Construction Manager's consultants, (3) between the Owner and the Architect or the Architect's consultants, (4) between the Contractor and the Construction Manager or the Construction Manager's consultants, (5) between the Owner and a Subcontractor or Sub-subcontractor (6) between the Construction Manager and ~~the Architect~~, the Architect as a representative of the Owner, or (7) between any persons or entities other than the Owner and Contractor. The Construction Manager and ~~Architect~~ Architect, as a representative of the Owner, shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of their duties.

Subcontractors shall assume the same obligations to the Contractors as the Contractor has to the Owner and the Architect under General Conditions AIA A232-2019 relationships and responsibilities of the Contractor to the Owner or Architect as defined in General Conditions AIA A232-2019 shall become those of the Subcontractor to the Contractor.

**§ 1.1.2.1** Where the term "Agreement", "Contract" or "Prime Contract" is used in the General Conditions, Supplementary General Conditions, and other Contract Documents, it shall mean the separate Owner-Contractor Agreement between the Owner and each individual Prime Contractor identified in Conditions of the Contract (General, Supplementary and other conditions)."

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**§ 1.1.11 Miscellaneous Definitions:**

- .1 The term "Addendum/Addenda" shall mean Changes to the Contract Documents prior to the receipt of bids which are made part of the Agreement.
- .2 The term "Herein" shall mean the contents of the Contract Documents and/or the contents of the particular section where this term appears.
- .3 The term "Indicated" as used herein shall mean shown on the Drawings or described in the Contract Documents. Terms such as "Shown", "Noted", "Scheduled" and "Specified" have the same meaning as "As Indicated".
- .4 The term "Concealed" as used herein shall mean items hidden from sight in such locations as trenches, chases, shafts, furred spaces, walls, slabs, above ceilings and in crawl spaces or service tunnels.
- .5 The term "Exposed" as used herein shall mean not "concealed" as defined herein and the spaces behind normally closed doors such as interiors of cabinets.
- .6 The term "Product" as used herein shall include materials, systems and/or equipment.
- .7 The term "Furnish" as used herein shall mean furnish and deliver to the job site all products necessary that are connected with the Work including unloading, handling, transporting, unwrapping, and inspecting those products to be installed.
- .8 The term "Install" as used herein shall mean furnish all labor and perform all operations connected with assembly, erection, anchoring, installation of products or Work, curing, finishing, cleaning and similar operations including supplying all necessary tools, rigging and equipment to do the Work, and connect up, test, place in operation and service such products.
- .9 The term "Provide" as used herein shall mean furnish and install, without limitation, all labor, products, materials, equipment, transportation, services, etc., required to install, complete the Work, and/or to test and place in operation/service.
- .10 The term "Modifications" shall mean changes to the Contract Documents subsequent to the commencement of the work.
- .11 The term "Piping" as used herein shall mean pipe, rigid conduit, fittings, valves, hangers, and other accessories, which comprise a system.
- .12 The terms "proper", "satisfactory", "workmanlike" and words of similarly implied interpretation, judgment, or opinion, shall be understood to mean "in the opinion of the Architect".

- .13 As used herein, the terms "General Contractor", "GC" and "General Construction Contractor" have the same meaning.
- .14 As used herein, the terms "Mechanical Contractor" and "MC" shall mean the same thing.
- .15 As used herein, the terms "Plumbing Contractor" and "PC" shall mean the same thing.
- .16 As used herein, the terms "Electrical Contractor" and "EC" shall mean the same thing.
- .17 As used herein, the terms "Site Contractor" and "SC" shall mean the same thing.
- .18 As used herein, the terms "Roof Contractor" and "RC" shall mean the same thing.
- .19 As used herein, the terms "Asbestos Abatement Contractor" and "AAC" shall mean the same thing.
- .20 The term "project site" shall mean the space available to contractors at location of the project either exclusively or to be shared with other contractors for performance of Work.
- .21 The term "minimum requirements" shall mean indicated requirements are for a specific minimum acceptable level of quality/quantity, as recognized in the industry. Actual Work shall comply (within specified tolerances) or may exceed minimums within reasonable limits. Refer uncertainties to Architect before proceeding.
- .22 The term "basis of design" shall mean the material, product or manufacturer shown in the Contract Documents was selected to establish the minimum quality, performance and/or operation of the material or product.
- .23 The term "labeled" refers to classification by an approved Standards Agency.
- .24 As used herein, the term "Architect" shall also mean "Engineer" so duly licensed to "provide consulting services under a New York State License" and under Contract to provide professional services to the Owner."
- .25 The term "Warranty" shall mean a formal promise (guarantee) in writing that the contractor shall repair or replace a faulty product, material, or installation within the prescribed warranty period after Substantial Completion.
- .26 The term "General Conditions" shall mean the General Conditions of the Construction Contract, Construction Manager as Advisor Edition (AIA Document AIA A232-2019 Edition).

**§ 1.2.1** The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the ~~indicated~~ intended results.

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**§ 1.2.4** In the event of conflict or discrepancies among the Contract Documents, interpretations will be based on the following priorities:

- .1 Contract (Agreement).
- .2 Modifications.
- .3 Addenda, with those of later date having precedence over those of earlier date.
- .4 Instructions to Bidders.
- .5 General Conditions of the Contract for Construction, Construction Manager as Advisor Edition.
- .6 Division 01 of the specifications.
- .7 Divisions 02 thru 49 of the specifications and drawings.
- .8 Other documents specifically enumerated in the Contract as part of the Contract Documents.

In the case of conflict or discrepancies between drawings and Divisions 02 thru 49 of the specifications or within or among the Contract Documents and not clarified by addendum, the Architect will determine which takes precedence.

**§ 1.2.5** Scaling Drawings for dimensions, if done, is done at the Contractor's own risk. All dimensions shown on the Drawings are subject to verification of actual dimensions by the Contractor. It is the responsibility of the Contractor to verify all dimensions in the field to insure proper and accurate fit of materials and items to be installed. Before ordering any materials or doing any Work, the Contractor and each Subcontractor shall verify all existing conditions and measurements. No extra charge or compensation will be allowed on account of differences between actual dimensions and the dimensions indicated on the Drawings. Any differences which may be found shall be submitted to the Construction Manager and Architect for resolution before proceeding with the Work."



§ 1.2.6 Where items are specified by the use of a reference standard not bound in the specifications, the date of the reference standard shall be the latest edition as outlined in the Building Codes of New York State and/or except as specifically indicated otherwise.

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§1.4.1 In the event of conflicts or discrepancies among the Contract Documents, interpretations will be as outlined under § 1.2.4.

§ 1.4.2 In the event of inconsistencies within or between parts of the Contract Documents, or between the Contract Documents and applicable standards, codes and ordinances, the Contractor shall: (1) provide the better quality or greater quantity of Work, (2) comply with the more stringent requirement, or (3) either or both in accordance with the Architect's interpretation. The terms and conditions of this § 1.4.2, however, shall not relieve the Contractor of any of the obligations set forth in § 3.2 and § 3.7.

§1.4.2.1 On the Drawings, given dimensions shall take precedence over scaled measurements and large-scale drawings over small-scale drawings. Scaling Drawings for dimensions, if done, is done at the Contractor's own risk.

§1.4.2.2 Before ordering any materials or doing any Work, the Contractor and each Subcontractor shall verify measurements at the project site and shall be responsible for the correctness of such measurements. No extra charge or compensation will be allowed on account of differences between actual dimensions and the dimensions indicated on the Drawings. Any difference, which may be found, shall be submitted to the Architect for resolution before proceeding with the Work.

§1.4.2.3 If a minor change in the Work is found necessary due to actual field conditions, the Contractor shall submit detailed drawings of such departure for review by the Architect before initiating the change.

§ 1.4.3 The terms "knowledge", "recognize" and "discover", their respective derivatives and similar terms in the Contract Documents, as used in reference to the Contractor, shall be interpreted to mean that which the Contractor knows (or should know), recognizes (or should recognize) and discovers (or should discover) in exercising the care, skill and diligence required by the Contract Documents. The expression "reasonably inferable" and similar terms in the Contract Documents shall be interpreted to mean reasonably inferable by a Contractor familiar with the Project and exercising the care, skill and diligence required of the Contractor by the Contract Documents.

§ 1.4.4 The phrase "persistently fails" and other similar expressions, as used in reference to the Contractor, shall be interpreted to mean any combination of acts or omissions, which causes the Owner or the Architect to reasonably conclude that the Contractor will not complete the Work within the Contract Time, for the Contract Sum or in substantial compliance with the requirements of the Contract Documents.

§ 1.4.5 In the event of inconsistencies within or between parts of the Contract Documents, or between the Contract Documents and applicable standards, codes and ordinances, the Architect shall be the sole and final interpreter and will issue a written decision to the Owner and the Contractor within a reasonable time of written notification. The Architect's decision shall be conclusive and final.

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§ 2.1.2 The Owner shall furnish to the Contractor, within fifteen days after receipt of a written request, information necessary and relevant for the Contractor to evaluate, give notice of, or enforce mechanic's lien rights. Such information shall include a correct statement of the record legal title to the property on which the Project is located, usually referred to as the site, and the Owner's interest therein.

...

§ 2.2.2 Following commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract only if (1) the Owner fails to make payments to the Contractor as the Contract Documents require; (2) the Contractor identifies in writing a reasonable concern regarding the Owner's ability to make payment when due;

or (3) a change in the Work materially changes the Contract Sum. If the Owner fails to provide such evidence, as required, within fourteen days of the Contractor's request, the Contractor may immediately stop the Work and, in that event, shall notify the Owner that the Work has stopped. However, if the request is made because a change in the Work materially changes the Contract Sum under (3) above, the Contractor may immediately stop only that portion of the Work affected by the change until reasonable evidence is provided. If the Work is stopped under this Section 2.2.2, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided in the Contract Documents.

**§ 2.2.3** After the Owner furnishes evidence of financial arrangements under this Section 2.2, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor. Where the Owner has designated information furnished under this Section 2.2 as "confidential," the Contractor shall keep the information confidential and shall not disclose it to any other person. However, the Contractor may disclose "confidential" information, after seven (7) days' notice to the Owner, where disclosure is required by law, including a subpoena or other form of compulsory legal process issued by a court or governmental entity, or by court or arbitrator(s) order. The Contractor may also disclose "confidential" information to its employees, consultants, sureties, Subcontractors and their employees, Sub-subcontractors, and others who need to know the content of such information solely and exclusively for the Project and who agree to maintain the confidentiality of such information.

**§ 2.2.4** Where the Owner has designated information furnished under this Section 2.2 as "confidential," the Contractor shall keep the information confidential and shall not disclose it to any other person. However, the Contractor may disclose "confidential" information, after seven (7) days' notice to the Owner, where disclosure is required by law, including a subpoena or other form of compulsory legal process issued by a court or governmental entity, or by court or arbitrator(s) order. The Contractor may also disclose "confidential" information to its employees, consultants, sureties, Subcontractors and their employees, Sub-subcontractors, and others who need to know the content of such information solely and exclusively for the Project and who agree to maintain the confidentiality of such information.

**§ 2.3.1** Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities. Unless otherwise provided under the Contract Documents, the Owner, assisted by the Construction Manager, shall secure and pay for the building permit. The Owner shall make available for inspection, upon request, that field survey or testing information of existing conditions, which is known to be available, and which is held by the Owner at their offices. Such records are not Contract Documents and the Owner makes no representation as to their accuracy or completeness.

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**§ 2.3.5** The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. The Contractor shall be entitled to rely on the reasonable accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

**§ 2.3.6** The Owner shall ~~may~~ furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner ~~shall~~ may also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such information or services.

**§ 2.3.7** Unless otherwise provided in the Contract Documents, the Owner shall furnish to ~~the Contractor one copy of the Contract Documents for purposes of making reproductions pursuant to Section 1.5.2.~~ each Prime Contractor the following:

- .1 Copies for Construction: The Prime Contractors will each be furnished without charge up to two (2) sets of Contract Drawings, Project Manuals and Bid Addendums for use during construction for their own use and the use of their Subcontractors.
- .2 Owner shall furnish additional sets upon a Contractor's written request. Such additional sets will be provided at the cost of printing, postage and handling. Partial sets will NOT be provided.
- .3 Subcontractors and other entities desiring copies of Drawings and other contract Documents shall obtain them from the respective Prime Contractor.

...

§ 2.3.9 The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, the Contractors' means, methods, techniques, sequences, or procedures of construction or the safety precautions and programs incident thereto, or for any failure of the Contractor to comply with laws or regulations applicable to the furnishing or performance of the Work. Owner will not be responsible for Contractor's failure to perform or furnish the Work in accordance with the Contract Documents.

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§ 2.5.1 In the event Contractor fails, refuses or neglects to perform closeout obligations, including without limitation performance of incomplete items as attached to the Certificate of Substantial Completion, within forty-five (45) days following the date of Substantial Completion or time frame mutually agreed upon between Owner and Prime Contractor, the Owner may, without further notice (except to inform the Contractor its attempt to cure is inadequate) and without prejudice to other remedies the Owner may have, correct such deficiencies. In such case, an appropriate Change Order shall be issued deducting from Payments then or thereafter due to Contractor the cost of correcting such deficiencies. Contractor shall be liable to the Owner for any additional costs, including without limitation, those charged by Architect, Attorneys, or others attributable to such failure, refusal, or neglect.

### § 2.6 Owner's Rights for Use of Premises

§ 2.6.1 Whether Work of various Contractors is or is not partially or fully completed, the premises (site and buildings) are the property of the Owner who shall have certain rights and privileges in connection with use of same.

§ 2.6.2 In such event, Contractor whose unfinished Work is performed subsequently shall be responsible for the prevention of any damage to such Owner's installation. Such use or occupancy by the Owner shall in no instance constitute acceptance of any of the Work.

...

§ 3.1.1.1 Where the words "Contractor", "Prime Contractor", or any reference to "each Contractor" occurs in the Contract Documents, they shall mean the person, firms or organization having a Contract for the Work as set forth in the Agreement.

§ 3.1.1.2 The Contractor represents to the Owner that it possesses the skill, experience, and resources to perform the Work competently and diligently in an orderly and safe fashion and in accordance with the anticipated milestone and/or completion date(s) as applicable.

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§ 3.2.2.1 The Contractor shall promptly notify the Construction Manager and Architect, in writing, of any inconsistencies or errors to provide the Architect ample time for observation, investigation, detail drawings, etc.

§ 3.2.2.2 All Contractors submitting bid proposals shall be presumed to have examined the site to consider fully all conditions, which may have a bearing on the Work, and to have accounted for these conditions in their bid proposals.

§ 3.2.2.3 When required, off-site storage is the responsibility of the Contractor.

§ 3.2.2.4 The exactness of grades, elevations, dimensions, or locations indicated on the Drawings of Work installed by others is not guaranteed by the Construction Manager, Architect, or the Owner.

§ 3.2.2.5 Except as to any reported errors, inconsistencies and to concealed or unknown conditions referred to in § 3.7.4, by executing the Agreement, the Contractor represents the following:

- .1 The Contract Documents are sufficiently complete and detailed for the Contractor to (1) perform the Work required to produce the results intended by the Contract Documents and (2) comply with all the requirements of the Contract Documents.

- .2 The Work required by the Contract Documents, including, without limitations, all construction details, construction means, methods, procedure and techniques necessary to perform the Work, use of materials, selection of equipment and requirements of product manufacturers are consistent with: (1) good and sound practices within the construction industry; (2) generally prevailing and accepted industry standards applicable to Work; (3) requirements of any warranties applicable to the Work; and (4) all laws, ordinances, regulations, rules and orders which bear upon the Contractor's performance of the Work.

**§ 3.2.2.6** The Contractor shall satisfy itself as to the accuracy of all grades, elevations, dimensions, and locations indicated on the Drawings. Where the Work of this Contract connects or interfaces with existing or other Work, Contractor shall verify at the site all conditions of such existing or other Work. Any errors due to the Contractor's failure to verify such information shall be promptly remedied by the Contractor at no additional cost to the Owner.

**§ 3.2.2.7** Before ordering any materials or doing any Work, the Contractor and each Subcontractor shall verify all existing conditions and measurements. Any differences, which may be found, between actual measurements and dimensions indicated on the Drawings shall be submitted to the Architect for resolution before proceeding with the Work. No extra compensation will be allowed for such discrepancies.

**§ 3.2.3** The Contractor is not required to ascertain that the Contract Documents are in accordance with-If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall submit Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner, subject to section 15.1.7, as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Construction Manager and Architect any nonconformity discovered by or made known to the Contractor as a request for information submitted to Construction Manager in such form as the Construction Manager and Architect may require and lawful orders of public authorities.

**§ 3.2.4** If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall submit Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner, subject to section 15.1.7, as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities.

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### **§ 3.3.1.1** Laying out the work:

- .1 Each Contractor shall carefully lay out its Work in accordance with the Contract Documents and shall coordinate its Work with existing and new Work and it shall verify all lines and levels indicated in the Contract Documents that affect its Work.
- .2 Adjustments required to suit field conditions shall be made only after the Construction Manager's and Architect's review. Each Contractor shall be responsible for the accuracy of layout and shall correct at its own expense any Work that his forces have laid out incorrectly.
- .3 Where equipment lines or piping and/or conduit are shown diagrammatically, the Contractor shall be responsible for the coordination and orderly arrangement of the various lines of piping and conduit included in the Work of its Contract. Contractor shall coordinate its work and prevent all interferences between equipment, lines of piping, architectural features, and avoid any unsightly arrangements in the exposed areas.



...

**§ 3.3.4 Shutdowns:** Such Work as connections to existing sewers, plumbing, heating, and electric systems, shall be done at a time agreeable to the Owner and Construction Manager and shall be determined and agreed to well in advance of the actual doing of such Work so as to interfere as little as possible with the operation and use of existing facilities. Shutdowns must be coordinated through the Construction Manager 48 hours prior to shut down. The continued uninterrupted operation of all facilities is essential. If any existing facilities must be interrupted, the Contractor for the Work shall provide all necessary temporary facilities and connections necessary for maintaining existing facilities. No mechanical, heating, plumbing, sprinkler, or electric services shall be interrupted at any time, except as approved in advance by the Owner. All communication systems must be maintained without interruption. As much related work as possible shall be performed prior to shut-downs, so as to minimize the period of shut-down. All material and manpower to do the work involved shall be at the job prior to interruption of services.

**§ 3.3.5** If the Work involves a School facility, the Contractor represents that it is familiar with and shall adhere to the "Uniform Standards for School Construction and Maintenance Projects" set forth at 8 New York Code of Rules and Regulations §155.5 (8 NYCRR 155).

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**§ 3.4.4 Equivalent Products:** Except as otherwise specified, whenever a material, article or piece of equipment is identified on the Drawings or in the Specifications by reference to manufacturer's or vendors' names, catalog numbers, or the like, it is so identified for the purpose of establishing a standard, and any material, article, or piece of equipment of other manufacturers or vendors which will perform adequately the duties imposed by the general design may be considered equally acceptable provided the material, article, or piece of equipment so proposed is, in the opinion of the Architect, of equal substance, appearance, size, function and performance. Such proposed product shall not be purchased or installed until approved by the Architect.

- .1** The Owner and the Architect will consider a formal request for the substitution of a product in place of the one specified only under the conditions set forth in the General Requirements (Contract, & General Conditions) on "EQUIVALENCY", of the Specifications) for each proposed substitution.
- .2** The Architect will be allowed ten (10) business days to evaluate each proposed substitution. The Architect will be the sole judge of equivalence, and no substitution shall be ordered, installed or utilized without the Architect's review process having been completed and the product accepted by written notification.
- .3** Owner may require Contractor to furnish at the Contractor's expense a special performance warranty or other surety with respect to any substitution.
- .4** The Architect will record time required by the Architect and the Architect's consultants in evaluating substitutions proposed by the Contractor and in making changes in the Contract Documents occasioned thereby. Whether or not the Architect accepts a proposed substitution, Contractor shall reimburse the Owner for the charges of the Architect and the Architect's Consultants for evaluating each proposed substitution. In the event Owner is not obligated to pay Architect for such costs incurred by the Architect in evaluating proposed Substitutions as Additional Services. Contractor shall pay Architect's additional cost for such evaluation directly to Architect as a third-party beneficiary under this Contract.
- .5** Full explanation of the proposed substitution and submittal of all supporting data including technical information, catalog cuts, warranties, test results, installation instructions, operating procedures, and other like information necessary for a complete evaluation of the substitution.
- .6** Reasons the substitution is advantageous and/or necessary, including the benefits to the Owner and Work in the event substitution is acceptable.
- .7** The adjustment, if any, in the Contract Sum in the event the substitution is acceptable.
- .8** The adjustment, if any, in the time of completion of the contract and the construction schedule in the event the submission is acceptable.
- .9** Contractor shall demonstrate that the proposed substitution conforms and meets all the requirements of the pertinent Specifications and the Drawings; and the Contractor accepts the warranty and correction obligations in connection with the proposed substitution as if originally specified by the Architect. Proposals for substitutions shall be submitted to the Architect. Architect will review and make an informed decisions on proposed substitution within ten (10) business days.

- .10 Substitutions and alternates may be rejected with or without written explanation.
- .11 No substitute material shall be purchased or installed by the Contractor without the Architect's written approval. Material that, in the Architect's opinion, is inferior to that specified or is unsuited for the intended use will be rejected. The Architect's decision regarding acceptance of equals shall be final. The risk of whether a proposed substitution will be accepted is borne by the Contractor. No requests for substitution will be considered unless the Architect determines that such substitution is in the best interest of the Owner under the conditions set forth in the Contract Documents.
- .12 By making requests for substitutions the Contractor:
- a. Represents that the Contractor has personally investigated the proposed substitute product and determined that it is equal or superior in all respects to that specified;
  - b. Represents that the Contractor will provide the same warranty for the substitution that the Contractor would provide for the specified product;
  - c. Certifies that the cost data presented is complete and includes all related costs under this Contract except the Architect's redesign costs, and waives all claims for additional costs related to the substitution which subsequently become apparent;
  - d. Will coordinate the installation of the accepted substitution, making such changes as may be required for the Work to be complete in all respects; and,
  - e. Will reimburse Owner for additional costs from claims by other Prime Contractors resulting from incorporation of the requested substitution.
- .13 If the Project involves Public Work subject to N.Y. General Municipal Law §103, whenever a material, article, device, piece of equipment or type of construction is identified on the Drawings or in the Specifications by reference to manufacturers' or vendors' names, trade names, catalog numbers, or similar specific information, it is so identified for the purpose of establishing a standard of quality, and such identification shall not be construed as limiting competition. In such event, any material, article, device, piece of equipment or type of construction of other manufacturers or vendors that will perform the duties imposed by the general design will be considered equally acceptable provided the material, article, device, piece of equipment or type of construction so proposed is completely described in submittals as set forth herein and is, in the opinion of the Architect, of equal substance, appearance, and function.
- .14 The burden of proof to show equivalency or equal quality shall be that of the Contractor. Submissions for this purpose shall follow the format for Submittals. Submissions shall be complete, informative & address all data required in the base bid specification in such a manner that the Architect can, without unusual effort or exhaustive research, review and make a judgment as to its equivalency. Excessive or unusual effort required of the Architect by the Contractor to review, research and qualify items proposed as equivalents shall be charged to the Contractor at the current billing rate of the Architect.
- .15 Proposed equivalents or substitutions will not be considered unless requested as set forth herein. Mere express or implied indication of equivalents or substitutions will not be considered without full compliance these requirements.
- .16 The Contractor shall indicate the kind, type, brand or manufacturer that is to be substituted for the specified item. The Contractor will submit information describing in specific detail the differences in quality, performance, cost and time between the substitution and the item that was specified. This information shall include notification of possible changes to the Work or to work of other contracts."

§ 3.4.5 A shortage of labor in the industry shall not be accepted as an excuse for not properly manning the project at each site.

§ 3.4.6 Contractor shall be responsible for the care and protection of all equipment and materials for his work of this project, including equipment and material furnished by the Owner.

§ 3.4.7 Contractor warrants that it has good title to all materials used in the Work of this Contract. No materials or supplies shall be furnished by Contractor or any of its Subcontractors that are subject to any chattel mortgage, conditional sale or other agreement by which an interest is retained by the seller.

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§ 3.5.1.1 Neither final payment, nor provision in Contract Documents, nor partial or entire occupancy of premises by Owner shall constitute an acceptance of Work not done in accordance with Contract Documents or relieve the Contractor of liability in respect to any express warranties or responsibility for faulty materials or workmanship.

§ 3.5.1.2 In emergencies occurring during the warantee period, the Owner may correct any defect immediately and charge the cost to the Contractor. The Owner shall at once notify the Contactor, who may take over the Work and make any corrections remaining after his forces arrive at the Work. Any repair work not started within seven (7) days following notice to the Contractor of any defect shall be considered an emergency.

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~~The Except as otherwise specified, the Contractor shall pay sales, consumer, use and similar taxes for the Work or portions thereof provided by the Contractor that are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.~~

§ 3.6.1 The OWNER is exempt from the payment of Sales and Compensating Use Taxes of the State of New York and of cities and counties, on all materials, equipment and supplies to be sold to the OWNER pursuant to this Contract. The exemption does not, however, apply to tools, machinery, equipment, or other property leased by or to the contractor or to a Sub-Contractor and the Contractor and its Sub-Contractor. Also exempt from such taxes are purchases by the CONTRACTOR and its subcontractors of materials, equipment and supplies to be sold to the OWNER pursuant to its Contract, including tangible personal property to be incorporated in any structure, building or other real property forming part of the Project." The exemption does not, however, apply to tools, machinery, equipment, or other property leased by or to the CONTRACTOR or a Sub-Contractor and the CONTRACTOR and its Sub-Contractor shall be responsible for any pay, any and all applicable taxes, including Sales and Compensating Use Taxes, on such leased tools, machinery, equipment or other property, and for materials not incorporated into the project.

§ 3.7.1 Unless otherwise provided in the Contract Documents, the Owner, assisted by the Construction Manager, shall secure and pay for the building permit. The Each Contractor shall secure and pay for other permits, fees, licenses, and inspections by government agencies necessary for all required permits, governmental fees, licenses, certificates of inspection, of occupancy, of Underwriters, and of all other required certificates for the Work, necessary for the proper execution and completion of the Work that Work, which are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded which are legally required at the time the bids are received. Each Contractor shall be responsible for complying with any and all requirements specified with each Permit.

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**§ 3.7.4 Concealed or Unknown Conditions.** If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner, Construction Manager, and the Architect before conditions are disturbed or affected work is performed and in no event later than ~~14~~7 days after first observance of the conditions. The Architect and Construction Manager will promptly investigate such conditions and, if the Architect, in consultation with the Construction Manager, determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend that an equitable adjustment be made in the Contract Sum or Contract Time, or both. If the Architect, in consultation with the Construction Manager, determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner, Construction Manager, and Contractor, stating the reasons. If the Owner or Contractor disputes the Architect's determination or recommendation, either party may submit a Claim as provided in Article 15.

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- .2** Contractor's costs for ~~unloading and handling at the site, labor, installation costs, overhead, profit, and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances; and~~

- .3 whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.
- .4 Value of allowances shall also include:
- All costs for plant, equipment and labor for unloading, handling and storage at the site;
  - Any costs for protection;
  - All costs for associated demolition work;
  - Costs for removal and off-site disposal of demolished materials;
  - Cost for labor, materials and equipment for installation and finishing, except where labor is specified not to be a part of the allowance.
  - Other expenses required to complete the installation.

...

**§ 3.9.4** The Contractor shall not reduce or terminate supervision of the Work.

**§ 3.9.5** If, for any reason, the Contractor takes an action resulting in any of the changes noted in § 3.9, which negatively affects the projects progress or quality, or resulting in additional work by the Owner or their agents, the Owner has the right to charge the Contractor all costs associated with these efforts including the costs of legal, Construction Management Services, and Architectural services. The Owner shall notify the Contractor in writing of their intent to back charge as a result of lack of supervision.

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**§ 3.12.5.1** No extension of time will be granted to the Contractor because of failure to have shop drawings, product data, and samples submitted in ample time to allow for review by the Construction Manager, Architect or their Consultants.

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**§ 3.12.10.2.1** If it is the position of the Contractor, or his licensed design professional, that the Owner and Architect have not provided all performance and design criteria, the Contractor shall request additional criteria in writing before proceeding with the professional services described in § 3.12.10. Proceeding with the professional services shall be evidence that the Owner and Architect have provided all necessary performance and design criteria.

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**§ 3.13.1.1** Use of site and building:

- .1 Each Prime Contractor shall cooperate with the Owner in making available for the Owner's use, areas of the completed or partially completed building(s) or site as provided for in Article 9, Paragraph 9.9. The Owner shall have the right to take possession of and to use any completed or partially completed portions of the building or site even though the time of completing the entire Work or such portion of the Work may not have expired. Such use shall not constitute acceptance thereof. Such occupancy shall in no way abrogate any specified warranties or guaranties for materials, workmanship or operation of equipment pertaining to the occupied portions.
- .2 Each Prime Contractor shall cooperate with the Owner in making available for the Owner's use such building services as heating, ventilating, cooling, water, lighting and telephone for the space or spaces to be occupied, and if the equipment required to furnish such services is not entirely completed at the time the Owner desires to occupy the aforesaid space or spaces, the Contractor shall make every reasonable effort to complete such part of his Work as soon as possible to the extent that the necessary equipment can be put into operation and use.
- .3 Mutually acceptable arrangements shall be made as to the warranties or guaranties affecting all Work associated therewith.
- .4 Such occupancy or use shall not commence prior to a time mutually agreed to by the Owner and Contractor and to which the insurance company or companies providing the property insurance have consented by endorsement to the policy or policies. (See 11.3.1.5) Such occupancy shall be documented with an appropriately executed Certificate of Substantial Completion.



.5 See Article 2, Paragraph 2.5 for special situations.

### **§ 3.13.3 Protection of Building Occupants**

**§ 3.13.3.1** Owner or Tenant occupied areas of the building shall always comply with the minimum requirements necessary to maintain a Certificate of Occupancy.

**§ 3.13.3.2** General safety and security standards for this project include:

- .1 All construction materials shall be stored in a safe and secure manner;
- .2 Fences shall be maintained around construction supplies or debris.
- .3 Gates in temporary fences shall always be locked unless a worker is in attendance to prevent unauthorized entry to the Contract areas.
- .4 During exterior renovation work, overhead protection shall be provided for any sidewalks or areas immediately beneath the work site or such areas shall be fenced off and provided with warning signs to prevent entry.
- .5 Workers shall wear photo-identification badges at all times for identification and security purposes.
- .6 Separation of Construction Areas: Construction areas that are under the control of a Contractor and therefore not occupied by Owner or Tenants shall be separated from occupied areas. Provisions shall be made to prevent the passage of dust and contaminants into occupied parts of the building. Periodic inspection and repairs of the contaminant barriers must be made to prevent exposure to dust or contaminants. Each Contractor working inside the buildings shall temporarily seal doorways enclosing their work area, using heavy duty plastic, duct tape, etc. Repairs of the plastic and tape must be made in the event the tape becomes loose or the plastic is cut or torn.
- .7 Type "X" Gypsum Board shall be used in exit ways or other areas that require fire rated separation.
- .8 Plastic sheeting may be used only as a vapor, fine dust, or air infiltration barrier, and shall not be used to separate occupied spaces from construction areas.
- .9 A specific stairwell and/or elevator should be assigned for construction worker use during work hours. In general, workers may not use corridors, stairs, or elevators designated for Owner or Tenants.
- .10 Large amounts of debris must be removed by using enclosed chutes or a similar sealed system. There shall be no movement of debris through halls of occupied spaces of the building. No material shall be dropped or thrown outside the walls of the building.
- .11 All parts of the building affected by renovation activity shall be cleaned at the close of each workday, including but not limited to cleaning and disinfection in connection with infectious disease exposure precautions, whether permanent or temporary, required or suggested by federal, state or local governmental authorities.
- .12 Fire and hazard prevention: Areas of buildings under construction that are to remain occupied shall maintain a Certificate of Occupancy.

**§ 3.13.3.3** Noise Abatement During Construction:

- .1 Construction and maintenance operations shall not produce noise in excess of 60 dba in occupied spaces or shall be scheduled for times when the building is not occupied, or acoustical abatement measures shall be taken.

**§ 3.13.3.4** Control of airborne contaminants during construction:

- .1 The Contractor shall be responsible for the control of the chemical fumes, gases, and other contaminants produced by their welding, gasoline or diesel engines, roofing, paving, painting, etc. to ensure they do not enter occupied portions of the building or air intakes.
- .2 The Contractor shall be responsible to ensure that its activities and materials which result in off-gassing of volatile organic compounds such as glues, paints, furniture, carpeting, wall covering, drapery, etc. are scheduled, cured, or ventilated in accordance with manufacturer's recommendations before a space can be occupied.
- .3 Large and small asbestos abatement projects as defined by 12NYCRR56 shall not be performed in occupied areas of the building. Any area of the building where abatement of hazardous materials is

being performed must be sealed off in an air-tight fashion from the remainder of the building in accordance with NY Code Rule 56 and other applicable laws and regulations.

- .4 The requirements of Section 155 of the Regulations of the New York State Commissioner of Education apply to this Project. Reference Section 01 3529.1 Life Safety Requirements During School Construction and the Official Compilation of Codes, Rules and Regulations of the State of New York, Title 8 Education Department, Chapter II Regulations of the Commissioner, Subchapter J. Buildings and Transportation Part 155 Education Facilities.

§ 3.13.4 Each Contractor shall be responsible for complying with Occupational Safety and Health Administration (OSHA) and U.S. Department of Health and Human Services' Center for Disease Control and Prevention (CDC) on COVID-19 Guidance for safe work practices, use of personal protective equipment (PPE), social distancing, cleaning, and sanitizing of the worksite. These protocols shall be incorporated into each Contractor's safety work plan.

§ 3.13.5 All construction workers and suppliers are to execute a Health Declaration Form/Questionnaire each day prior to gaining access to one of the construction sites during the COVID-19 crisis.

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§ 3.14.2 The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner, Separate Contractors, or of other Contractors by cutting, patching, or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter construction by the Owner, Separate Contractors, or by other Contractors except with written consent of the Construction Manager, Owner, and such other Contractors or Separate Contractors. Consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold, from the Separate Contractors, other Contractors, or the Owner, its consent to cutting or otherwise altering the Work. In order to eliminate cutting and patching as much as possible, each Prime Contractor shall coordinate the installation of sleeves and inserts with the other Prime Contractors affected and shall give proper and detailed instructions to others where Work may be affected by their Work, with adequate notice prior to the erection of new Work. Cutting and patching Work as required to install new Work or remove existing Work shall be done carefully and neatly with as little damage as possible.

§ 3.14.3 Unless otherwise stated in Specification Section 01 7329 Cutting and Patching, each Prime Contractor shall perform all cutting and patching as required to complete their Work. Cutting is to be done neatly with minimal damage to surrounding materials and holes to be patched and/or fire safe as required to the satisfaction of the Construction Manager, Architect and Owner.

§ 3.14.4 Any costs caused by defective or ill-timed Work shall be borne by the Contractor responsible, therefore. Any Contractor who is required to cut and patch its new Work to provide conditions for other contractors to complete their new Work and who was not given adequate prior notice of the conditions required for completion of such Work before doing its Work, shall charge the Contractor in default the documented cost of the cutting and patching Work plus 15% for overhead and profit unless otherwise specified.

§ 3.14.5 Cutting and patching of any Work shall be made in such a manner as to not breach any provisions of any guarantee or warranty on existing Work left in place or guarantee or warranty required for his new Work. Patching of Work shall match existing adjacent surfaces and patch work shall be disguised completely to hide any trace of patching.

§ 3.14.6 Refer to Contract (General, Supplementary and other conditions) Section 01 7329 Cutting and Patching for more information.

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§ 3.15.3 Each Prime Contractor is solely responsible for clean-up to the Construction Manager's and Owner's satisfaction. Further, each Contractor shall fully cooperate with all other Contractors in the coordinated effort to meet the Owner's time and quality requirements for clean-up.

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§ 3.18.1 To the fullest extent permitted by law, the Contractor shall defend, indemnify and hold harmless the Owner, Construction Manager, Architect, Construction Manager's and Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and Architect, and the Construction Manager, and each of their consultant's, officers, board members, agents, and employees, from and against any suits, claims, damages, losses, or expenses, including but not limited to attorneys' fees, fees and litigation costs, arising out of or resulting from performance of the Work, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), including suits, claims, damages, losses or expenses attributable to any bodily injury, sickness, disease, or death, or injury to or destruction of any tangible property, including loss of use resulting therefrom, or any statutory violations, but only to the extent caused by the negligent acts or omissions of the Contractor, a in whole or in part by the act, omission, fault, or statutory violation of the Contractor, a subcontractor, or any person or entity directly or indirectly employed by them, or any person or entity for whose acts they may be liable or arises out of operation of law as a consequence of any act or omission of the Contractor, any Subcontractor, anyone directly or indirectly employed by any of them, or anyone for whose acts they any of the above may be liable, regardless of whether or not such claim, damage, loss, or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity that would otherwise exist as to a party or person described in this Section 3.18, any of them has been negligent. This provision shall not be construed to require the Contractor to indemnify the Owner, Architect or Construction Manager for the negligence of the Owner, Architect or Construction Manager, respectively, to the extent such negligence, in whole or in part, proximately caused the damages resulting in the suit, claim, damage, loss or expense.

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§ 3.18.3 In any and all Claims against the Owner, Construction Manager, or the Architect or their agents or employees by third parties, the indemnification obligation under § 3.18 shall apply and shall not be limited by limitation or amount of or type of damages, compensation, or benefits payable by or for the Contractor or Subcontractors.

§ 3.18.4 Contractor shall comply with, and cooperate with, Construction Manager, Architect and Owner in complying with legal requirements. Among other things, Contractor shall be responsible for performing corrective Work within any abatement periods prescribed by governmental entities including but not limited to OSHA, appealing from decisions or orders, requesting extensions on abatement periods, and furnishing such information or evidentiary material as may be necessary or as may be requested by Construction Manager, Architect or Owner to fully protect the rights and interests of Owner, Construction Manager, and Architect with respect to possible, threatened or pending proceedings or orders.

### **§ 3.19 Contractor's Responsibilities**

§ 3.19 Contractor agrees, in addition to all other responsibilities and duties under the Contract:

§ 3.19.1 To use all necessary means to discover and to notify the Construction Manager, Architect and Owner in writing of any defect in other Work upon which the satisfactory performance of the Work may depend, and to allow a reasonable amount of time for remedying such defects. If Contractor should proceed with the Work, Contractor shall be considered to have accepted and be responsible for such other Work unless over Contractor's written objection, Contractor shall have proceeded pursuant to written instructions from the Architect.

§ 3.19.2 To submit to Owner, Construction Manager, and Architect promptly upon request, information with respect to the names, responsibilities and titles of the principal members of Contractor's staff.

§ 3.19.3 To take all steps necessary to avoid labor disputes; and to be responsible for any delays and damages to Owner caused by such disputes.

§ 3.19.4 To pay for costs of repair to other Work attributable, in whole or in part, to the fault or negligence of Contractor and Owner's charges for removal of rubbish attributed to Contractor, and any clean-up related to Contractor or the Work, as determined by Owner or Construction Manager.

§ 3.19.5 To comply with all legal requirements; to appear at hearings, proceedings or in court in respect of such compliance or in respect of violations or claimed violations of legal requirements; to pay any fines or penalties imposed for said violations; and to pay all legal fees, fines and penalties incurred by or imposed upon Owner relating to Contractor's compliance, violations or claimed violations. Without limiting the foregoing, Contractor shall appear

at hearings, proceedings and/or in court and consent to its substitution as a party defendant in respect of all summonses and claimed violations arising out of or relating to the Work.

**§ 3.19.6** Not to display on or about the Project site any sign, trademark or other advertisement without written consent of the Owner.

**§ 3.19.7** Each Contractor's Subcontractor and supplier shall be bound by all Contract Documents to the same extent and with the same effect as if the Subcontractor or supplier were the Contractor. Contractor shall cause Subcontractors and suppliers to comply with all the Contract Documents. Contractor shall be responsible for all the acts, work, material and equipment of its Subcontractors and supplier and all persons either directly or indirectly employed by any of them.

**§ 3.19.8** To:

- .1** Furnish a competent and adequate staff and use its best skill and attention for the proper administration, coordination, supervision, and superintendence of the Work;
- .2** Organize the procurement of all materials and equipment so that they will be available at the time needed for the Work;
- .3** Keep an adequate force of skilled workers on the job to complete the Work in strict accordance with all requirements of the Contract Documents;
- .4** Maintain throughout the duration of the Work a competent superintendent and any necessary assistants, all of whom shall be acceptable to Owner and shall not be changed without the consent of the Owner;
- .5** Enforce discipline and order and not to employ at the Project any unfit person or anyone not skilled in the task assigned; and
- .6** Provide supervision by experts in all aspects of the application of the materials, equipment or system being fabricated and installed.

**§ 3.19.9** That if any Work is performed which is contrary to legal requirements, to promptly make all changes as required and take all other corrective action to comply therewith and pay all costs arising there from.

**§ 3.19.10** That any review or consideration by Owner, Construction Manager, or Architect of any method of construction, invention, appliance, process, article, device or material of any kind shall be for its general adequacy for the Work and shall not be an approval for the use thereof by Contractor in violation of any patent or other rights of any third person. Owner and Architect shall in no event be deemed to have reviewed or to have been required to review or consider the means and methods of construction, all of which are chosen exclusively by the Contractor.

**§ 3.19.11** That if any provision of the Contract Documents conflicts with any agreement among members of trade associations, or with a union or labor council which regulates the work to be performed by a particular trade, to reconcile such conflict without delay or damage to Owner. In the event the progress of the Work is delayed by such conflict, Architect may require that other material or equipment of equal or better kind and quality be provided at no additional cost to Owner. This right of substitution shall not limit other rights that the Owner may have concerning such delay.

**§ 3.19.12** In accordance with local or NY State Laws and Regulations, the Contractor, including any of its employees, subcontractors, suppliers or materialmen or other representatives, shall not use tobacco in any form on the premises during the course of the Work. Contractors failing to abide by this requirement shall be prohibited from working at the site and shall be responsible for any consequent delays or added costs to the Owner as a result of such noncompliance.

**§ 3.19.13** The Contractor shall provide reasonable and visible identification for each employee, Subcontractor, or other person at the Project site, and shall, upon request of the Owner, make available a list of names of those employees, Subcontractors or others working under the direction of the Contractor at the Project site. Any such identification shall be reasonably visible to the Construction Manager, Architect and to Owner's or Tenants' personnel at all times to allow the Owner to maintain the safety and security of buildings, property, and persons at the Project site. Contractors failing to abide by this requirement are different from those as indicated.

**§ 3.19.14** The Contractor, its employees and Subcontractors and their employees shall be subject to and abide by rules and regulations established by the Owner. No weapons of any kind shall be permitted on-site; there shall be no harassment of a sexual, ethnic, or religious nature; there shall be no use of profanity.



### **§ 3.20 Local Conditions, Existing Features and Underground Data**

**§ 3.20.1** The Contractor acknowledges it has satisfied itself as to the nature and location of the Work, the general and local conditions, particularly those bearing on transportation, disposal, handling and storage of materials, availability of labor, materials, equipment, utilities, roads, weather, ground water table, character of surface and subsurface materials and conditions, the facilities needed to prosecute the Work, and all other factors which in any way affect the Work or the cost thereof under this Contract. Any failure by the Contractor to acquaint itself with the available information concerning these conditions will not relieve it from the responsibility of successfully performing work. See Section § 1.2.2.1.

**§ 3.20.2** The location of existing features shown on plans is intended for general information only. The Contractor is solely responsible for accurate determination of the location of all structures and shall not be entitled to any extra payment due to any unforeseen difficulties or distances encountered in the Work.

**§ 3.20.3** The locations, depths, and data as to underground conditions have been obtained from records, surface indications and data furnished by others. The information furnished is solely for the convenience of the Contractor without any warranty, expressed or implied as to its accuracy or completeness. To the extent permitted by law, the Contractor shall make no claim against the Owner or Architect or the Construction Manager with respect to the accuracy or completeness of such information if erroneous, or if the conditions found at the time of construction.

### **§ 3.21 Construction Stresses**

**§ 3.21.1** The Contractor shall be solely responsible for the load conditions created during construction. The Contractor shall be responsible for repairing any structure which is dislocated, over strained, or damaged during construction.

**§ 3.21.2** The Contractor is responsible for restoration and/or repair of utilities, property, buildings, pavement, walkways, roads, etc. damaged by its activities.

### **§ 3.22 Training and Instructions**

**§ 3.22.1** Upon Substantial Completion of the Work, the Contractor shall orient and instruct the Owner's designated personnel in the operation and maintenance of all equipment furnished by the Contractor and shall turn over all pertinent literature and operational manuals relating to the equipment. The format for organizing, binding, and delivering such manuals shall be as described in the Specifications.

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**§ 4.1.3** Duties, responsibilities, and limitations of authority of the Construction Manager and Architect as set forth in the Contract Documents shall not be restricted, modified, or extended without written consent of the Owner, Construction Manager, Architect, and Contractor. Consent shall not be unreasonably withheld.

**§ 4.1.4** If the employment of the Architect or Construction Manager is terminated, the Owner shall employ a successor Architect or Construction Manager.

**§ 4.1.5** The Architect shall be deemed a third-party beneficiary of the Contract and the General Conditions of the Construction Contract and Supplementary Conditions. As such, where Architect incurs additional costs as a result of actions of the Contractor or any of its Subcontractors and Architect is not entitled to compensations for such costs by Owner as Additional Services, such additional cost shall be paid by the Contractor directly to the Architect as Architect's current rates.

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**§ 5.1.1** A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site, on the Project. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include other Contractors or Separate Contractors or the subcontractors of other Contractors or Separate Contractors.

**§ 5.1.2** A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site, on the Project. The term "Sub-subcontractor" is referred to throughout the Contract

Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

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**§ 6.2.3** The Contractor shall reimburse the Owner for costs the Owner incurs, including costs that are payable to a Separate Contractors or to other Contractors, because of the Contractor's delays, improperly timed activities or defective construction. ~~The Owner shall be responsible to the Contractor for costs the Contractor incurs because of delays, improperly timed activities, damage to the Work or defective construction by the Owner's own forces, Separate Contractors, or other Contractors.~~

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**§ 7.1.1.1** Construction Change Directive: Architect may issue a document, on AIA Form G714, signed by Owner, instructing Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order. The Document shall describe the changes in the Work and designates method of determining any change in Contract Sum or Contract Time.

1. The document will describe the required changes and will designate method of determining any change in Contract Sum or Contract time.
2. Promptly execute the change.

**§ 7.1.2.1** Proposal Request: Architect may issue a document which includes a detailed description of a proposed change with supplementary or revised Drawings and specifications. Contractor shall prepare and submit a fixed price quotation within 7 calendar days of receipt of such documents.

**§ 7.1.2.2** Submit to the Construction Manager, the Name of the Individual Authorized to receive change documents and who will be responsible for informing others in contractor's employ or subcontractors of changes to the Contract Documents.

**§ 7.1.2.3** Contractor may propose a change by submitting a request for change to the Construction Manager, describing the proposed change and its full effect on the Work, with a statement describing the reason for the change, and the effect on the Contract Sum and Contract time with full documentation and a statement describing the effect on Work by separate or other contractors. The Construction Manager Shall Submit to the Architect for review.

**§ 7.1.4** Changes in the Work involving additional Work or deletion of Work whether or not resulting in an addition to or subtraction from the Contract Sum shall not be made until the Contractor submits to the Construction Manager the cost of the added or deleted Work with a complete and detailed listing of all Subcontractors involved, all materials, labor and equipment.

**§ 7.1.4.1** Overhead and profit as described in § 7.1.7 and § 7.1.7.1 may be added to the cost of a Claim for additional Work *only* when the source of monies for such additional Work is not an Allowance included in the Contract Sum or any other monies for Work included in the Contract Sum.

**§ 7.1.4.2** Changes in the Work whether or not involving additions or deductions from the Contract Sum shall not be made until an appropriate Change Order or Change Directive have been issued.

**§ 7.1.4.3** ALL CHANGE ORDERS MUST HAVE THE APPROVAL OF THE OWNER AND ARCHITECT IN WRITING.

**§ 7.1.5** Actual cost of labor and material shall be defined as the amount paid for the following items, to the extent determined reasonable and necessary:

1. Cost of materials delivered to the job site for incorporation into the contract work.
2. Wage paid to workers and foreman and wage supplements paid to labor organizations in accordance with current labor agreements.
3. Premiums or taxes paid by the Contractor for worker's compensation insurance, unemployment insurance, FICA tax and other payroll taxes as required by law, net of actual and anticipated refunds and rebates. (Not to be included in calculation of overhead and profit.)

- .4 Sales taxes as required by law.
- .5 Allowance for use of construction equipment (exclusive of hand tools and minor equipment), as approved for use by the Architect. The rate on self-owned equipment used for periods of under 1 week will be the Associated Equipment Distributor's published monthly rate divided by 22 days to establish a daily rate and divided again by 8 hours to establish an hourly rate. Equipment used for periods of 5 days or more will be billed at a rate equal to 45 percent of the published monthly rate. In the alternative, the Architect may approve the reimbursement of a rate representing the allocable costs of ownership. Self-owned equipment is defined to include equipment rented from controlled or affiliated companies. Rented equipment will be paid for at the actual rental cost. Gasoline, oil and grease required for operation and maintenance will be paid for at the actual cost. When, in the opinion of the Contractor and as approved by the Architect, suitable equipment is not available on the site, the moving of said equipment to and from the site will be paid for at actual cost.

§ 7.1.6 Overhead shall include insurance other than those incidental to labor mentioned above, premiums on bonds required by the Contractor, Contractor's Supervisory employees, office management, home and field office expenses, transportation costs and both manual and power small tools and manual and power small equipment.

§ 7.1.6.1 For Work done by the Prime Contractor's own forces, mark-up for combined overhead and profit on materials and on cost of labor shall not exceed 15%.

- .1 Work authorized under Article §3.8 Allowances are not subject to overhead and profit.

§ 7.1.6.2 For Work done by the Subcontractors, mark-up of costs as defined herein by Subcontractor's for combined overhead and profit on materials and on cost of labor shall not exceed 10%.

- .1 To this amount, 5% may be added for the Prime Contractor's combined overhead and profit.
- .2 Work authorized under Article §3.8 Allowances are not subject to overhead and profit.

§ 7.1.7 To facilitate reviewing quotations for either extra charges or deductions, all proposals shall be accompanied by a complete itemization of costs including labor, materials, subcontracts, and if allowed, mark-ups for overhead and profit. Subcontracts shall be similarly itemized. In no case will a change involving over \$1,000.00 be approved without itemization.

§ 7.1.7.1 If requested, the Contractor shall submit detailed quotations from material suppliers.

§ 7.1.8 Regardless of the method used to determine the value of any change, the Contractor will be required to submit evidence satisfactory to the Architect to substantiate each and every item that constitutes his proposal of the value of the change. The amounts allowed for overhead and profit shall not exceed the applicable percentages as established in the two (2) following Sections:

§ 7.1.8.1 If the Work is done directly by the Contractor, overhead and profit in the amount of 15% may be added to the cost proposal. The percentages for overhead and profit may vary according to the nature, extent and complexity of the work involved, but in no case shall exceed the percentages set forth in the paragraph. Overhead and profit percentages are not to be applied to the premium portion of overtime pay.

§ 7.1.8.2 If the Work is done by a subcontractor, subcontractor's overhead and profit in the amount of 10% may be added to the cost of labor and materials. To this amount, there may be added 5 percent for the Contractor's combined overhead and profit. Overhead and profit percentages are not to be applied to the premium portion of overtime pay.

§ 7.1.9 Whenever the cost of any Work is to be determined pursuant to § 7.1.1 thru § 7.1.8, Contractor will submit in form acceptable to the Construction Manager and Architect an itemized cost breakdown together with supporting data.

§ 7.1.9.1 In computing the value of a change order which involves additions and deductions of work and the added work exceed the omitted work, overhead and profit shall be computed on the amount by which the cost of additional labor and materials exceeds the cost of the omitted labor and material, except no additional overhead and profit shall be allowed on value of work determined in accordance with § 7.1.5.

§ 7.1.9.2 In computing the value of a change order which involves deductions and additions and the Work omitted exceeds the added Work, the Contractor will be allowed to retain the overhead and profit on the amount by which the omitted Work exceeds the added Work, except that no overhead and profit shall be retained on value of work.

§ 7.1.9.3 The Contractor may retain overhead and profit on a change order which involves deductions only, except that no overhead and profit shall be considered on value of Work."

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§ 7.3.1 A Construction Change Directive is a written order prepared by the ~~Construction Manager Architect~~ and signed by the Owner, Contractor, Construction Manager and Architect, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions, or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

...

- .1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation. Lump sum adjustment shall be substantiated by submitting evidence of actual costs to the Construction Manager and Architect for evaluation;

...

- .3 Cost to be determined in a manner agreed upon by the parties and a mutually acceptable ~~fixed or~~ percentage fee; fixed; or

...

§ 7.3.4 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Construction Manager shall determine the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an ~~amount for overhead and profit as set forth in the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount~~ allowance for overhead and profit in accordance with § 7.1.8, § 7.1.8.1, § 7.1.8.2, § 7.1.9, § 7.1.9.1, § 7.1.9.2, § 7.1.9.3, and when permitted by § 7.1.6 and § 7.1.6.1. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Construction Manager may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.4 shall be limited to the following:

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- .3 Rental costs of machinery and equipment, exclusive of ~~hand tools, manual and small power tools and manual and small power equipment, whether rented from the Contractor or others;~~
- .4 Costs of ~~premiums for all bonds and insurance,~~ permit fees, and sales, use, or similar taxes, directly related to the change; and
- .5 Costs of ~~supervision and field office personnel directly attributable to the change.~~ consumable supplies.

...

§ 7.3.7 A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be ~~recorded as~~ incorporated into a Change Order.

§ 7.3.8 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Construction Manager and Architect. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change. Pending final determination



of the total cost of a Construction Change Directive to the Owner, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The Construction Manager and Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Construction Manager and Architect determine to be reasonably justified. The interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15.

**§ 7.3.9** Pending final determination of the total cost of a Construction Change Directive to the Owner, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The Construction Manager and Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Construction Manager and Architect determine to be reasonably justified. The interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15. When the Owner and Contractor agree with a determination made by the Construction Manager and Architect concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and the Construction Manager shall prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

**§ 7.3.10** When the Owner and Contractor agree with a determination made by the Construction Manager and Architect concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and the Construction Manager shall prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

...

## **§ 7.5 Unit Prices**

**§ 7.5.1** Where the Work involved is covered by unit prices contained in the Contract Documents, by application of unit prices to the quantities of the items involved (subject to the provisions of § 7.1.1.1 through § 7.5.1.4 inclusive).

**§ 7.5.1.1** Where the Contract Documents provide that all or part of the Work is to be Unit Price Work, initially the Contract Price will be deemed to include for all Unit Price Work an amount equal to the sum of the established unit prices for each separately identified item of Unit Price Work times the estimated quantity of each item as indicated in the Agreement. The estimated quantities of items of Unit Price Work are not guaranteed and are solely for the purpose of comparison of bids and determining an initial Contract Price. Determinations of the actual quantities and classifications of Unit Price Work performed by Contractor will be made by Architect in accordance with § 7.5.4.

**§ 7.5.1.2** Each unit price will be deemed to include an amount considered by Contractor to be adequate to cover Contractor's overhead and profit for each separately identified item.

**§ 7.5.1.3** Where the quantity of any item of Unit Price Work performed by Contractor differs materially and significantly from the estimated quantity of such item indicated in the Agreement and there is no corresponding adjustment with respect to any other item of work and if Contractor believes that Contractor has incurred additional expense as a result thereof, Contractor may make a claim for an increase in the Contract Price in accordance with Article 11 if the parties are unable to agree as to the amount of any such increase.

**§ 7.5.1.4** Construction Manager will determine the actual quantities and classifications of unit price work performed by Contractor. Construction Manager and Architect will review with the Contractor, Architect's preliminary determinations on such matters before rendering a written decision thereon (by recommendation of an Application for Payment or otherwise). Architect's written decisions thereon will be final and binding upon Construction Manager, Owner and Contractor unless, within 10 days after the date of any such decision, either Owner or Contractor delivers to the other party to the Agreement and to Architect written notice of intention to appeal from such a decision.

## **§ 7.6 Alternates**

**§ 7.6.1** Where the Work involved is covered by Alternate contained in the Contract Documents, the Owner shall have the right of selection in respect to any or all of the Alternates as Bid. The Contractor shall provide the Owner thirty

(30) days' written notice when the doing said work of an Alternate impacts the new Work or the removal of materials/products already installed or the acceptance of the Alternate will increase the Contractor's Contract amount.

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**§ 8.2.1 Time limits stated in the Contract Documents are of the essence of the Contract- TIME IS OF THE ESSENCE IN THE COMMENCEMENT, EXECUTION AND CONSTRUCTION OF THE WORK.**

Contractor shall be responsible for all direct and consequential damages to Owner, Construction Manager, and Architect arising from any delay of Contractor, its Subcontractors and suppliers, in performing or completing the Work in accordance with the time requirements. By executing the Agreement, the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

**§ 8.2.1.1 Contractor shall cooperate with the Owner, Construction Manager, Architect and other Contractors on the Project, making every reasonable effort to reduce the contract time.**

...

**§ 8.2.2.1 Contractor shall not commence Work on the site until two copies of all insurance policies as indicated in Article 11, attesting that the required coverage is in force, have been accepted by the Owner.**

**§ 8.2.3 The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time. Contractor shall do all things necessary to ensure the prosecution of the Work in accordance with any one or more of the following as determined by the Construction Manager and the Owner, in their discretion:**

- .1 Project schedules and revisions thereof;**
- .2 The time requirements for various portions of Work;**
- .3 The requirements of the Project including, but not limited to, coordination requirements as may from time to time be known to Contractor;**
- .4 Schedules of the Work provided by Contractor to Construction Manager upon the Owner's request.**

**§ 8.2.4 If the Contractor does not achieve Substantial Completion within the Contract Time established in the Agreement between the Owner and the Contractor, or in a subsequent Change Order, the Contractor shall be liable to the Owner, in addition to any actual or consequential damages, for the costs of reimbursements to the Owner's Agents including, but not limited to, the Construction Manager and Architect for their services attributable to this delay.**

**§ 8.2.5 Should the progress of the Work and/or other Work be delayed by any fault, neglect, act or failure to act of Contractor or any of its Subcontractors or suppliers so as to cause any additional cost, expense, liability or damage to Owner, Construction Manager, or Architect or for which Owner, Construction Manager, or Architect may become liable, Contractor shall hold Owner, Construction Manager, and Architect harmless from and indemnify Owner, Construction Manager, and Architect against all such additional cost, expense liability or damage in accordance with the provisions of Article 11.**

**§ 8.2.6 The Work shall be performed during designated working hours, except that in the event of emergency or when necessary to perform the Work in accordance with the requirements of § 8.2, Work shall be performed at Contractor's cost and expense on other shifts, overtime, Saturdays, Sundays, Holidays and at other times, if permission to do so has been obtained in writing from Owner. Without limiting the requirements of the preceding sentence, if the progress of the Work or of the Project has been delayed by any fault, neglect, act or failure to act of Contractor or any of its Subcontractors or suppliers, Contractor shall work such overtime, at Contractor's cost and expense as aforesaid, as Construction Manager shall deem necessary or desirable to make up for all time lost and to avoid delay in the completion of the Work and of the Project. The failure by Construction Manager to direct Contractor to engage in such overtime shall not relieve Contractor of the consequences of its delay.**

**§ 8.2.7 Unless otherwise noted, the date of commencement of the Work is the date established in the Agreement. Contractor shall organize construction schedules as specified in § 3.10, Contractor's Construction Schedules. The commencement date shall not be postponed by the failure to act of the Contractor or of persons or entities for which the Contractor is responsible.**

§ 8.2.8 The Construction Manager may direct acceleration of the Work so that it may be performed in advance of the schedules, time requirements and Project requirements. If so directed, Contractor shall increase its staff and/or work overtime. Contractor will not be entitled to additional compensation for Work performed outside of designated working hours, except as approved by Owner. Provided that Contractor is not in default under the Contract, and Owner has issued the aforesaid authorization, there shall be added to the Contract Sum as actual out-of-pocket amount equal to:

- .1 Additional premiums on wages actually paid, at rates that have been accepted by Construction Manager and Architect
- .2 Taxes imposed by law on such additional wages;
- .3 Premiums for worker's compensation and liability insurance if required to be paid on such additional wages.

Written authorization for overtime work that exceeds \$500.00 for which Contractor intends to charge the Owner in any one week shall be invalid unless confirmed in writing by the Owner, it being understood that Owner's Designated Representative shall not have authority to authorize such overtime which exceeds \$500.00 in any one week.

§ 8.2.9 In no case shall the contractor delay the progress of the Work or any part thereof on account of changes in the Work or disputes caused by proposed or ordered changes in the Work or any disputes or dis-agreements as to the equitable value of such changes.

§ 8.2.10 Contractor and Contractor's Surety shall be strictly accountable for completion as a condition to satisfactorily contractual performance.

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by (1) an act or neglect of the Owner, Architect, Construction Manager, or an employee of any of them, or of the Owner's own forces, Separate Contractors, or other Contractors; (2) by changes ordered in the Work; (3) by labor disputes, fire, unusual delay in deliveries, unavoidable casualties, adverse weather conditions documented in accordance with Section 15.1.6.2, or other causes beyond the Contractor's control; (4) by delay authorized by the Owner pending mediation and binding dispute resolution; or (5) by other causes that the Contractor asserts and the Architect, based on the recommendation of the Construction Manager, determines justify delay, then the Contract Time shall be extended for such reasonable time as the Architect may determine. Should Contractor be obstructed or delayed in the commencement, prosecution or completion of the Work, without fault on its part, by reason of failure to act, direction, order, neglect, delay or default of the Owner, Construction Manager, or the Architect; by changes in the Work; fire, lightning, earthquake, enemy action, act of God or similar catastrophe; by Governmental restrictions with respect to materials or labor, or by an industry-wide strike beyond Contractor's reasonable control, then Contractor shall be entitled to an extension of time lost by reason of any and all causes aforesaid, but no Claim for extension of time on account of delay shall be allowed unless a Claim in writing therefore is presented to Construction Manager with reasonable diligence but in any event not later than fifteen (15) days after the commencement of such claimed delay. Except for the causes specifically listed above in this sub-section, no other cause or causes of delays shall give rise to an extension of time to perform the Work. The granting of an extension of time is conditioned upon Contractor's timely submission of the aforesaid written notice. Except to the extent, if any, expressly prohibited by law, Contractor expressly agrees not to make, and hereby waives, any Claim for damages, including those resulting from increased labor or material cost, on account of any delay, obstruction or hindrance for any cause whatsoever, whether or not foreseeable and whether or not anticipated including but not limited to the aforescribed causes, and agrees that the sole right and remedy therefore shall be extension of time, provided the requisite condition as to written Claim has been met.

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Article 15. If Contractor claims an increase in the Contract Sum or an extension in the completion time required by reason of a change in the Work, Contractor shall give Construction Manager and Architect written notice within fifteen (15) days after Contractor's knowledge of the occurrence of the matter giving rise to such Claim. This notice shall be given by Contractor before proceeding to execute the changed Work, except in an emergency endangering life or property in which case Contractor shall proceed in accordance with § 10.3. No such Claim will be valid unless notice is given as

required in this section. Contractor shall proceed to execute the Work, even though the increase or time extension has not been agreed upon.

§ 8.3.2.1 Extension of time, if requested by the Contractor, shall only be considered after the Contractor has made reasonable effort to recover the lost time. These efforts shall be documented by the Contractor and submitted to the Architect.

§ 8.3.2.2 An extension, or extensions, of time may be granted subject to the provisions of this article, but only after written application therefore by the contractor in accordance with Article 15.

§ 8.3.2.3 An extension of time shall be only for the number of days of delay that the Construction Manager may determine to be due solely to the causes set forth in the application for extension of time. The Contractor shall not be entitled to receive a separate extension of time for each one of several causes of delay operating concurrently; but if at all, only the actual period of delay as determined by the Construction Manager.

§ 8.3.3 This Section 8.3 does not preclude recovery of damages for delay by either party under other provisions of the Contract Documents. Contractor shall not be allowed an extension of time unless Contractor has established to the satisfaction of the Owner, Construction Manager, and Architect that the delay claimed by Contractor is to a portion of the Work on the critical path of the work schedule.

§ 8.3.4 Under no circumstances will Contractor look to or make a Claim against Owner, Construction Manager, or Architect for the consequences of any delay resulting from directions given or not given by Construction Manager including scheduling and coordination of the Work or resulting from Architect's preparation of Drawings and Specifications or review of Shop Drawings.

§ 8.3.5 When the Contract Time has been extended, such extension of time shall not be considered as justification for extra compensation to the Contractor for administrative costs or other similar reasons.

#### **§ 8.4 Damages for Delay**

§ 8.4.1 Architectural Changes for Delay in Completion. If the entire work is not fully completed within the maximum allowable time for completion specified in the agreement, including any extensions granted thereto, architectural charges incurred by the Owner, from the completion date thus established to the actual final Date of Substantial Completion of the work, shall be charges to the Contractor for failing to complete its work by the stipulated date and be deducted from the final monies due the Contractor. Such charges shall be determined at the rate of \$750.00 per day per man for each and every man and day that the Architect and Construction Manager needs to furnish project management or an on-site Construction Manager Representative.

§ 8.4.2 Liquidated Damages for Delay in Completion. Failure to complete the work within the maximum allowable time for completion specified in the Agreement and/or the Milestone Schedule, including any extensions granted thereto, or failure to meet an intermediate milestone date as established by the Milestone Schedule, shall entitle the Owner to deduct from monies due to the Contractor, or to otherwise charge the Contractor, as liquidated damages the amount per calendar day of One Thousand Dollars (\$1,000.00) for each calendar day beyond such maximum allowable time in the completion of the work. Such amount of liquidated damages shall be in addition to the \$750 per day charges for delay described in Paragraph 8.4.1.

The absence of a liquidated damage amount and/or other criteria concerning same shall not preclude the Owner from exercising its rights. All time limits stated in the Contract Documents are of the essence of the Agreement. The provisions of this Article 8 shall not exclude recovery by Owner for damages (including but not limited to fees and charges of Engineers, Architects, Construction Manager, Attorneys and other professionals and court and litigation costs) for delay by the Contractor.

§ 8.4.3 No Damage for Delay. Each Prime Contractor agrees to make no claims for delay in the performance of this Contract occasioned by an act or omission, or act of the Owner or any of its representatives and agrees that such a claim shall be fully compensated for by an extension of time to complete the performance of the work as provided herein.

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**§ 9.2.1** Submit a printed schedule on AIA form G703 – Application and Certificate for Payment Continuation Sheet. Submit in duplicate to the Architect within 15 days after date of Owner-Contractor Agreement.

**§ 9.2.2** Format: Utilize the Table of Contents of the Project Manual. Identify each line item with number and title of the Specification Section for each Project site. Provide breakdown of both labor and materials.

**§ 9.2.3** Include within each line item a direct proportional amount of contractor's overhead and profit.

**§ 9.2.4** Line item for Record Drawings which are to be turned over to the Owner at the end of the Project shall not be less than 0.15 percent of the Contract price.

**§ 9.2.5 Schedule of Contract Values**

- .1** The list of items shall include all items included in all Divisions and Sections of the specifications and shall be shown as separate line items.
- .2** The following items shall also be listed separately as line items (with their respective values):
  - Bond and Project Insurance.
  - Mobilization and Demobilization.
  - Superintendence.
  - Training, Operations and Maintenance Manual, Construction Record Documents.
  - Each Allowance associated with the Contract.
  - Each Alternate accepted.
  - Each Change Directive as it is issued; to be listed below the associated allowance.
  - Each Change Order as it is issued.
  - Warranties.
  - Records Drawings.
  - Temporary Facilities.
  - Cleaning.
  - Submittals.
  - Items to be Completed List.
- .3** Contractor shall maintain and keep current all changes to the Schedule of Values caused by Change Orders, Construction Change Directives or other authorized changes. Such revised Schedule of Values shall be presented monthly with the Application for Payment.

**§ 9.3.1** At least fifteen days before the date established for each progress payment, the Contractor shall submit to the Construction Manager an itemized Application for Payment prepared in accordance with the schedule of values, if required under Section 9.2, for completed portions of the Work. The application shall be notarized, if required, and supported by all data substantiating the Contractor's right to payment that the Owner, Construction Manager or Architect require, such as copies of requisitions, and releases of waivers of lien from Subcontractors and suppliers, and shall reflect retainage if provided for in the Contract Documents. Applications for payment shall be made monthly on the current AIA Form G732-2019 Application and Certificate for Payment and G703 Continuation Sheet for operations completed in accordance with the Approved Schedule of Values. Applications shall be based on the contract prices of labor and materials incorporated into the Work and of materials suitably stored and secured up to the last day of the previous month, less retainage and less the aggregate of previous payments. Change orders when approved shall be listed at the bottom of the last sheet of the payment application.

**§ 9.3.1.1** As provided in Section 7.3.9, such applications may include requests for payment on account of changes in the Work that have been properly authorized by Construction Change Directives, or by interim determinations of the Construction Manager and Architect, but not yet included in Change Orders. At least twenty (20) days prior to date established for each progress payment, each Contractor shall submit to the Construction Manager for its review, a preliminary pencil copy of an itemized Application for Payment completed in accordance with the approved Schedule(s) of Values.

**§ 9.3.1.2** Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or supplier, unless such Work has been performed by others whom the Contractor intends to pay. Such applications may include requests for payment on account of changes in the Work that have been properly authorized by Construction Change Directives but not included in Change Orders. Such items, if anticipated to be paid from an Allowance, shall be listed under that associated Allowance.

§ 9.3.1.3 Such applications may not include requests for payment of amounts the Contractor does not intend to pay to a Subcontractor or material supplier because of a dispute or other reason.

§ 9.3.1.4 All supporting data requested by the Construction Manager and Architect from Subcontractors and material suppliers necessary to substantiate the Contractor's right to payment shall be furnished by the Contractor.

§ 9.3.1.5 Until the Contract-scheduled date of Substantial Completion (including authorized adjustment), the Owner shall pay 95% of the amount due the Contractor on account of progress payments, less an amount equal to 250% of the amount of any Claims, liens, or judgments against the Contractor which have not been satisfactorily discharged.

- .1 Retainage resulting from § 9.3.1.5 shall be 5% plus an amount equal to 200% of the amount of any Claims, liens, or judgments against the Contractor which have not been satisfactorily discharged.
- .2 At Substantial Completion, when satisfied with the progress of the Work, the Owner, with Consent of Surety, may adjust the amount retained from previous progress payments in accordance with § 9.8.3.
- .3 The full retainage may be reinstated if the manner of completion of the Work and its progress do not remain satisfactory to the Owner and the Architect, if the Surety withholds his consent or for other good and sufficient reasons.

§ 9.3.1.6 Each Contractor shall submit three (3) final copies of their Application for Payment, incorporating those revisions noted on the pencil copies, to the Construction Manager within two (2) days after being notified that the draft copy, with revisions, is acceptable.

§ 9.3.1.7 The final copies of each Application for Payment (AIA Form G732-2019) shall be signed by an officer of the Contractor whose signature shall be notarized in the space provided.

§ 9.3.1.8 Applications shall be based on the completed Work as described above less retainage, and less the aggregate of previous payments. Change Orders when approved shall be listed at the bottom of the last sheet of the payment application.

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§ 9.3.2.1 Procedures required by Owner shall include, but are not necessarily limited to, submission by the Contractor to the Construction Manager and Architect of bills of sale and bills of lading for such materials and equipment, provision of opportunity for the Construction Manager's and Architect's visual verification that such materials and equipment are in place in storage; and, if stored off-site, submission by the contractor of verification that such materials and equipment are stored in a bonded warehouse.

§ 9.3.2.2 All such materials and equipment, including materials and equipment stored on-site but not yet incorporated into the Work, and upon which partial payments have been made, shall become the property of the Owner. The care and protection of such materials and equipment shall remain the responsibility of the Contractor until incorporation into the Work, including property storage and maintenance of insurance coverage against theft, damage and fire on a replacement cost basis without voluntary deductible.

#### § 9.3.2.3 Stored Materials

- .1 If the Contractor intends to request payment for materials stored on the site in accordance with the provisions of the Contract Documents, he must identify same on the current Contractor's Application for Payment form. The value of **previous** months' "stored materials" shall be included in the "Work Completed" column of the current application.
- .2 The relationship of labor and materials as indicated on the Payment Application shall be the basis for establishing the rate of payment for the transfer of material stored to materials installed.
- .3 All such materials and equipment, including materials and equipment stored on-site but not yet incorporated into the Work, upon which partial payments have been made, shall become the property of the Owner.
- .4 Payment for stored materials shall be in the amount of 95% of the value of stored materials less 5% retainage.

§ 9.3.3.1 The Contractor shall keep the Owner and the Owner's property (including funds for payment under the Project) free from all liens, legal or equitable, arising out of Contractor's Work hereunder. If any such lien is filed with the Owner by anyone claiming by, through or under the Contractor, the Contractor shall discharge the lien within 10 days of the filing thereof. The Contractor further expressly agrees to defend the Owner, at the Contractor's sole expense, against any actions, lawsuits or proceedings brought against the Owner as a result of liens filed against payments due the Contractor or the Work, the site of any of the Work, the Project site and any improvements thereon or any portion of the property of the Owner. The Contractor hereby agrees to indemnify and hold the Owner harmless against any such liens or Claims of lien and agrees to pay any judgment or lien resulting from any such actions, lawsuits or proceedings. The Owner agrees to release any payments with as a result of a duly filed lien, upon compliance by the Contractor with the applicable discharge or vacatur provisions of the Lien Law.

§ 9.3.4 The Contractor and all of its subcontractors shall submit to the Owner, within thirty (30) days after issuance of their first certified payroll and every thirty (30) days thereafter, a transcript of the original certified payroll record, as provided by the Labor Law, subscribed, and affirmed as true under the penalties of perjury for the Contractor and all its Subcontractors. Failure to do so shall be cause for the Owner to withhold payment until such records are received.

§ 9.3.5 When the Construction Manager or Architects requires substantiating information, submit data justifying dollar amount in question. Provide one copy of data with cover letter for each copy of submittal. Show application number and date, and line item by number and description."

§ 9.3.6 The Contractor further expressly undertakes to defend the Owner, at the Contractor's sole expense, against any actions, lawsuits or proceedings brought against Owner as a result of liens filed against the Work, the site of any of the Work, the project site, and any improvements thereon, payments due the Contractor or any portion of the property of any of the Owners (referred to collectively as liens in §9.3.3). The Contractor hereby agrees to indemnify and hold Owner harmless against any such liens or claims of lien and agrees to pay any judgment or lien resulting from any such actions, lawsuits, or proceedings.

§ 9.3.7 The Owner shall release any payments withheld due to a lien or a claim of lien if the Contractor obtains security acceptable to the Owner or a lien bond which is: (1) issued by a surety acceptable to the Owner, (2) in form and substance satisfactory to the Owner, and (3) in the maximum amount prescribed by law. By posting a lien bond or other acceptable security, however, the Contractor shall not be relieved of any responsibilities or obligations under this § 9.3, including, without limitation, the duty to defend and indemnify the Indemnities. The cost of any premiums incurred in connection with such bonds and security shall be the responsibility of the Contractor and shall not be part of, or cause any adjustment to, the Contract Sum.

§ 9.3.8 The Contractor agrees to waive any right which it may have to assert a mechanic's or other lien against the Project site and any improvements thereon, including, without limit, the Work itself. Furthermore, the Contractor will cause a similar provision, waiving any right to a mechanic's or other lien against the property, to be included in all of its subcontracts, any subcontracts, and all contracts with material suppliers. Upon execution of the Agreement, the Contractor shall also execute the waiver of lien attached to the Agreement and made a part thereof as an Exhibit.

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§ 9.5.1 The Construction Manager or Architect may withhold a Certificate for Payment or Project Certificate for Payment in whole or in part, to the extent reasonably necessary and as permitted by State Law, to protect the Owner, if in the Construction Manager's or Architect's opinion the representations to the Owner required by Section 9.4.3 and 9.4.4 cannot be made. If the Construction Manager or Architect is unable to certify payment in the amount of the Application, the Construction Manager will notify the Contractor and Owner as provided in Section 9.4.1 and 9.4.2. If the Contractor, Construction Manager and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment or a Project Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Construction Manager or Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment or Project Certificate for Payment previously issued, to such extent as may be necessary in the Construction Manager's or Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from the acts and omissions described in Section 3.3.2 because of

...

- .6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or
- .7 repeated failure to carry out the Work in accordance with the Contract Documents; or
- .8 any other breach of this Agreement.

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§ 9.6.1 After the Architect has issued a Certificate for Payment or Project Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents, 30 days after receipt, and shall so notify the Construction Manager and Architect.

...

§ 9.6.9 Upon Substantial Completion of the entire Work, the Contractor shall submit a requisition for the "contract balance". The Owner shall pay the remaining amount less the greater value of a lump sum of \$10,000 OR the sum of two- and one-half times the value of any items to be completed plus an amount necessary to satisfy any outstanding Claims, liens, or judgments against the Contractor. Until all remaining items of Work are satisfactory completed or corrected, the Owner may hold all retainage, including monies for all "uncompleted" items, until all items are completed, and closeout submittals are complete.

§ 9.6.9.1 Contractors' requests for discontinuance of retainages shall be accompanied by a properly executed copy of the "Consent of Surety to Reduction in or Partial Release of Retainage", AIA Document G707A.

#### § 9.6.10 Retainage

§ 9.6.10.1 Applications for Payment shall include a retainage amount of not less than five percent (5%) of the value of the completed work. Reduction of retainage shall only be approved upon completion of the Work and when authorized by the Owner in writing.

If the Construction Manager and Architect ~~do not fail persistently to~~ issue a Certificate for Payment or a Project Certificate for Payment, through no fault of the Contractor, within fourteen days after the Construction Manager's receipt of the Contractor's Application for Payment, or if the Owner ~~does not fails persistently to~~ pay the Contractor within seven days after the date established in the Contract Documents, the amount certified by the Construction Manager and Architect or awarded by binding dispute resolution, Architect, then the Contractor may, upon seven thirty additional days' notice to the Owner, Construction Manager and Architect, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided for in the Contract Documents.

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§ 9.8.3.1 No partial payments will be made after the time fixed for the completion of the Work or the time to which completion may be extended under the terms of the Contract, until the full and final completion and acceptance of all Work herein agreed upon.

§ 9.8.3.2 Where project includes heating and/or air conditioning or other systems that are not put into operation at the time of occupancy, a sum shall be withheld until these systems have operated to the general satisfaction of the Architect. The retained amount shall approximate 5% of the cost of the systems as determined by the cost breakdown submitted.

§ 9.8.4 When the Architect, assisted by the Construction Manager, determines that the Work of all of the Contractors, or designated portion thereof, is substantially complete, the Construction Manager will prepare, and the Construction Manager and Architect shall execute, a Certificate of Substantial Completion that shall establish the date of Substantial Completion; establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance; and fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion. Completion or this Agreement.

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§ 9.8.6 If the Architect and/or the Construction Manager are required to inspect the Work more than two (2) times prior to certifying the Work as being substantially complete on account of the discovery of one or more items that are not sufficiently complete, the Contractor shall be liable to the Owner for the amount of any costs, additional fees or compensation due from or paid by the Owner to the Architect and/or the Construction Manager for the additional inspections.

...

§ 9.9.2 Immediately prior to such partial occupancy or use, the Owner, Construction Manager, Contractor, and Architect shall jointly inspect the area to be occupied or portion of the Work to be ~~used in order to determine and record the condition of the Work used.~~ The Contractor will provide the Owner and Construction Manager with photographs documenting the condition of the space to be occupied. The photographs must be dated and supplied within three (3) business days of the inspection. Any subsequent damage to the space which cannot be confirmed by the Contractor's photographs (as occurring as a result of the Owner's occupancy) will be repaired by the Contractor at no additional cost to the Owner.

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§ 9.10.1.1 If the Work is not accepted by the Owner after final inspection and additional time is required to complete items identified during the final inspection, the date starting the one-year correction period described in Article 12 shall be set by the Architect at its discretion.

§ 9.10.1.2 If the Architect and Construction Manager are required to perform additional inspections subsequent to the "final inspection" because the Work fails to comply with the requirements of the Contract, the amount of compensation paid to the Architect and Construction Manager by the Owner for additional services shall be deducted from the final payment to the Contractor.

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect through the Construction Manager-Manager:

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- (5) documentation of any special warranties, such as manufacturers' warranties or specific Subcontractor warranties, and ~~(6);~~
- (6) if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts and releases and waivers of liens, claims, security interests, or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner.
- (a) If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien, claim, security interest, or encumbrance. If a lien, claim, security interest, or encumbrance remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging the lien, claim, security interest, or encumbrance, including all costs and reasonable attorneys' fees.

§ 9.10.2.1 In addition to the submittals requested in § 9.10.2 above, the Contractor shall submit releases or waivers of liens from each Subcontractor, material supplier, and others with lien rights against the property of the Owner and shall submit a list of such parties.

...

- .3 terms of special warranties required by the Contract Documents;~~or~~
- .4 audits performed by the Owner, if permitted by the Contract Documents, after final ~~payment.~~ payment;  
or
- .5 Costs, loss or damages sustained, either prior to or subsequent to such payment, as a result of any breach of the Contract, or any wrongful act or omission of the Contractor or any Subcontractor.

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§ 10.1.1 Contractor is fully responsible for initiating, maintaining and supervising all safety precautions and programs in connection with the Work and the Work site consistent with applicable laws and regulations, and generally accepted standards in the construction industry. Contractor acknowledges and agrees that it is fully responsible for the supervision and control of the Work and of Contractor's employees, subcontractors and/or suppliers, (and any party employed directly or indirectly by any of them, or for whom any of them are legally responsible) and the means, methods and manner in which the Work is performed.

§ 10.1.2 Contractor specifically agrees to provide all necessary equipment, give all required notices, perform all required tests, and to employ all necessary safety measures and procedures to protect its employees, agents, subcontractors, and all other persons at the Project site from any hazards created directly or indirectly by Contractor's operation or performance of the Work, and any hazards which are not created by Contractor's operations or performance of the Work to which such parties are exposed at the Project site as a result of Contractor's operations or performance of the Work. In the event that equipment or safety devices are required, Contractor agrees that it will obtain such equipment or safety devices and employ same at its sole expense, and will strictly adhere to all provisions of the Occupational Safety and Health Act, as well as any State statutes, codes, rules and regulations pertaining to the safety or property as may be deemed applicable to the Contractor's work or the work of any person or party directly or indirectly employed by Contractor or for whom contractor is responsible. Contractor agrees that it shall be Contractor's sole responsibility to ensure that each of its employees, subcontractors and suppliers are also fully aware and in compliance with all such statutes, codes, rules and regulations at all times.

§ 10.1.3 From the commencement until the acceptance of the Work, Contractor shall be solely responsible for the care of the Work covered by the Contract and for the materials, supplies and equipment delivered at the Site intended to be used in the Work, and all injury or damage to the same from whatever cause shall be made good at this expense before the final payment is made. Contractor shall provide suitable means of protection for and shall protect all materials intended to be used in the Work, all work in progress, and all completed work. Contractor shall take all necessary precautions to prevent injury or damage to the Work by flood, fire freezing or from inclemencies of the weather.

§ 10.1.4 Not by way of limitation of the foregoing, at the end of each workday, Contractor shall secure all power tools and other potentially dangerous tools and equipment and shall remove means of access to areas of the Work site, so as to further protect the safety of occupants of the premises during such off-work hours.

§ 10.1.5 Contractor's obligations under this section are not dependent upon any question of negligence on its part or on the part of its officers, agents, servants or employees, and neither the approval by the Architect or the Owner to Architect to call attention to improper or inadequate methods or to require a change in methods nor the neglect of the Architect or the Owner to direct Contractor to take any particular precautions or to refrain from doing any particular thing shall excuse the Contractor from his obligations hereunder in case of any such injury to person or damage to property. The provisions of this section are intended for the sole benefit and protection of the Owner and shall not create any cause of action in favor of any person, corporation entity, other than the Owner.

...

§ 10.2.2.1 The Contractor acknowledges that certain applicable laws, including, but not limited to, Sections 240 and 241 of New York State Labor Law, may impose liability on the Owner for injuries to persons employed by the Contractor or by its Subcontractors or Sub-subcontractors. As between the Owner and the Contractor (or any of the Contractor's Subcontractors or Sub-subcontractors or any persons for which any of them shall be responsible), the Contractor shall be solely responsible for compliance with all such laws to the extent they pertain to the safety or protection of persons on the Project site or performing the Work. Any claim, charge, penalty or cause of action arising out of or on account of any such law shall be subject to Section 3.18.

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~~If either party suffers injury or damage to person~~ **Injury or Damage to Person or Property.** ~~If the Contractor suffers injury or damage to persons or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, notice of the injury or damage, whether or not insured, shall be given to the other party Owner or of any of the Owner's employees or agents or any others for whose acts the Owner is legally~~

responsible, the Contractor shall give written notice thereof to the Owner and the Architect within a reasonable time not exceeding 21-2 days after ~~discovery~~ first observance. The notice shall provide sufficient detail to enable ~~the other party to investigate the matter~~ to Owner to investigate the matter. If a Claim for additional cost or additional time is related to this Claim, it shall be made in accordance with the provisions of Article 15.

**§ 10.2.9 Restoration.** If during the construction, public or private property is damaged or destroyed as a result of its Work, the Contractor responsible shall, at its own expense, restore such property to a condition equal to that existing before such damage or injury was done, by cleaning up, repairing, rebuilding or replacing it, or otherwise making good such damage or destruction in an acceptable manner.

**§ 10.2.10 OSHA.** In addition to all requirements set forth herein, all Contractors and Subcontractors who perform any Work under this Contract will fully comply with the provisions of the Federal Occupational Safety and Health Act (OSHA) of 1970 and with any rules and regulations pursuant to the Act. This requirement shall apply continuously and not be limited to normal Working hours. The duty of the Construction Manager, Architect to conduct construction review of the Contractor's or its Subcontractor's performance is not intended to include review of the adequacy of the Contractor's or its Subcontractor's safety measures in, on or near the construction site or buildings.

**§ 10.2.11 Welding:**

- .1 All welding shall be done in accordance with the American Welding Society Code for Arch Welding Society, certified for current year.
- .2 When cutting or welding is to be done, the Owner **MUST** be notified prior to start. In addition, the Contractor for the Work shall provide a **fire guard** with proper fire extinguisher for duration of cutting and welding work.
- .3 A welding curtain is to be installed around area where welding or cutting is to be done. No welding machines will be tied into electric panels without express permission from the Owner. Portable gasoline driven generators may **not** be used without the expressed permission of the Owner.
- .4 Obtain Owner's permission for each location in existing building where welding is required. Owner's stipulated requirements shall be adhered to.

**§ 10.2.12 Open Burning.** Open burning on the site is prohibited. All possible precautions shall be taken to prevent fires.

**§ 10.2.13** When all or a portion of the Work is suspended for any reason, the Contractor shall securely fasten down all coverings and protect the Work from damage by any cause.

**§ 10.2.14** The Contractor shall promptly report, in writing, to the Construction Manager, Architect and the Owner all accidents arising out of or in connection with the Work that causes property damage, personal injury or death, giving full details and statements of any witnesses. In addition, if death, serious personal injury or serious property damage is caused, the accident shall be reported immediately by telephone or messenger to the above parties."

**§ 10.2.15** The Contractor shall be solely responsible for the conditions which develop during construction and in the event any structure is dislocated, over strained, or damaged so as to affect its usefulness, the Contractor shall be solely responsible. The Contractor shall take whatever steps necessary to strengthen, relocate or rebuild the structure to meet requirements.

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**§ 10.3.2** Upon receipt of the Contractor's written notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor, Construction Manager and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of the material or substance or who are to perform the task of removal or safe containment of the material or substance. The Contractor, the Construction Manager and the Architect will promptly reply to the Owner in writing stating whether or not any of them has reasonable objection to the persons or entities proposed by the Owner. If the Contractor, Construction Manager or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor, the Construction Manager and the Architect have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor.

By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable additional costs of shutdown, delay, and start-up.

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~~In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury, or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7.~~ **§ 10.4.1.1** In an emergency affecting life, the Work, or the Owner or Owner's property, Contractor, without special instructions or authorization from Construction Manager or Architect, shall take the action necessary to deal adequately with such emergency. Notice of any such action shall be given by Contractor to Construction Manager, Architect and Owner as soon as is practicable, but not later than 2 days following the occurrence.

...

**§ 11.1.1** The Contractor shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Contractor shall purchase and maintain the required occurrence-based insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is ~~located.~~ located and rated B+ or better by A.M. Best Company and to which the Owner has no reasonable objection. The Owner, Construction Manager and Construction Manager's consultants, and the Architect and Architect's consultants, shall be named as additional insureds under the Contractor's commercial general liability policy or as otherwise described in the Contract Documents.

**§ 11.1.1.1** Within the time period set by the Owner after award of the Contract, and before the effective date of the Agreement, the Contractor shall cause the authorized representative of the insurance company to completely fill out and execute the Certificate of Insurance form which is bound with the Agreement section of the Contract Documents, such instrument certifying the kinds and amounts of insurance being issued, including statement that coverage provided under the policies will not be canceled or materially changed until at least 30 days prior written notice has been given to the Owner. The Contractor shall also furnish the Owner one (1) duplicate of the original policy covering each kind of insurance issued. Each subcontractor shall follow the identical procedure, and it shall not commence work until the Certificate of Insurance, including any requested duplicate policies, has been submitted to and approved by the Owner. The Contractor shall furnish to the Owner insurance certificates for all subcontractors with the amount of insurance as required herein. Contractor shall include New York Construction Certificate of Liability Insurance Addendum – Accord Form 855 with the Certificate of Insurance.

**§ 11.1.1.2** All claims against the Contractor or its subcontractors, arising from the performance of the work or conditions incidental thereto, must be investigated immediately by the insurance company furnishing the applicable coverage. The Contractor shall require the insurance company to furnish, to the Architect and Owner, written reports following the investigation and the disposition of each claim or demand by the owner; a status report shall be provided to the Owner and Architect on all claims more than two months outstanding.

**§ 11.1.1.3** All insurance coverage furnished by subcontractors shall remain in force until their work has been completed and the subcontractor does not intend to gain further access to the site, and the Contractor has released said subcontractor from further liability associated therewith. All liability insurance furnished by the Contractor shall remain in force during the time intervals defined Article 8 – Time in General Conditions of the Contract for Construction and Supplementary Conditions. All property insurance furnished by Contractor shall remain in force until Owner approves Architect's Certificate of Substantial Completion and has made final payment to Contractor.

**§ 11.1.1.4** The kinds and amounts of insurance are as follows:

- .1 Worker's Compensation and Employer's Liability:** A policy shall be issued in compliance with the provisions of the Worker's Compensation Law.
- .2 Non-Occupational Disability Benefits:** A policy shall be issued in compliance with the provisions of the Disability Benefits Law.
- .3 Comprehensive General Liability** having limits of not less than:

|                                                           |             |
|-----------------------------------------------------------|-------------|
| General Aggregate (except Products Complete & Operations) | \$2,000,000 |
| Products Complete & Operations Aggregate                  | \$1,000,000 |



**.4 BODILY INJURY LIABILITY + PROPERTY DAMAGE LIABILITY** having limits of not less than the following:

|                       |                                |
|-----------------------|--------------------------------|
| Combined single limit | \$1,000,000.00 Each Occurrence |
|                       | \$2,000,000.00 Aggregate       |

for all damages arising during the life of the Contract, and shall include at least the following designated hazards:

- a. Premises and Operations
- b. Independent Contractors
- c. Completed Operations, including products
- d. Broad Form Property Damage, including "XCU" (explosion, collapse, and underground)
- e. Contractual Liability, covering indemnification assumed per requirements of Article 11 (AIA Document A232 -2019 General Conditions of the Contract for Construction, Construction Manager as advisor edition and Supplementary Conditions.
- f. Fire damage.
- g. Personal and Advertising Injury with Employment Exclusion deleted.
- h. Labor Law coverage is mandatory for all General Liability Policies.

Completed projects shall carry General Liability coverage for 2 years after substantial completion.

**.5 Pollution/Special Hazards Liability:** Provide coverage for legal liability and expense for damage to property or bodily injury and death with respect to the removal, disturbance, handling, and disposal of contaminated or hazardous materials under this contract by the Contractor or any person or organization employed directly or indirectly by the Contractor. (NOTE: This coverage is required only for those contracts which contain work involving Asbestos Abatement Lead Hazard Control work, PCB Containing Material Removal, or Petroleum Remediation.) If included in Contractor's Umbrella Policy, this shall be detailed in the Umbrella Policy Documents.

|                       |                                |
|-----------------------|--------------------------------|
| Combined single limit | \$1,000,000.00 Each Occurrence |
|                       | \$2,000,000.00 Aggregate       |

**.6 Comprehensive Automobile Liability** (including non-owned and hire automobiles), having limits of liability not less than \$1,000,000.00.

**.7 Umbrella Liability** (mandatory):

\$2,000,000.00 for Contracts under \$2,000,000.00  
\$5,000,000.00 for Contracts exceeding \$2,000,000.00  
\$10,000,000.00 for Contracts exceeding \$7,000,000.00  
\$15,000,000.00 for Contracts exceeding \$10,000,000.00  
Labor Law Coverage is mandatory for all Umbrella Liability Policies

**.8 Property Insurance (Builders Risk/Installation Floater):** To be provided by the Owner.

Each Contractor is responsible for all tools, equipment, materials, Work, etc., until Substantial Completion and possession by the Owner. Each Contractor shall provide insurance for theft as he may require for himself, his Subcontractors, and his employees' protection). The insurance coverage referred to in this subparagraph shall be in accordance with a standard Builder's Risk Policy used in the State where the project is located.

The Owner does not waive any rights of recovery or provide any waivers of subrogation for losses caused by negligent acts of the aforementioned parties. Any right of recovery or subrogation shall not affect payment of claims made by the Property Insurer to all the aforementioned parties including any negligent party.

**.9 Owner's Protective Liability:** Furnish to the Owner complete Owner's Protective Liability Insurance in the amounts specified in Coverage .3 above for Personal Bodily Injury Liability Insurance and for Property Damage Liability Insurance.

- .10 Additional Coverages:** The Architect, Construction Manager and Owner along with their respective officers, agents, and employees shall be named as additional insured for ongoing operations and products/completed operations on all Contractors' comprehensive general and automobile liability policies, bodily injury and property damage liability policies and umbrella liability policies which all must be primary and non-contributory with respect to additional insured's.
- .11 Per Project Aggregate:** Provide full aggregate general liability limits of each project.
- .12 Waiver of Subrogation:** To the fullest extent permitted by state law, a waiver of subrogation clause shall be added to the general liability, auto, and worker's compensation policies in favor of the Owner, its officers, agents, or employees with respect to this project. The Owner does not waive any rights of recovery or provide any waivers of subrogation for losses caused by negligent acts of the aforementioned parties. Any right of recovery or subrogation shall not affect payment of claims made by the Property Insurer to all the aforementioned parties including any negligent party.";

**§ 11.1.1.5** The Contractor shall not commence Work at the project site under this Contract until Contractor has obtained all the insurance required herein and until such insurance has been accepted by the Owner, nor shall Work be commenced on their subcontracts until all similar insurance required of the Subcontractors has been obtained and accepted by the Owner.

**§ 11.1.2** The Contractor shall provide surety bonds of the types, for such penal sums, and subject to such terms and conditions as required by the Contract Documents. The Contractor shall purchase and maintain the required bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located. Each Contractor shall furnish Bonds covering the faithful performance of the Contract and the payment of all obligations arising thereunder in the amount of 100% of the accepted bid on the form indicated in the Information to Bidders, with such Sureties as may be agreeable to the Owner. The Premiums shall be paid by the Contractor.

**§ 11.1.2.1** The Contractor shall deliver the required Bond dated as of the date of the Contract or applicable letter of intent, whichever is earlier, to the Owner no later than the date of execution of the Contract, or if the Work is commenced prior thereto in response to a Notice to Proceed, the Contractor shall, prior to commencement of the Work, submit evidence satisfactory to the Owner that such Bond will be issued."

**§ 11.1.2.2** The Payment and Performance Bonds shall be written on AIA Document A312 Series and the Warranty Bond shall be written on AIA Document A313-2020 or such other forms as the Owner may approve.

**§ 11.1.2.3** The Contractor shall require the attorney-in-fact who executes the required Bonds on behalf of the Surety to affix thereto a certified and current copy of the power of attorney.

**§ 11.1.2.4** The Contractor shall provide the name and address of Surety for process of service as well as supply the contact information for the Surety representative responsible for the Bond, including the individual's name, address, telephone number, fax number and email address."

**§ 11.1.2.5** The Performance and Payment Bonds shall remain in full force and effect through the warranty period.  
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**§ 11.1.3.1** The Contractor shall not commence Work at the project site under this Contract until Contractor has obtained all the insurance required herein and until such insurance has been accepted by the Owner, nor shall Work be commenced on their subcontracts until all similar insurance required of the Subcontractors has been obtained and accepted by the Owner.

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**§ 11.3.1.1** As relates to § 11.3, the Owner does not waive any rights of recovery or provide any waivers of subrogation for losses caused by negligent acts of the aforementioned parties. Any right of recovery or subrogation shall not affect payment of claims made by the Property Insurer to all the aforementioned parties including any negligent party.

...

## **§ 11.6 Appearance of Counsel**

**§ 11.6.1** If an action for bodily injury and/or property damage is commenced against Owner or Architect, which in the opinion of the Owner's Architect's legal counsel or insurance coordinator is covered by the indemnity provisions of Article 3, Contractor shall, upon Owner's written request, promptly cause Contractor's insurance carrier to have its attorneys appear timely in the action on behalf of Owner and/or Architect and provide the defense of Owner and/or Architect.

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**§ 12.2.2.3** The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Section 12.2. Exception: Any correction made under this 12.2.2 or under any other guarantee or warranty required by or included in the Contract Documents shall likewise be subject to correction at Contractor's own expense if it is found not to be in accordance with the Contract Documents within one year after the date that such correction is accepted by the Owner.

**§ 12.2.2.4** The guarantee-warranties required by § 12.2.2 shall be written in a form acceptable to the Owner, properly sworn to and signed by a responsible officer of the Contractor's firm.

**§ 12.2.2.5** The Performance and Payment Bonds shall remain in effect and full force through this period.

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**§ 12.3.1** The Owner, with the advice of the Construction Manager and assistance of the Architect, shall determine the adjustment to the Contract Sum. The Contractor shall bear all direct, indirect and consequential costs attributable to the evaluation of and decision to accept such defective Work. Such costs for the efforts of the Construction Manager and Architect (at their current billing rates) and any other costs to the Owner will be charged to the Contractor through Change Order procedures.

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The Contract shall be governed by the law of the place where the Project is located ~~excluding that jurisdiction's choice of law rules. If the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4.~~ located.

...

**§ 13.2.2** ~~The Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project, if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate the assignment.~~

## **PAGE 54**

Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due ~~at the rate the parties agree upon in writing or, in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.~~ a rate of 1% per annum.

...

**§ 14.1.3** If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon ~~seven~~ thirty days' notice to the Owner, Construction Manager and Architect, ~~and upon the failure of the Owner to cure the alleged grounds for termination within 14 days following receipt of said notice,~~ terminate the Contract and recover from the Owner payment for Work executed, as well as reasonable overhead and profit on Work not executed, and costs incurred by reason of such termination.

...

.1 ~~repeatedly~~ refuses or fails to supply enough properly skilled workers or proper materials;

...

.3 ~~repeatedly~~ disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or

.4 otherwise is guilty of ~~substantial~~ breach of a provision of the Contract Documents.

.5 files for bankruptcy or other debtor insolvency relief;

.6 an act of omission by the Contractor that stops, delays, interferes with or damages the Work;

.7 any other failure by the Contractor to perform any other terms and conditions of their Contract;

.8 disregards the authority of the Owner.

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§ 14.3.2 The Contract Sum and the Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay, or interruption under Section 14.3.1. ~~Adjustment of the Contract Sum shall include profit.~~ No adjustment shall be made to the extent:

...

§ 14.4.3 In case of such termination for the Owner's convenience, the Owner shall pay the Contractor for Work properly executed; costs incurred by reason of the termination, including costs attributable to termination of Subcontracts; and the termination fee, if any, set forth in the Agreement ~~executed~~.

...

§ 15.1.1 **Definition.** A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, a change in the Contract Time, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim. ~~This Section 15.1.1 does not require the Owner to file a Claim in order to impose liquidated damages in accordance with the Contract Documents.~~ The Owner may, but is not required to, comply with the provisions of Article 15 when filing a Claim.

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§ 15.1.2.1 ~~An additional Claim made after any initial Claim has been filed with the Owner, Construction Manager and Architect will not be considered unless submitted in a timely manner and in accordance with Article 15."~~

§ 15.1.2.2 ~~Any Claim shall be sufficiently detailed and descriptive to allow for a complete evaluation. The Contractor shall furnish any information requested by the Owner or Architect in connection with this investigation within ten (10) business days of that request. Failure to provide the requested information shall constitute a waiver of the Claim.~~

§ 15.1.2.3 ~~All written Claims for additional cost, additional time, or damages shall include the time of occurrence, location and other identifying factors and shall be supported, at a minimum, by letters, photographs, journals and diaries, instructions, or other pertinent and applicable records, as the Architect and Owner may require.~~

§ 15.1.3.1 ~~Claims by either the Owner or other parties or the Contractor, where the condition giving rise to the Claim is first discovered prior to expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party Owner and to the Initial Decision Maker with a copy sent to the Construction Manager and Architect, if the Architect is not serving as the Initial Decision Maker. Claims by either party the Contractor under this Section 15.1.3.1 shall be initiated within 24-15 days after occurrence of the event giving rise to such Claim or within 24-15 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.~~

§ 15.1.3.2 ~~Claims by either the Owner or other parties or the Contractor, where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party. In such event, no decision by the Initial Decision Maker is required.~~

§ 15.1.3.3 ~~An additional Claim made after any initial Claim has been filed with the Owner and Architect will not be considered unless submitted in a timely manner and in accordance with Article 15.~~



**§ 15.1.3.4** Claims by the Contractor must be made by written notice in accordance with the following procedures:

- .1 The Contractor may submit a claim concerning a matter properly noticed in accordance with the time requirements of this Contract.
- .2 Failure by the Contractor to furnish the required claim documentation within the time set forth above shall constitute waiver of the Contractor's right to compensation for such claim.
- .3 Contractor shall furnish three (3) certified copies of the required claim documentation, with a copy submitted to the Owner and Architect. The claim documentation shall be complete when furnished. The evaluation of the Contractor's claim will be based, among other things, upon the Owner project records and the Contractor's furnished claim documentation.
- .4 Claim documentation shall conform to Generally Accepted Accounting Principles and shall be in the following format:
  - A. General Introduction
  - B. General Background Discussion
  - C. Issues
    - 1) Index of Issues (listed numerically)
    - 2) For each issue:
      - (a) Background
      - (b) Chronology
      - (c) Contractor's position (reason for Owner's potential liability)
      - (d) Supporting documentation of merit or entitlement
      - (e) Begin each issue on a new page
  - D. All critical path method schedules, (as planned, monthly updates, schedule revisions, and as-built) along with the computer disks of all schedules related to the claim.
  - E. Productivity exhibits (if appropriate)
  - F. Summary of Issues and Damages
- .5 Supporting documentation of merit for each issue shall be cited by reference, photocopies, or explanation. Supporting documentation may include, but shall not be limited to, general conditions; general requirements; technical specifications; drawings; correspondence; conference notes; shop drawings and submittals; shop drawing logs; survey books; inspection reports; delivery schedules; test reports; daily reports; subcontracts; fragmentary CPM schedules or time impact analyses; photographs; technical reports; requests for information; field instructions; and all other related records necessary to support the Contractor's claim.
- .6 Supporting documentation of damages for each issue shall be cited, photocopies, or explained. Supporting documentation may include, but shall not be limited to, any or all documents related to the preparation and submission of the bid; certified, detailed labor records including labor distribution reports; material and equipment procurement records; construction equipment ownership cost records or rental records; subcontractor or vendor files and cost records; service cost records; purchase orders; invoices; project as-planned and as-built cost records; general ledger records; variance reports; accounting adjustment records; and any other accounting materials necessary to support the Contractor's claim.
- .7 Each copy of the claim documentation shall be certified by a responsible officer of the Contractor in accordance with the requirements of these Contract Documents.

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**§ 15.1.7 Waiver of Claims for Consequential Damages.** The Contractor and Owner waive Claims against each other ~~waives all Claims against the Owner for consequential damages arising out of or relating to this Contract. This mutual waiver includes~~

- .1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and
- .2 waiver includes, but is not limited to, damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit except anticipated profit arising directly from the Work.

~~This mutual waiver losses and reputation damage, and for loss of profit. This waiver also is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing~~

contained in this Section 15.1.7 shall be deemed to preclude assessment of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents. Owner's termination of the Contract in accordance with Article 14, and the Contractor's sole rights to payment in the event of any termination of the Contract by the Owner are limited to the payments expressly set forth in Article 14.

#### **§ 15.1.8 Limitation and Waiver of Money Damages**

§ 15.1.8.1 Notwithstanding anything else set forth in the Contract Documents or otherwise, the Owner shall not be liable to the Contractor and/or any Subcontractor for Claims or damages of any nature caused by or arising out of delays, impacts on schedule, schedule acceleration, schedule compression or by any breach of contract, delay in performance or other act of neglect by other Contractors or Subcontractors having Contracts for performance of any portion of Work. Except to the extent, if any, expressly prohibited by law the Contractor agrees not to make any Claim for such damages. The sole remedy against the Owner for delays shall be the allowance of additional time for completion of the Work, the amount of which shall be subject to the Claims procedure set forth herein. The Contractor understands that it hereby agrees not to make, and hereby waives, any Claim for damages for delay from any cause whatsoever, including but not limited to, those resulting from increased labor or material costs; schedule acceleration, schedule compression, directions given or not given by the Construction Manager, Owner or Architect, including but not limited to scheduling and coordination of the Work; the Architect's preparation of Drawings and Specifications; the Architect's review of shop drawings and requests for instruction(s); or on account of any delay, obstruction or hindrance for any other cause whatsoever by the Owner, Construction Manager, Architect or any other Contractor on the project whether or not foreseeable or anticipated. The Contractor agrees that no monetary recovery may be obtained by the Contractor for any of the foregoing against the Owner, Construction Manager or the Architect based upon any reason, and it is emphasized that the Contractor's sole remedy for any of the foregoing shall be an extension of time, if appropriate.

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§ 15.2.1 ~~Claims.~~ Claims by the Contractor, excluding those where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2 or arising under Sections 10.3, 10.4, and 11.5, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim. If an initial decision has not been rendered within 30 days after the Claim has been referred to the Initial Decision Maker, the party asserting the Claim may demand mediation and binding dispute resolution without a decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

§ 15.2.2 The Initial Decision Maker will review Claims and within ten days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, ~~or~~ (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve ~~the Claim.~~ the Claim, or (6) submit a schedule to the parties indicating when the Architect expects to take action.

...

§ 15.2.5 The Initial Decision Maker will render an initial decision approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties, the Construction Manager, and the Architect, if the Architect is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties but subject to mediation and, if the parties fail to resolve their dispute through mediation, to ~~binding dispute resolution.~~ litigation.

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§ 15.3.2 The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedures in effect on the date of the Agreement. ~~mediation.~~ A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation.

The request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order. If an arbitration is stayed pursuant to this Section 15.3.2, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.

...

#### **§ 15.4 Arbitration Litigation**

**§ 15.4.1** If the parties have selected arbitration as the method for binding dispute resolution in the Agreement, any Claim subject to, but not resolved by, mediation shall be subject to arbitration which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules in effect on the date of the Agreement. The Arbitration shall be conducted in the place where the Project is located, unless another location is mutually agreed upon. A demand for arbitration shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the arbitration. The party filing a notice of demand for arbitration must assert in the demand all Claims then known to that party on which arbitration is permitted to be demanded.

Claims that have not been satisfactorily resolved by other means shall be subject to litigation in accordance with law. The Contractor shall comply with any applicable statutory requirements regarding Notice of Claim and with any applicable Statute of Limitations provisions. In the event the Contractor serves a Notice of Claim to the Owner, the Owner may, as a condition precedent to litigation, require the Contractor to submit to an examination under oath by an attorney or other representative of the Owner, and to provide documentary evidence reasonably requested in connection with the examination. The venue of any litigation shall be New York State Supreme Court in the county in which the Project is located. The prevailing party of the litigation shall be entitled to reasonable attorneys' fees and necessary disbursements. **§ 15.4.1.1** A demand for arbitration shall be made no earlier than concurrently with the filing of a request for mediation, but in no event shall it be made after the date when the institution of legal or equitable proceedings based on the Claim would be barred by the applicable statute of limitations. For statute of limitations purposes, receipt of a written demand for arbitration by the person or entity administering the arbitration shall constitute the institution of legal or equitable proceedings based on the Claim.

**§ 15.4.2** The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.

**§ 15.4.3** The foregoing agreement to arbitrate and other agreements to arbitrate with an additional person or entity duly consented to by parties to the Agreement, shall be specifically enforceable under applicable law in any court having jurisdiction thereof.

#### **§ 15.4.4 Consolidation or Joinder**

**§ 15.4.4.1** Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party may consolidate an arbitration conducted under this Agreement with any other arbitration to which it is a party provided that (1) the arbitration agreement governing the other arbitration permits consolidation, (2) the arbitrations to be consolidated substantially involve common questions of law or fact, and (3) the arbitrations employ materially similar procedural rules and methods for selecting arbitrator(s).

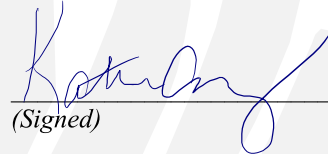
**§ 15.4.4.2** Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party may include by joinder persons or entities substantially involved in a common question of law or fact whose presence is required if complete relief is to be accorded in arbitration, provided that the party sought to be joined consents in writing to such joinder. Consent to arbitration involving an additional person or entity shall not constitute consent to arbitration of any claim, dispute or other matter in question not described in the written consent.

**§ 15.4.4.3** The Owner and Contractor grant to any person or entity made a party to an arbitration conducted under this Section 15.4, whether by joinder or consolidation, the same rights of joinder and consolidation as those of the Owner and Contractor under this Agreement.

## **Certification of Document's Authenticity**

### **AIA® Document D401™ – 2003**

I, Katrina Asay, hereby certify, to the best of my knowledge, information and belief, that I created the attached final document simultaneously with its associated Additions and Deletions Report and this certification at 17:05:55 ET on 12/03/2021 under Order No. 4679228225 from AIA Contract Documents software and that in preparing the attached final document I made no changes to the original text of AIA® Document A232™ – 2019, General Conditions of the Contract for Construction, Construction Manager as Adviser Edition, as published by the AIA in its software, other than those additions and deletions shown in the associated Additions and Deletions Report.



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(Signed)

Executive Administrative Assistant

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(Title)

December 3, 2021

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(Dated)





**BCA Architects & Engineers**  
798 Cascadilla Street  
Suite C  
Ithaca, New York 14850  
Phone (607) 319-4053  
submittals@thebcgroup.com

## SHOP DRAWING SUBMITTAL FORM

**Project Name:** Port Jervis City School District  
Additions & Alterations to PJMS  
**BCA Project Number:** 2019-011 Ph1  
**Submittal Description:** \_\_\_\_\_  
**Contractor Project Number:** \_\_\_\_\_  
**Contractor Submittal Number:** \_\_\_\_\_

**Contractor's Name & Address:** \_\_\_\_\_

**Email Address:** \_\_\_\_\_

**Name & Address of Supplier:** \_\_\_\_\_

**Name of Manufacturer:** \_\_\_\_\_

**Specification Section:** \_\_\_\_\_

**Drawing No. / Detail Reference No.:** \_\_\_\_\_

**Deviations:**

**None:** \_\_\_\_\_

**As Listed:** \_\_\_\_\_

**If No, provide information per Specification  
& Substitution Forms**

**Item as Specified:**

**Yes:** \_\_\_\_\_

**No:** \_\_\_\_\_

In accordance with General Conditions of the Contract for Construction, by submitting Submittal/Shop Drawings, Product Data, Samples, and similar submittals, the Contractor represents to the Owner and Architect that the Contractor has (1) reviewed and approved them, (2) determined and verified materials, field measurements and field construction criteria related thereto, or will do so, and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

☐ This item requires  
Electrical Coordination

☐ This item requires  
Plumbing/Mechanical Coordination

**Contractor Review and Coordination By:** \_\_\_\_\_

**For Architect/Engineer's Use Only:**

**Submittal No.:** \_\_\_\_\_

☐ No Exceptions Taken  
☐ Reviewed

☐ Exception as Noted  
☐ Correspondence Attached

☐ Resubmit  
☐ For Construction Accordance  
to Notations Revise and Resubmit

In accordance with the General Conditions of the Contract for Construction, the Architect is reviewing, approving or taking action upon this submittal for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect's review of the Contractor's submittals shall not relieve the Contractor of their obligations of the Contract/Work. The Architect's review shall not constitute approval of safety precautions or of any construction means, methods, techniques, sequences, or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component

☐ Electrical Coordination  
☐ Plumb'g/Mechanical Coordination

☐ Electrical Coordination Not required.  
☐ Plumbing/Mechanical Coordination Not required.

**Date Reviewed:** \_\_\_\_\_

**By:** \_\_\_\_\_

BCA Architects & Engineers - MPE Department

**Date Reviewed:** \_\_\_\_\_

**By:** \_\_\_\_\_

BCA Architects & Engineers - Architect

**Comments:**

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

**Copy To:**

- ☐ Office  
☐ Owner  
☐ Field  
☐ Contractor

**Date Received:** \_\_\_\_\_

**Date Returned:** \_\_\_\_\_

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# Statement of Special Inspections – Architectural & MEP

Project: \_\_\_ Additions & Alterations to Port Jervis Middle School

Project No.: 2019-011 PH1 \_\_\_

Location: \_\_\_ 118 East Main Street, Port Jervis, New York 12771

Owner: \_\_\_ Port Jervis City School District

Design Professional in Responsible Charge: **BCA Architects & Engineers, 798 Cascadilla Street, Ithaca, NY 14850**

This *Statement of Special Inspections* is submitted as a condition for permit issuance in accordance with the Special Inspection and Structural Testing requirements of the Building Code. It includes a schedule of Special Inspection services applicable to this project as well as the name of the Special Inspection Coordinator and the identity of other approved agencies to be retained for conducting these inspections and tests. This *Statement of Special Inspections* encompass the following disciplines:

☐ Structural    ☒ Architectural    ☒ Mechanical/Electrical/Plumbing    ☐ Other:

The Special Inspection Coordinator shall keep records of all inspections and shall furnish inspection reports to the Building Official and the Registered Design Professional (RDP) in Responsible Charge. Discovered discrepancies shall be brought to the immediate attention of the Contractor for correction. If such discrepancies are not corrected, the discrepancies shall be brought to the attention of the Building Official and the RDP in Responsible Charge. The Special Inspection program does not relieve the Contractor of his or her responsibilities.

Interim reports shall be submitted to the Building Official and the RDP in Responsible Charge.

A *Final Report of Special Inspections* documenting completion of all required Special Inspections, testing and correction of any discrepancies noted in the inspections shall be submitted prior to issuance of a Certificate of Use and Occupancy.

Job site safety and means and methods of construction are solely the responsibility of the Contractor.

Interim Report Frequency:    ☐ Final Report Only    ☐ at Completion    ☐ Other:  
                                         ☐ Monthly    ☒ at Completion of each material

Prepared by:

Scott J. Duell, R.A.

(type or print name)



12-6-2021

Signature

Date

BCA Architects & Engineers

12-6-2021

Architect

Date

Type name here



Owner's Authorization:

Code Enforcement Officer:

Signature

Date

Signature

Date

# Schedule of Inspection and Testing Agencies

This Statement of Special Inspections / Quality Assurance Plan includes the following building systems:

| Yes                                 | No                       | System                 | Yes                                 | No                       | System                                         |
|-------------------------------------|--------------------------|------------------------|-------------------------------------|--------------------------|------------------------------------------------|
| <input type="checkbox"/>            | <input type="checkbox"/> | Steel Construction     | <input type="checkbox"/>            | <input type="checkbox"/> | Seismic Resistance                             |
| <input type="checkbox"/>            | <input type="checkbox"/> | Cold Formed Metal Deck | <input type="checkbox"/>            | <input type="checkbox"/> | Testing for Seismic Resistance                 |
| <input type="checkbox"/>            | <input type="checkbox"/> | Concrete Construction  | <input type="checkbox"/>            | <input type="checkbox"/> | Sprayed Fire-Resistant Coatings                |
| <input type="checkbox"/>            | <input type="checkbox"/> | Masonry Construction   | <input type="checkbox"/>            | <input type="checkbox"/> | Mastic and Intumescent Fire-Resistant Coatings |
| <input type="checkbox"/>            | <input type="checkbox"/> | Wood Construction      | <input type="checkbox"/>            | <input type="checkbox"/> | Exterior Insulation & Finish System (EIFS)     |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | Soils and Foundations  | <input checked="" type="checkbox"/> | <input type="checkbox"/> | Fire Resistant Penetrations and Joints         |
| <input type="checkbox"/>            | <input type="checkbox"/> | Fabricated Items       | <input type="checkbox"/>            | <input type="checkbox"/> | Smoke Control System                           |
| <input checked="" type="checkbox"/> | <input type="checkbox"/> | Wind Resistance        | <input type="checkbox"/>            | <input type="checkbox"/> | Alternate Materials & Systems / Special Cases  |

| Special Inspection Agencies                                        | Firm                       | Address, Telephone, e-mail                     |
|--------------------------------------------------------------------|----------------------------|------------------------------------------------|
| 1. Special Inspector                                               | TBD                        |                                                |
| 2. Inspector                                                       | TBD                        |                                                |
| 3. Inspector                                                       | TBD                        |                                                |
| 4. Testing Agency                                                  | TBD                        |                                                |
| 5. Testing Agency                                                  | TBD                        |                                                |
| 6. Other                                                           |                            |                                                |
| 7. Registered Design Professional (RDP) for Structural Engineering | BCA Architects & Engineers | 327 Mullin Street<br>Watertown, New York 13601 |

Note: In accordance with BCNYS §1703.1.1 and §1704.2 the inspection and testing agencies shall be engaged by the Owner or the Owner's Agent, and not by the Contractor or Subcontractor whose work is to be inspected or tested. Any conflict of interest must be disclosed to the Building Official, prior to commencing work.

# Quality Assurance Plan

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## Quality Assurance for Seismic Resistance

Seismic Design Category

Quality Assurance Plan Required (Y/N)

Description of seismic force resisting system and designated seismic systems subject to special inspections (BCNYS §1704.3.2):

*NONE*

## Quality Assurance for Wind Requirements

Basic Wind Speed (3 second gust)

*V<sub>ult</sub>=120mph*

Wind Exposure Category

*B*

Quality Assurance Plan Required (Y/N)

*N*

Description of wind force resisting system and designated wind resisting components subject to special inspections (BCNYS §1704.3.3):

*NONE*

## Contractor Statement of Responsibility

Each contractor responsible for the construction or fabrication of a system or component designated above must submit a written Statement of Responsibility (BCNYS §1704.4).

|                                                                                   |                                                                                                                                                                                                                                                                                                                           |                                                                                                      |                        |
|-----------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------|------------------------|
|  | <b>BCA ARCHITECTS &amp; ENGINEERS</b><br><b>Watertown / Ithaca / Saratoga Springs</b>                                                                                                                                                                                                                                     | <b>STATEMENT OF SPECIAL INSPECTIONS AND TESTS</b><br>As required by the Building Code of NYS (BCNYS) |                        |
|                                                                                   | BCNYS §1704.3 requires the project Design Professional to complete the Statement of Special Inspections and Tests. Completion of the Statement of Special Inspections & Tests and submission to the Code Enforcement Officer with the Construction Permit Application as a condition for issuance of the Building Permit. |                                                                                                      |                        |
| Project Title: Additions & Alterations to Port Jervis Middle School               |                                                                                                                                                                                                                                                                                                                           |                                                                                                      |                        |
| BCA Project #:2019-011 PH1                                                        |                                                                                                                                                                                                                                                                                                                           | Client Project No:                                                                                   |                        |
| Project Address: <u>118 East Main Street, Port Jervis, New York 12771</u>         |                                                                                                                                                                                                                                                                                                                           |                                                                                                      |                        |
| Building Information: <u>    </u>                                                 |                                                                                                                                                                                                                                                                                                                           |                                                                                                      |                        |
| Name of Person Completing this Statement<br><u>Scott Duell</u>                    |                                                                                                                                                                                                                                                                                                                           | Phone<br><u>(607) 319-4053</u>                                                                       | Date<br><u>12/6/21</u> |
| Comments<br><u>    </u>                                                           |                                                                                                                                                                                                                                                                                                                           |                                                                                                      |                        |

| INSPECTION AND TESTING (Continuous & Periodic is as Defined by the BCNYS)                                                                                                                           | CONTINUOUS | PERIODIC    | REFERENCE STANDARD     | BCNYS REFERENCE | CHECK IF REQUIRED        | IDENTIFY SPEC SECTION AND PROVIDE CLARIFYING NOTES IF NECESSARY (the default spec sections listed may need to be modified) |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-------------|------------------------|-----------------|--------------------------|----------------------------------------------------------------------------------------------------------------------------|
| <b>A. STEEL CONSTRUCTION (AISC 360-16)</b>                                                                                                                                                          |            |             |                        |                 |                          |                                                                                                                            |
| 1. Minimum inspections <u>prior</u> to welding.                                                                                                                                                     |            | X           | AISC 360 Table N5.4-1  | 1705.2.1        | <input type="checkbox"/> | See inspection specific AISC details                                                                                       |
| 2. Minimum inspections <u>during</u> welding.                                                                                                                                                       |            | X           | AISC 360 Table N5.4-2  | 1705.2.1        | <input type="checkbox"/> | See inspection specific AISC details                                                                                       |
| 3. Minimum inspections <u>after</u> welding.                                                                                                                                                        |            | X           | AISC 360 Table N5.4-3  | 1705.2.1        | <input type="checkbox"/> | See inspection specific AISC details                                                                                       |
| 4. Nondestructive Testing (NDT) of welded joints                                                                                                                                                    |            | X           | AISC 360 N5.5 AWS D1.1 | 1705.2.1        | <input type="checkbox"/> | See inspection specific AISC details                                                                                       |
| 5. CJP Groove Weld NDT:<br>a. For Risk Category II<br>b. For Risk Category III and IV                                                                                                               |            | 10%<br>100% | AISC 360 N5.5          | 1705.2.1        | <input type="checkbox"/> | See inspection specific AISC details                                                                                       |
| 6. Minimum inspections <u>prior</u> to high-strength bolting                                                                                                                                        |            | X           | AISC 360 Table N5.6-1  | 1705.2.1        | <input type="checkbox"/> | See inspection specific AISC details                                                                                       |
| 7. Minimum inspections <u>during</u> high-strength bolting.                                                                                                                                         |            | X           | AISC 360 Table N5.6-2  | 1705.2.1        | <input type="checkbox"/> | See inspection specific AISC details                                                                                       |
| 8. Minimum inspections <u>after</u> high-strength bolting. Document acceptance or rejection of bolted connections.                                                                                  |            | X           | AISC 360 Table N5.6-3  | 1705.2.1        | <input type="checkbox"/> | See inspection specific AISC details                                                                                       |
| 9. Inspect fabricated or erected steel frame as appropriate to verify compliance with the construction and approved shop drawings. Inspect braces, stiffeners, member locations, and joint details. |            | X           | AISC 360 N5.7          | 1705.2.1        | <input type="checkbox"/> | See inspection specific AISC details                                                                                       |
| 10. Inspect during placement of anchor rods and other embedment's supporting                                                                                                                        |            | X           | AISC 360 N5.7          | 1705.2.1        | <input type="checkbox"/> | See inspection specific AISC details                                                                                       |

| INSPECTION AND TESTING (Continuous & Periodic is as Defined by the BCNYS)                                                                                                                                                                                                                                                    | CONTINUOUS | PERIODIC | REFERENCE STANDARD                         | BCNYS REFERENCE          | CHECK IF REQUIRED        | IDENTIFY SPEC SECTION AND PROVIDE CLARIFYING NOTES IF NECESSARY (the default spec sections listed may need to be modified) |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------|--------------------------------------------|--------------------------|--------------------------|----------------------------------------------------------------------------------------------------------------------------|
| structural steel for compliance with the construction and approved shop drawings.                                                                                                                                                                                                                                            |            |          |                                            |                          |                          |                                                                                                                            |
| <b>11.</b> Inspect Composite Construction prior to concrete placement: <ul style="list-style-type: none"> <li><b>a.</b> Placement and installation of steel deck</li> <li><b>b.</b> Placement and installation of steel headed stud anchors</li> <li><b>c.</b> Document acceptance or rejection of steel elements</li> </ul> | X          |          | AISC 360 N6.1                              | 1705.2.1                 | <input type="checkbox"/> | See inspection specific AISC details                                                                                       |
| <b>B. COLD-FORMED STEEL DECK (SDI QA/QC-17)</b>                                                                                                                                                                                                                                                                              |            |          |                                            |                          |                          |                                                                                                                            |
| <b>1.</b> Inspection or Execution Tasks <u>Prior</u> to Deck Placement                                                                                                                                                                                                                                                       |            | X        | SDI QA/QC Table 1.1 A and B                | 1705.2.2                 | <input type="checkbox"/> |                                                                                                                            |
| <b>2.</b> Inspection or Execution Tasks <u>After</u> Deck Placement                                                                                                                                                                                                                                                          |            | X        | SDI QA/QC Table 1.2 A, B and C             | 1705.2.2                 | <input type="checkbox"/> |                                                                                                                            |
| <b>3.</b> Inspection or Execution Tasks <u>Prior</u> to Welding                                                                                                                                                                                                                                                              |            | X        | SDI QA/QC Table 1.3 A, B, C and D          | 1705.2.2                 | <input type="checkbox"/> |                                                                                                                            |
| <b>4.</b> Inspection or Execution Tasks <u>During</u> Welding                                                                                                                                                                                                                                                                | X          |          | SDI QA/QC Table 1.4 A, B, C and D          | 1705.2.2                 | <input type="checkbox"/> |                                                                                                                            |
| <b>5.</b> Inspection or Execution Tasks <u>After</u> Welding                                                                                                                                                                                                                                                                 |            | X        | SDI QA/QC Table 1.5 A, B, C and D          | 1705.2.2                 | <input type="checkbox"/> |                                                                                                                            |
| <b>6.</b> Inspection or Execution Tasks <u>Prior</u> Mechanical Fastening                                                                                                                                                                                                                                                    | X          |          | SDI QA/QC Table 1.6 A, B and C             | 1705.2.2                 | <input type="checkbox"/> |                                                                                                                            |
| <b>7.</b> Inspection or Execution Tasks <u>During</u> Mechanical Fastening                                                                                                                                                                                                                                                   |            | X        | SDI QA/QC Table 1.7 A and B                | 1705.2.2                 | <input type="checkbox"/> |                                                                                                                            |
| <b>8.</b> Inspection or Execution Tasks <u>After</u> Mechanical Fastening                                                                                                                                                                                                                                                    |            | X        | SDI QA/QC Table 1.8 A, B, C, D and E       | 1705.2.2                 | <input type="checkbox"/> |                                                                                                                            |
| <b>C. OPEN-WEB STEEL JOISTS and JOIST GIRDERS (SJI 100-15 and 200-15)</b>                                                                                                                                                                                                                                                    |            |          |                                            |                          |                          |                                                                                                                            |
| <b>1.</b> Installation of open-web steel joists and joist girders.                                                                                                                                                                                                                                                           |            |          | SJI 100<br>SJI 200 composite               | Table 1705.2.3           | <input type="checkbox"/> |                                                                                                                            |
| <b>a.</b> End connections – welding or bolted.                                                                                                                                                                                                                                                                               | -          | X        | SJI CJ,SJI K,<br>SJI LH/DLH or SJI JG      | Table 1705.2.3<br>2207.1 | <input type="checkbox"/> |                                                                                                                            |
| <b>b.</b> Bridging – horizontal or diagonal <ul style="list-style-type: none"> <li>▪ Standard bridging</li> <li>▪ Bridging differing from the SJI specs</li> </ul>                                                                                                                                                           | -          | X        | SJI CJ,SJI K,<br>SJI LH/DLH or SJI JG      | Table 1705.2.3<br>2207.1 | <input type="checkbox"/> |                                                                                                                            |
| <b>D. COLD-FORMED STEEL TRUSSES SPANNING 60 FEET or GREATER</b>                                                                                                                                                                                                                                                              |            |          |                                            |                          |                          |                                                                                                                            |
| <b>1.</b> Verify the temporary installation of restraint / bracing is installed per approved truss submittal.                                                                                                                                                                                                                |            | X        | Approved truss submittal package           | 1705.2.4                 | <input type="checkbox"/> |                                                                                                                            |
| <b>2.</b> Verify the permanent individual truss member restraint / bracing is installed per approved truss submittal                                                                                                                                                                                                         |            | X        | Approved truss submittal package           | 1705.2.4                 | <input type="checkbox"/> |                                                                                                                            |
| <b>E. CONCRETE CONSTRUCTION</b>                                                                                                                                                                                                                                                                                              |            |          |                                            |                          |                          |                                                                                                                            |
| <b>1.</b> Inspect reinforcement, including prestressing tendons, and verify placement.                                                                                                                                                                                                                                       | -          | X        | ACI 318: Ch. 20, 25.2, 25.3, 26.6.1-26.6.3 | Table 1705.3, 1908.4     | <input type="checkbox"/> |                                                                                                                            |
| <b>2a.</b> Reinforcing bar welding: Verify weldability of reinforcing bars other than ASTM A706                                                                                                                                                                                                                              | -          | X        | AWS D1.4; ACI 318: 26.6.4                  | Table 1705.3, 1705.3.1   | <input type="checkbox"/> |                                                                                                                            |
| <b>2b.</b> Reinforcing bar welding:                                                                                                                                                                                                                                                                                          |            | X        | AWS D1.4;                                  | Table 1705.3,            | <input type="checkbox"/> |                                                                                                                            |

| INSPECTION AND TESTING (Continuous & Periodic is as Defined by the BCNYS)                                                                                                                                                                                                                                                                                                                                                                                                                                                        | CONTINUOUS | PERIODIC | REFERENCE STANDARD                              | BCNYS REFERENCE                                    | CHECK IF REQUIRED        | IDENTIFY SPEC SECTION AND PROVIDE CLARIFYING NOTES IF NECESSARY (the default spec sections listed may need to be modified) |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------|-------------------------------------------------|----------------------------------------------------|--------------------------|----------------------------------------------------------------------------------------------------------------------------|
| Inspect single-pass fillet welds, maximum $\frac{5}{16}$ "                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |            |          | ACI 318: 26.6.4                                 | 1705.3.1                                           |                          |                                                                                                                            |
| 2c. Reinforcing bar welding:<br>Inspect all other welds                                                                                                                                                                                                                                                                                                                                                                                                                                                                          | X          |          | AWS D1.4;<br>ACI 318: 26.6.4                    | Table 1705.3,<br>1705.3.1                          | <input type="checkbox"/> |                                                                                                                            |
| 3. Inspect anchors cast in concrete                                                                                                                                                                                                                                                                                                                                                                                                                                                                                              | -          | X        | ACI 318: 17.8.2                                 | Table 1705.3                                       | <input type="checkbox"/> |                                                                                                                            |
| 4a. Inspect anchors post-installed in hardened concrete members - Adhesive anchors installed in horizontally or upwardly inclined orientations to resist sustained tension loads.                                                                                                                                                                                                                                                                                                                                                | X          |          | ACI 318: 17.8.2.4                               | Table 1705.3<br>See NYS IBC<br>footnote b          | <input type="checkbox"/> |                                                                                                                            |
| 4b. Inspect anchors post-installed in hardened concrete members - Mechanical anchors and adhesive anchors not defined in 4a.                                                                                                                                                                                                                                                                                                                                                                                                     |            | X        | ACI 318: 17.8.2                                 | Table 1705.3<br>See NYS IBC<br>Footnote b          | <input type="checkbox"/> |                                                                                                                            |
| 5. Verify use of required design mix.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                            | -          | X        | ACI 318: Ch. 19, 26.4.3,<br>26.4.4              | Table 1705.3,<br>1904.1, 1904.2,<br>1908.2, 1908.3 | <input type="checkbox"/> |                                                                                                                            |
| 6. Prior to concrete placement, fabricate specimens for strength tests, perform slump and air content tests, and determine the temperature of the concrete.                                                                                                                                                                                                                                                                                                                                                                      | X          | -        | ASTM C172,<br>ASTM C31;<br>ACI 318: 26.5, 26.12 | Table 1705.3,<br>1908.10                           | <input type="checkbox"/> |                                                                                                                            |
| 7. Inspect concrete and shotcrete placement for proper application techniques.                                                                                                                                                                                                                                                                                                                                                                                                                                                   | X          | -        | ACI 318: 26.5                                   | Table 1705.3,<br>1908.6, 1908.7,<br>1908.8         | <input type="checkbox"/> |                                                                                                                            |
| 8. Verify maintenance of specified curing temperature & techniques                                                                                                                                                                                                                                                                                                                                                                                                                                                               | -          | X        | ACI 318:<br>26.5.3-26.5.5                       | Table 1705.3,<br>1908.9                            | <input type="checkbox"/> |                                                                                                                            |
| 9a. Inspect prestressed concrete for:<br>Application of prestressing forces                                                                                                                                                                                                                                                                                                                                                                                                                                                      | X          | -        | ACI 318: 26.10                                  | Table 1705.3                                       | <input type="checkbox"/> |                                                                                                                            |
| 9b. Inspect prestressed concrete for:<br>Grouting of bonded prestressing tendons.                                                                                                                                                                                                                                                                                                                                                                                                                                                | X          | -        | ACI 318: 26.10                                  | Table 1705.3                                       | <input type="checkbox"/> |                                                                                                                            |
| 10. Inspect erection of precast concrete members.                                                                                                                                                                                                                                                                                                                                                                                                                                                                                | -          | X        | ACI 318: Ch. 26.9                               | Table 1705.3                                       | <input type="checkbox"/> |                                                                                                                            |
| 11. Verify in-situ concrete strength, prior to stressing of tendons in post-tensioned concrete and prior to removal of shores and forms from beams & structural slabs.                                                                                                                                                                                                                                                                                                                                                           | -          | X        | ACI 318: 26.11.2                                | Table 1705.3                                       | <input type="checkbox"/> |                                                                                                                            |
| 12. Inspect formwork for shape, location, dimensions of the concrete member being formed.                                                                                                                                                                                                                                                                                                                                                                                                                                        | -          | X        | ACI 318: 26.11.1.2(b)                           | Table 1705.3                                       | <input type="checkbox"/> |                                                                                                                            |
| <b>F. MASONRY CONSTRUCTION (TMS 402-13) (TMS 602-13)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |            |          |                                                 |                                                    |                          |                                                                                                                            |
| <b>Level A:</b> <input type="checkbox"/> (basic) (non-essential)<br>Risk Category I, II or III designed using Prescriptive or Empirical design methods.<br><br><b>Level B:</b> <input checked="" type="checkbox"/> (intermediate) (non-essential / essential)<br>Risk Category I, II or III designed using Engineered design methods, or Risk Category IV using Prescriptive design method.<br><br><b>Level C:</b> <input type="checkbox"/> (rigorous) (essential)<br>Risk Category IV designed using Engineered design methods. |            |          |                                                 |                                                    |                          |                                                                                                                            |
| <b>Level A Quality Assurance of Masonry (TMS 402-13/ACI 530-13/ASCE 5-13 Table 3.1.1)</b>                                                                                                                                                                                                                                                                                                                                                                                                                                        |            |          |                                                 |                                                    |                          |                                                                                                                            |



| INSPECTION AND TESTING (Continuous & Periodic is as Defined by the BCNYS)                                                                                               | CONTINUOUS | PERIODIC | REFERENCE STANDARD                                                    | BCNYS REFERENCE | CHECK IF REQUIRED        | IDENTIFY SPEC SECTION AND PROVIDE CLARIFYING NOTES IF NECESSARY (the default spec sections listed may need to be modified) |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------|-----------------------------------------------------------------------|-----------------|--------------------------|----------------------------------------------------------------------------------------------------------------------------|
| <b>A1.</b> Verify compliance with the approved submittal and project specifications                                                                                     |            | X        | TMS 402, TMS 602, Table 3.1.1                                         | 1705.4          | <input type="checkbox"/> |                                                                                                                            |
| <b>Level B Quality Assurance of Masonry (TMS 402-13/ACI 530-13/ASCE 5-13 Table 3.1.2)</b>                                                                               |            |          |                                                                       |                 |                          |                                                                                                                            |
| <b>Minimum Tests:</b>                                                                                                                                                   |            |          |                                                                       |                 |                          |                                                                                                                            |
| <b>a.</b> Verification of slump flow and Visual Stability Index (VSI) as delivered to the project site in accordance with Art. 1.5 B.1.b.3 for self-consolidating grout |            | X        | TMS 402 Table 3.1.2                                                   | 1705.4          | <input type="checkbox"/> |                                                                                                                            |
| <b>b.</b> Verification of $f'_m$ and $f'_a$ in accordance w/ specification Art. 1.4B prior to construction except where exempted by TMS 402                             |            | X        | TMS 402 Table 3.1.2                                                   | 1705.4          | <input type="checkbox"/> |                                                                                                                            |
| <b>B1.</b> Verify compliance with approved submittals                                                                                                                   |            | X        | TMS 602 Art. 1.5                                                      | 1705.4          | <input type="checkbox"/> |                                                                                                                            |
| <b>B2. As masonry construction begins, verify the following are in compliance:</b>                                                                                      |            |          |                                                                       |                 |                          |                                                                                                                            |
| <b>a.</b> Proportions of site-prepared mortar                                                                                                                           |            | X        | TMS 602 Art. 2.1, 2.6 A                                               | 1705.4          | <input type="checkbox"/> |                                                                                                                            |
| <b>b.</b> Construction of mortar joints                                                                                                                                 |            | X        | TMS 602 Art. 3.3 B                                                    | 1705.4          | <input type="checkbox"/> |                                                                                                                            |
| <b>c.</b> Grade and size of prestressing tendons and anchorages                                                                                                         |            | X        | TMS 602 Art 2.4 B, 2.4 H                                              | 1705.4          | <input type="checkbox"/> |                                                                                                                            |
| <b>d.</b> Location of reinforcement, connectors, prestressing tendons and anchors                                                                                       |            | X        | TMS 602 Art. 3.4, 3.6 A                                               | 1705.4          | <input type="checkbox"/> |                                                                                                                            |
| <b>e.</b> Prestressing technique                                                                                                                                        |            | X        | TMS 602 Art. 3.6 B                                                    | 1705.4          | <input type="checkbox"/> |                                                                                                                            |
| <b>f.</b> Properties of thin-set mortar for ACC masonry                                                                                                                 | X (b)      | X (c)    | TMS 602 Art.2.1 C                                                     | 1705.4          | <input type="checkbox"/> | See table footnotes                                                                                                        |
| <b>B3. Prior to grouting, verify that the following are in compliance:</b>                                                                                              |            |          |                                                                       |                 |                          |                                                                                                                            |
| <b>a.</b> Grout space                                                                                                                                                   |            | X        | TMS 602 Art. 3.2 D, 3.2 F                                             | 1705.4          | <input type="checkbox"/> |                                                                                                                            |
| <b>b.</b> Grade, type and size of reinforcement and anchor bolts, and prestressing tendons and anchorages                                                               |            | X        | TMS 402 Sec 6.1 / TMS 602 Art. 2.4, 3.4                               | 1705.4          | <input type="checkbox"/> |                                                                                                                            |
| <b>c.</b> Placement of reinforcement, connectors and prestressing tendons and anchorages                                                                                |            | X        | TMS 402 Sec 6.1, 6.2.1, 6.2.6, 6.2.7 / TMS 602 Art. 3.2 E, 3.4, 3.6 A | 1705.4          | <input type="checkbox"/> |                                                                                                                            |
| <b>d.</b> Proportions of site prepared grout and prestressing grout for bonded tendons                                                                                  |            | X        | TMS 602 Art 2.6 B, 2.4 G1.b                                           | 1705.4          | <input type="checkbox"/> |                                                                                                                            |
| <b>e.</b> Construction or mortar joints                                                                                                                                 |            | X        | TMS 602 Art. 3.3 B                                                    | 1705.4          | <input type="checkbox"/> |                                                                                                                            |
| <b>B4. During Construction verify:</b>                                                                                                                                  |            |          |                                                                       |                 |                          |                                                                                                                            |
| <b>a.</b> Size and location of structural elements                                                                                                                      |            | X        | TMS 602 Art. 3.3 F                                                    | 1705.4          | <input type="checkbox"/> |                                                                                                                            |
| <b>b.</b> Type, size, & location of anchors, including other details of anchorage of masonry to structural members, frames                                              |            | X        | TMS 402 Sec 1.2.1e, 6.1.4.3, 6.2.1; 1.16.4.3, 1.17.1                  | 1705.4          | <input type="checkbox"/> |                                                                                                                            |
| <b>c.</b> Welding of reinforcement                                                                                                                                      | X          |          | TMS 402 Sec. 2.1.7.7.2, 3.3.3.4(c); 8.3.3.4(b)                        | 1705.4          | <input type="checkbox"/> |                                                                                                                            |
| <b>d.</b> Preparation, construction, protection of masonry during cold weather (temperature below 40°F) or hot weather (temperature above 90° F)                        |            | X        | TMS 602 Art. 1.8 C, 1.8 D                                             | 1705.4          | <input type="checkbox"/> |                                                                                                                            |
| <b>e.</b> Application and measurement of prestressing force                                                                                                             | X          |          | TMS 602 Art. 3.6 B                                                    | 1705.4          | <input type="checkbox"/> |                                                                                                                            |

| INSPECTION AND TESTING (Continuous & Periodic is as Defined by the BCNYS)                                                                                                                                                                                                | CONTINUOUS | PERIODIC | REFERENCE STANDARD                                                    | BCNYS REFERENCE | CHECK IF REQUIRED        | IDENTIFY SPEC SECTION AND PROVIDE CLARIFYING NOTES IF NECESSARY (the default spec sections listed may need to be modified) |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------|-----------------------------------------------------------------------|-----------------|--------------------------|----------------------------------------------------------------------------------------------------------------------------|
| f. Placement of grout and prestressing grout for bonded tendons is in compliance                                                                                                                                                                                         | X          |          | TMS 602 Art. 3.5, 3.6 C                                               | 1705.4          | <input type="checkbox"/> |                                                                                                                            |
| g. Placement of AAC masonry units and construction of thin-bed mortar joints                                                                                                                                                                                             | X(b)       | X (c)    | TMS 602 Art. 3.3 B.9, 3.3 F.1.b                                       | 1705.4          | <input type="checkbox"/> | See table footnotes                                                                                                        |
| h. Installation of post-installed anchors according to manufacturer's printed installation instructions. Verify anchor dimensions, adhesive identification and exp. Date, hole dimensions, edge distances, embedment depth, tightening torque, base material temperature | X(d)       | X(e)     |                                                                       |                 | <input type="checkbox"/> | See table footnotes                                                                                                        |
| B5. Observe preparation of grout specimens, mortar specimens, and/or prisms                                                                                                                                                                                              |            | X        | TMS 602 Art. 1.4B.2.a.3, 1.4 B.2.b.3, 1.4 B.2.c.3, 1.4B.3, 1.4 B.4    |                 | <input type="checkbox"/> |                                                                                                                            |
| <b>Footnotes:</b>                                                                                                                                                                                                                                                        |            |          |                                                                       |                 |                          |                                                                                                                            |
| (a) Frequency refers to the frequency of special inspections, which may be continuous during the task listed or periodic during the listed task, as defined in the table                                                                                                 |            |          |                                                                       |                 |                          |                                                                                                                            |
| (b) Required for the first 5000 sq. ft. of AAC masonry                                                                                                                                                                                                                   |            |          |                                                                       |                 |                          |                                                                                                                            |
| (c) Required after the first 5000 sq. ft. of AAC masonry                                                                                                                                                                                                                 |            |          |                                                                       |                 |                          |                                                                                                                            |
| (d) Required for the first 10% of each different type of anchor and/or installer                                                                                                                                                                                         |            |          |                                                                       |                 |                          |                                                                                                                            |
| (e) Required for the remaining 90% of each different type of anchor and/or installer                                                                                                                                                                                     |            |          |                                                                       |                 |                          |                                                                                                                            |
| <b>Level C Quality Assurance of Masonry (TMS 402-13/ACI 530-13/ASCE 5-13 Table 3.1.3)</b>                                                                                                                                                                                |            |          |                                                                       |                 |                          |                                                                                                                            |
| <b>Minimum Tests:</b>                                                                                                                                                                                                                                                    |            |          |                                                                       |                 |                          |                                                                                                                            |
| a. Verification of f' m and f' aac in accordance with Article 1.4 B prior to construction and for every 5,000 sq. ft. during construction                                                                                                                                |            | X        | TMS 402 Table 3.1.3                                                   | 1705.4          | <input type="checkbox"/> |                                                                                                                            |
| b. Verification of proportions of materials in premixed or preblended mortar, prestressing grout and grout other than self-consolidating grout, as delivered to the site                                                                                                 |            | X        | TMS 402 Table 3.1.3                                                   | 1705.4          | <input type="checkbox"/> |                                                                                                                            |
| c. Verification of Slump flow and VSI as delivered to the site in accordance with Article 1.5B.1.b.3 for self-consolidating grout                                                                                                                                        |            | X        | TMS 402 Table 3.1.3                                                   | 1705.4          | <input type="checkbox"/> |                                                                                                                            |
| C1. Verify compliance with the approved submittals                                                                                                                                                                                                                       |            | X        | TMS 602 Art. 1.5                                                      | 1705.4          | <input type="checkbox"/> |                                                                                                                            |
| <b>C2. Verify that the following are in compliance:</b>                                                                                                                                                                                                                  |            |          |                                                                       |                 |                          |                                                                                                                            |
| a. Proportions of site-prepared mortar, grout and prestressing tendons and anchorages                                                                                                                                                                                    |            | X        | TMS 602 Art 2.1, 2.6 A, 2.6 B, 2.6 C, 2.4 G.1.b                       | 1705.4          | <input type="checkbox"/> |                                                                                                                            |
| b. Grade, type, and size of reinforcement and anchor bolts, prestressing tendons and anchorages                                                                                                                                                                          |            | X        | TMS 402 Sect. 6.1 / TMS 602 Art. 2.4, 3.4                             | 1705.4          | <input type="checkbox"/> |                                                                                                                            |
| c. Placement of masonry units and construction of mortar joints                                                                                                                                                                                                          |            | X        | TMS 602 Art 3.3 B                                                     | 1705.4          | <input type="checkbox"/> |                                                                                                                            |
| d. Placement of reinforcement, connectors, prestressing tendons and anchorages                                                                                                                                                                                           | X          |          | TMS 402 Sec. 6.1, 6.2.1, 6.2.6, 6.2.7 / TMS 602 Art 3.2 E, 3.4, 3.6 A | 1705.4          | <input type="checkbox"/> |                                                                                                                            |
| e. Grout space prior to grouting                                                                                                                                                                                                                                         | X          |          | TMS 602 Art. 3.2 D, 3.2 F                                             | 1705.4          | <input type="checkbox"/> |                                                                                                                            |

| INSPECTION AND TESTING (Continuous & Periodic is as Defined by the BCNYS)                                                                                                                                                                                                | CONTINUOUS | PERIODIC | REFERENCE STANDARD                                                 | BCNYS REFERENCE  | CHECK IF REQUIRED                   | IDENTIFY SPEC SECTION AND PROVIDE CLARIFYING NOTES IF NECESSARY (the default spec sections listed may need to be modified) |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------|--------------------------------------------------------------------|------------------|-------------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| f. Placement of grout and prestressing grout for bonded tendons                                                                                                                                                                                                          | X          |          | TMS 602 Art. 3.5, 3.6 C                                            | 1705.4           | <input type="checkbox"/>            |                                                                                                                            |
| g. Size and location of structural elements                                                                                                                                                                                                                              |            | X        | TMS 602 Art. 3.3 F                                                 | 1705.4           | <input type="checkbox"/>            |                                                                                                                            |
| h. Types, size, and location of anchors including other details of anchorage of masonry to structural members, frames or other construction                                                                                                                              | X          |          | TMS 402 Sec. 1.2.1(e), 6.1.4.3, 6.2.1                              | 1705.4           | <input type="checkbox"/>            |                                                                                                                            |
| i. Welding of reinforcement                                                                                                                                                                                                                                              | X          |          | TMS 402 Sec. 8.1.6.7.2, 9.3.3.4 (c), 11.3.3.4(b)                   | 1705.4           | <input type="checkbox"/>            |                                                                                                                            |
| j. Preparation, construction and protection of masonry during cold weather (temperature below 40 F or hot weather (temperature above 90°F)                                                                                                                               |            | X        | TMS 602 Art. 1.8 C, 1.8 D                                          | 1705.4           | <input type="checkbox"/>            |                                                                                                                            |
| k. Application and measurement of prestressing force                                                                                                                                                                                                                     | X          |          | TMS 602 Art. 3.6 B                                                 | 1705.4           | <input type="checkbox"/>            |                                                                                                                            |
| l. Placement of AAC masonry units and construction of thin-bed mortar joints                                                                                                                                                                                             | X          |          | TMS 602 Art. 3.3 B.9, 3.3 F.1.b                                    | 1705.4           | <input type="checkbox"/>            |                                                                                                                            |
| m. Properties of thin-bed mortar for AAC masonry                                                                                                                                                                                                                         | X          |          | TMS 602 Art. 2.1 C.1                                               | 1705.4           | <input type="checkbox"/>            |                                                                                                                            |
| n. Installation of post-installed anchors according to manufacturer's printed installation instructions. Verify anchor dimensions, adhesive identification and exp. Date, hole dimensions, edge distances, embedment depth, tightening torque, base material temperature | X(b)       | X(c)     |                                                                    |                  | <input type="checkbox"/>            |                                                                                                                            |
| C3. Observe preparation of grout specimens. Mortar specimens and/or prisms                                                                                                                                                                                               | X          |          | TMS 602 Art. 1.4B.2.a.3, 1.4 B.2.b.3, 1.4 B.2.c.3, 1.4 B.3, 1.4 B4 | 1705.4           | <input type="checkbox"/>            |                                                                                                                            |
| D. Vertical Masonry Foundation Elements                                                                                                                                                                                                                                  |            | X        |                                                                    | 1705.4.2, 1705.4 | <input type="checkbox"/>            |                                                                                                                            |
| <b>Footnotes:</b>                                                                                                                                                                                                                                                        |            |          |                                                                    |                  |                                     |                                                                                                                            |
| (a) Frequency refers to the frequency of special inspections, which may be continuous during the task listed or periodic during the listed task, as defined in the table                                                                                                 |            |          |                                                                    |                  |                                     |                                                                                                                            |
| (b) Required for the first 10% of each different type of anchor and/or installer                                                                                                                                                                                         |            |          |                                                                    |                  |                                     |                                                                                                                            |
| (c) Required for the remaining 90% of each different type of anchor and/or installer                                                                                                                                                                                     |            |          |                                                                    |                  |                                     |                                                                                                                            |
| <b>G. WOOD CONSTRUCTION</b>                                                                                                                                                                                                                                              |            |          |                                                                    |                  |                                     |                                                                                                                            |
| 1. Inspect high-load diaphragms for grade/thickness of sheathing, nominal size of members, fastener size, number and spacing                                                                                                                                             |            | X        | Construction Documents                                             | 1705.5.1 2306.2  | <input type="checkbox"/>            | 06 1000 & 06 1753                                                                                                          |
| 2. Metal-plate-connected wood trusses spanning 60 feet or greater: temporary installation restraint / bracing and permanent individual truss member restraint / bracing                                                                                                  |            | X        | Applicable truss submittal package                                 | 1705.5.2         | <input type="checkbox"/>            |                                                                                                                            |
| <b>H. SOILS</b>                                                                                                                                                                                                                                                          |            |          |                                                                    |                  |                                     |                                                                                                                            |
| 1. Verify materials below shallow foundations are adequate to achieve the design bearing capacity                                                                                                                                                                        | -          | X        | Geotech Report, Contract Documents                                 | Table 1705.6     | <input checked="" type="checkbox"/> | 31 2323                                                                                                                    |

| INSPECTION AND TESTING (Continuous & Periodic is as Defined by the BCNYS)                                                                                                                                                                                              | CONTINUOUS | PERIODIC | REFERENCE STANDARD                 | BCNYS REFERENCE        | CHECK IF REQUIRED                   | IDENTIFY SPEC SECTION AND PROVIDE CLARIFYING NOTES IF NECESSARY (the default spec sections listed may need to be modified) |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------|------------------------------------|------------------------|-------------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| 2. Verify excavations are extended to proper depth and have reached proper material                                                                                                                                                                                    | -          | X        | Geotech Report, Contract Documents | Table 1705.6           | <input checked="" type="checkbox"/> | 31 2323                                                                                                                    |
| 3. Perform classification and testing of compacted fill materials                                                                                                                                                                                                      | -          | X        | Geotech Report, Contract Documents | Table 1705.6           | <input checked="" type="checkbox"/> | 31 2323                                                                                                                    |
| 4. Verify use of proper materials, densities and lift thicknesses during placement and compaction of compacted fill                                                                                                                                                    | X          | -        | Geotech Report, Contract Documents | Table 1705.6           | <input checked="" type="checkbox"/> | 31 2323                                                                                                                    |
| 5. Prior to placement of compacted fill, inspect subgrade and verify that site has been prepared properly                                                                                                                                                              | -          | X        | Geotech Report, Contract Documents | Table 1705.6           | <input checked="" type="checkbox"/> | 31 2323                                                                                                                    |
| 6. During fill placement inspector shall verify that proper materials and procedures are used per geo-report                                                                                                                                                           | X          |          | Geotech Report, Contract Documents | 1705.6                 | <input checked="" type="checkbox"/> | 31 2323                                                                                                                    |
| <b>I. DRIVEN DEEP FOUNDATIONS</b>                                                                                                                                                                                                                                      |            |          |                                    |                        |                                     |                                                                                                                            |
| 1. Verify element materials, sizes and lengths comply w/ the requirements                                                                                                                                                                                              | X          | -        | Geotech Report, Contract Documents | Table 1705.7           | <input type="checkbox"/>            |                                                                                                                            |
| 2. Determine capacities of test elements and conduct additional load tests, as require.                                                                                                                                                                                | X          | -        | Geotech Report, Contract Documents | Table 1705.7           | <input type="checkbox"/>            | 31 2323                                                                                                                    |
| 3. Inspect driving operations and maintain complete and accurate records for each element                                                                                                                                                                              | X          | -        | Geotech Report, Contract Documents | Table 1705.7           | <input type="checkbox"/>            | 31 2323                                                                                                                    |
| 4. Verify placement locations and plumbness, confirm type and size of hammer, record number of blows per foot of penetration, determine required penetrations to achieve design capacity, record tip and butt elevations and document any damage to foundation element | X          | -        | Geotech Report, Contract Documents | Table 1705.7           | <input type="checkbox"/>            |                                                                                                                            |
| 5. For steel elements, perform additional inspections in accordance with Code Section 1705.2                                                                                                                                                                           | -          | -        | Geotech Report, Contract Documents | Table 1705.7<br>1705.2 | <input type="checkbox"/>            |                                                                                                                            |
| 6. For concrete elements and concrete-filled elements, perform tests and additional special inspections in accordance w/ Code Section 1705.3                                                                                                                           | -          | -        | Geotech Report, Contract Documents | Table 1705.7<br>1705.3 | <input type="checkbox"/>            |                                                                                                                            |
| 7. For specialty elements, perform additional inspections as determined by the RDP in responsible charge                                                                                                                                                               | -          | -        | Geotech Report, Contract Documents | Table 1705.7           | <input type="checkbox"/>            |                                                                                                                            |
| <b>J. CAST-IN-PLACE DEEP FOUNDATIONS</b>                                                                                                                                                                                                                               |            |          |                                    |                        |                                     |                                                                                                                            |
| 1. Inspect drilling operations and maintain complete and accurate records for each element.                                                                                                                                                                            | X          | -        | Geotech Report, Contract Documents | Table 1705.8           | <input type="checkbox"/>            |                                                                                                                            |
| 2. Verify placement locations and plumbness, confirm element diameters, bell diameters (if applicable), lengths, embedment into bedrock (if applicable) and adequate end-bearing strata capacity. Record concrete or grout volumes.                                    | X          | -        | Geotech Report, Contract Documents | Table 1705.8           | <input type="checkbox"/>            |                                                                                                                            |

| INSPECTION AND TESTING (Continuous & Periodic is as Defined by the BCNYS)                                                                                                                                                                                                                                                                                                                                             | CONTINUOUS | PERIODIC | REFERENCE STANDARD                 | BCNYS REFERENCE                   | CHECK IF REQUIRED                   | IDENTIFY SPEC SECTION AND PROVIDE CLARIFYING NOTES IF NECESSARY (the default spec sections listed may need to be modified)                           |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------|------------------------------------|-----------------------------------|-------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3. For concrete elements, perform tests and additional special inspections in accordance with Code Section 1705.3. See Special Inspections Concrete Construction.                                                                                                                                                                                                                                                     | -          | -        | Geotech Report, Contract Documents | Table 1705.8, 1705.3              | <input type="checkbox"/>            |                                                                                                                                                      |
| <b>K. HELICAL PILE FOUNDATIONS</b>                                                                                                                                                                                                                                                                                                                                                                                    |            |          |                                    |                                   |                                     |                                                                                                                                                      |
| 1. Record installation equipment used, pile dimensions, tip elevations, final depth, final installation torque and other installation data as required by the RDP.                                                                                                                                                                                                                                                    | X          |          | Geotech Report, Contract Documents | 1705.9                            | <input type="checkbox"/>            |                                                                                                                                                      |
| <b>L. FABRICATED ITEMS</b>                                                                                                                                                                                                                                                                                                                                                                                            |            |          |                                    |                                   |                                     |                                                                                                                                                      |
| 1. The RDP shall identify any structural, load-bearing or lateral load-resisting members or assemblies that are specified to be fabricated off site i.e. in a fabricator's shop. Special inspections shall be required for these items unless:<br>a. The fabricator maintains approved detailed fabrication and quality control procedures that provide conformance to the approved construction documents & IBC 2018 |            |          |                                    | 1704.2.5<br>1704.2.5.1<br>1705.10 | <input type="checkbox"/>            | Structural Steel<br>Steel Joists, Girders<br>Precast Concrete<br>Prestressed Concrete<br>Wood Construction (trusses, walls, floors, roof assemblies) |
| b. The fabricator is registered and approved                                                                                                                                                                                                                                                                                                                                                                          |            |          |                                    | 1704.2.5.1                        | <input type="checkbox"/>            | Cold-formed steel trusses                                                                                                                            |
| <b>M. WIND-FORCE-RESISTANT ITEMS</b>                                                                                                                                                                                                                                                                                                                                                                                  |            |          |                                    |                                   |                                     |                                                                                                                                                      |
| 1. Structural Wood                                                                                                                                                                                                                                                                                                                                                                                                    | X          | X        |                                    | 1705.11.1                         | <input type="checkbox"/>            |                                                                                                                                                      |
| 2. Cold Formed Steel Lightweight Construction                                                                                                                                                                                                                                                                                                                                                                         |            | X        |                                    | 1705.11.2                         | <input type="checkbox"/>            |                                                                                                                                                      |
| 3. Components: Roof covering, roof deck, and roof framing connections                                                                                                                                                                                                                                                                                                                                                 |            | X        |                                    | 1705.11.3 (1)                     | <input checked="" type="checkbox"/> |                                                                                                                                                      |
| 4. Components: Exterior wall covering and wall connections to roof and floor diaphragms and framing                                                                                                                                                                                                                                                                                                                   |            | X        |                                    | 1705.11.3 (2)                     | <input type="checkbox"/>            |                                                                                                                                                      |
| <b>N. TESTING FOR SEISMIC RESISTANCE (ASCE 341-16 and ASCE 7-16)</b>                                                                                                                                                                                                                                                                                                                                                  |            |          |                                    |                                   |                                     |                                                                                                                                                      |
| 1. Structural Steel                                                                                                                                                                                                                                                                                                                                                                                                   |            |          | AISC 341                           | 1705.12.1.1<br>1705.13.1.1        | <input type="checkbox"/>            | 05 1200<br>05 1213                                                                                                                                   |
| 2. Structural Steel Elements                                                                                                                                                                                                                                                                                                                                                                                          |            |          | AISC 341                           | 1705.12.1.2<br>1705.13.1.2        | <input type="checkbox"/>            | 05 1200, 05 1213                                                                                                                                     |
| 3. Structural Wood gluing and fastening                                                                                                                                                                                                                                                                                                                                                                               |            | X        |                                    | 1705.12.2                         | <input type="checkbox"/>            | 06 1000, 06 1753<br>06 1800, 06 1733                                                                                                                 |
| 4. Cold Formed Steel Lightweight Construction welding and fastening                                                                                                                                                                                                                                                                                                                                                   |            | X        |                                    | 1705.12.3                         | <input type="checkbox"/>            | 05 4000<br>05 4400                                                                                                                                   |
| 5. Designated Seismic Systems                                                                                                                                                                                                                                                                                                                                                                                         |            |          | ASCE 7: 13.2.2                     | 1705.12.4                         | <input type="checkbox"/>            |                                                                                                                                                      |
| 6. Architectural Components: (seismic)                                                                                                                                                                                                                                                                                                                                                                                |            |          |                                    |                                   |                                     |                                                                                                                                                      |
| a. Exterior cladding, interior or exterior nonbearing walls and int. and ext. veneer 30 ft. or less above grade or walking surface                                                                                                                                                                                                                                                                                    |            | X        |                                    | 1705.12.5                         | <input type="checkbox"/>            |                                                                                                                                                      |
| b. Exterior cladding or int. or ext. veneer weighing 5 psf or less                                                                                                                                                                                                                                                                                                                                                    |            | X        |                                    | 1705.12.5                         | <input type="checkbox"/>            |                                                                                                                                                      |

| INSPECTION AND TESTING (Continuous & Periodic is as Defined by the BCNYS)                                                                                                | CONTINUOUS | PERIODIC | REFERENCE STANDARD | BCNYS REFERENCE | CHECK IF REQUIRED        | IDENTIFY SPEC SECTION AND PROVIDE CLARIFYING NOTES IF NECESSARY (the default spec sections listed may need to be modified) |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------|--------------------|-----------------|--------------------------|----------------------------------------------------------------------------------------------------------------------------|
| c. Interior nonbearing walls weighing 15 psf or less                                                                                                                     |            | X        |                    | 1705.12.5       | <input type="checkbox"/> |                                                                                                                            |
| d. Access floors                                                                                                                                                         |            | X        |                    | 1705.12.5.1     | <input type="checkbox"/> | 09 6900                                                                                                                    |
| <b>7. Plumbing, Mechanical and Electrical Components: (seismic)</b>                                                                                                      |            |          |                    |                 |                          |                                                                                                                            |
| a. Electric equipment anchorage for emergency and standby power systems                                                                                                  |            | X        |                    | 1705.12.6 (1)   | <input type="checkbox"/> |                                                                                                                            |
| b. Other electric equipment anchorage                                                                                                                                    |            | X        |                    | 1705.12.6 (2)   | <input type="checkbox"/> |                                                                                                                            |
| c. Installation and anchorage of piping systems/mechanical units designed to carry hazardous materials                                                                   |            | X        |                    | 1705.12.6 (3)   | <input type="checkbox"/> |                                                                                                                            |
| d. Installation and anchorage of ductwork designed to carry hazardous material                                                                                           |            | X        |                    | 1705.12.6 (4)   | <input type="checkbox"/> | 23 3100                                                                                                                    |
| e. Installation and anchorage of vibration isolation systems                                                                                                             |            | X        |                    | 1705.12.6 (5)   | <input type="checkbox"/> |                                                                                                                            |
| f. Installation of mechanical and electrical equipment, including ductwork, piping systems and structural supports where automatic fire sprinkler systems are installed. |            | X        | ASCE/SEI 7: 13.2.3 | 1705.12.6 (6)   | <input type="checkbox"/> |                                                                                                                            |
| 8. Storage Racks (seismic)                                                                                                                                               |            | X        |                    | 1705.12.7       | <input type="checkbox"/> | 10 5629, 10 5613                                                                                                           |
| 9. Seismic Isolation Systems                                                                                                                                             |            | X        |                    | 1705.12.8       | <input type="checkbox"/> |                                                                                                                            |
| 10. Cold Formed Steel Special Bolted Moment Frames (seismic)                                                                                                             |            | X        |                    | 1705.12.9       | <input type="checkbox"/> |                                                                                                                            |
| <b>O. TESTING FOR SEISMIC RESISTANCE (ASCE 341-16 and ASCE 7-16)</b>                                                                                                     |            |          |                    |                 |                          |                                                                                                                            |
| 1. Structural Steel                                                                                                                                                      |            |          | ASCE 341           | 1705.13.1       | <input type="checkbox"/> |                                                                                                                            |
| 2. Nonstructural Components                                                                                                                                              |            |          | ASCE 7: 13.2.1     | 1705.13.2       | <input type="checkbox"/> |                                                                                                                            |
| 3. Designated Seismic Systems                                                                                                                                            |            |          | ASCE 7: 13.2.2     | 1705.13.3       | <input type="checkbox"/> |                                                                                                                            |
| 4. Seismic Isolation Systems                                                                                                                                             |            |          | ASCE 7: 17.8       | 1705.13.4       | <input type="checkbox"/> |                                                                                                                            |
| <b>P. SPRAYED FIRE-RESISTANT MATERIALS (ASTM E605 - 1993(2015) and E736 - 2000(2015))</b>                                                                                |            |          |                    |                 |                          |                                                                                                                            |
| 1. Physical and visual tests                                                                                                                                             |            |          |                    | 1705.14.1       | <input type="checkbox"/> | 07 8100                                                                                                                    |
| 2. Structural Member Surface Conditions                                                                                                                                  |            |          |                    | 1705.14.2       | <input type="checkbox"/> | 07 8100                                                                                                                    |
| 3. Application                                                                                                                                                           |            |          |                    | 1705.14.3       | <input type="checkbox"/> | 07 8100                                                                                                                    |
| 4. Verify thickness of application                                                                                                                                       |            |          | ASTM E 605         | 1705.14.4       | <input type="checkbox"/> | 07 8100                                                                                                                    |
| 5. Verify density of material                                                                                                                                            |            |          | ASTM E 605         | 1705.14.5       | <input type="checkbox"/> | 07 8100                                                                                                                    |
| 6. Verify cohesive/adhesive bond strength of materials                                                                                                                   |            |          | ASTM E 736         | 1705.14.6       | <input type="checkbox"/> | 07 8100                                                                                                                    |
| 7. Condition of finished application                                                                                                                                     |            |          |                    | 1705.14.1 (5)   | <input type="checkbox"/> | 07 8100                                                                                                                    |
| <b>Q. MASTIC and INTUMESCENT FIRE-RESISTANT COATINGS (AWCI 12-B 2014)</b>                                                                                                |            |          |                    |                 |                          |                                                                                                                            |
| 1. Verify surface preparation, application, and thickness in accordance with manufacturer's written instructions when applied to structural elements and decks           |            | X        | AWCI 12-B          | 1705.15         | <input type="checkbox"/> | 07 8123                                                                                                                    |
| <b>R. EXTERIOR INSULATION AND FINISH SYSTEMS (EIFS) (ASTM E2570 -2007 (2014))</b>                                                                                        |            |          |                    |                 |                          |                                                                                                                            |
| 1. Water-resistive barrier coatings must be inspected when installed over a sheathing substrate                                                                          |            | X        | ASTM E2570         | 1705.16.1       | <input type="checkbox"/> | 07 2400                                                                                                                    |
| <b>S. FIRE-RESISTANT PENETRATION and JOINTS</b>                                                                                                                          |            |          |                    |                 |                          |                                                                                                                            |

| INSPECTION AND TESTING (Continuous & Periodic is as Defined by the BCNYS)                                                                                                                           | CONTINUOUS | PERIODIC | REFERENCE STANDARD                         | BCNYS REFERENCE                                   | CHECK IF REQUIRED                   | IDENTIFY SPEC SECTION AND PROVIDE CLARIFYING NOTES IF NECESSARY (the default spec sections listed may need to be modified) |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------|--------------------------------------------|---------------------------------------------------|-------------------------------------|----------------------------------------------------------------------------------------------------------------------------|
| 1. For high-rise buildings or Risk Category III or IV buildings inspect through-penetrations and membrane penetration firestops                                                                     |            | X        | ASTM E2174, ASTM E814 or UL 1479           | 1705.17, 1705.17.1, 714.5.1.2, 714.4.2, 714.4.1.2 | <input checked="" type="checkbox"/> | 07 8400                                                                                                                    |
| 2. For high-rise buildings or Risk Category III or IV buildings inspect fire-resistant joint systems and perimeter fire barrier systems                                                             |            | X        | ASTM: E119, E2393, E2307, E1966 or UL 2079 | 1705.17<br>1705.17.2<br>715.3<br>715.4            | <input checked="" type="checkbox"/> | 07 8400                                                                                                                    |
| <b>T. SMOKE CONTROL SYSTEM</b>                                                                                                                                                                      |            |          |                                            |                                                   |                                     |                                                                                                                            |
| 1. Tested during erection of ductwork and prior to concealment for leakage testing and recording of device location                                                                                 |            | X        |                                            | 1705.18.1 (1)                                     | <input type="checkbox"/>            |                                                                                                                            |
| 2. Tested prior to occupancy and after sufficient completion of pressure difference testing, flow measurements and detection and control verification                                               |            | X        |                                            | 1705.18.1 (2)                                     | <input type="checkbox"/>            |                                                                                                                            |
| <b>U. ADDITIONAL SPECIAL INSPECTIONS AND TESTS</b>                                                                                                                                                  |            |          |                                            |                                                   |                                     |                                                                                                                            |
| 1. Design Strength of Materials                                                                                                                                                                     |            |          |                                            | 1706                                              | <input type="checkbox"/>            |                                                                                                                            |
| 2. Alternative Test Procedures                                                                                                                                                                      |            |          |                                            | 1707                                              | <input type="checkbox"/>            |                                                                                                                            |
| 3. In-Situ Load Tests                                                                                                                                                                               |            |          |                                            | 1708                                              | <input type="checkbox"/>            |                                                                                                                            |
| 4. Preconstruction Load Tests                                                                                                                                                                       |            |          |                                            | 1709                                              | <input type="checkbox"/>            |                                                                                                                            |
| 5. Structural Observations                                                                                                                                                                          |            |          |                                            | 1704.6, 1704.6.1<br>1704.6.2                      | <input type="checkbox"/>            |                                                                                                                            |
| <b>V. ALTERNATE MATERIALS AND SYSTEMS / SPECIAL CASES</b>                                                                                                                                           |            |          |                                            |                                                   |                                     |                                                                                                                            |
| 1. Construction materials and systems that are alternatives to materials and systems prescribed by the IBC                                                                                          |            |          |                                            | 1705.1.1                                          | <input type="checkbox"/>            |                                                                                                                            |
| 2. Unusual design applications of materials described by the IBC                                                                                                                                    |            |          |                                            | 1705.1.1                                          | <input type="checkbox"/>            |                                                                                                                            |
| 3. Materials and systems required to be installed in accordance with additional manufacturer's instructions that prescribe requirements not contained in code or in standards referenced by the IBC |            |          |                                            | 1705.1.1                                          | <input type="checkbox"/>            |                                                                                                                            |

# Contractor's Statement of Responsibility

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Each contractor responsible for the construction or fabrication of a system or component designated in the Quality Assurance Plan must submit a Statement of Responsibility.

Project: Additions & Alterations to Port Jervis Middle School

Contractor's Name:

Address:

License No.:

Description of designated building systems and components included in the Statement of Responsibility:

## Contractor's Acknowledgment of Special Requirements

I hereby acknowledge that I have received, read, and understand the Quality Assurance Plan and Special Inspection program.

I hereby acknowledge that control will be exercised to obtain conformance with the construction documents approved by the Building Official.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

## Contractor's Provisions for Quality Control

Procedures for exercising control within the contractor's organization, the method and frequency of reporting and the distribution of reports is attached to this Statement.

Identification and qualifications of the person(s) exercising such control and their position(s) in the organization are attached to this Statement.



# Fabricator's Certificate of Compliance

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Each approved fabricator that is exempt from Special Inspection of shop fabrication and implementation procedures per section 1704.2.5.1 of the International Building Code must submit a *Fabricator's Certificate of Compliance* at the completion of fabrication.

Project: Additions & Alterations to Port Jervis Middle School

Fabricator's Name:

Address:

Certification or Approval Agency:

Certification Number:

Date of Last Audit or Approval:

Description of structural members and assemblies that have been fabricated:

I hereby certify that items described above were fabricated in strict accordance with the approved construction documents.

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

\_\_\_\_\_  
Title

Attach copies of fabricator's certification or building code evaluation service report and fabricator's quality control manual.

# Final Report of Special Inspections

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Project: \_\_\_ *Additions and Alterations to Port Jervis Middle School*

Location: \_\_\_ *118 East Main Street, Port Jervis, New York 12771*

Owner: \_\_\_ *Port Jervis City School District*

Owner's Address: \_\_\_ *9 Thompson Street*  
\_\_\_ *Port Jervis, New York 12771*

Architect of Record: \_\_\_ *BCA Architects & Engineers*

Structural Engineer of Record:

To the best of my information, knowledge and belief, the Special Inspections required for this project, and itemized in the *Statement of Special Inspections* submitted for permit, have been performed and all discovered discrepancies have been reported and resolved other than the following:

Comments:

*(Attach continuation sheets if required to complete the description of corrections.)*

Interim reports submitted prior to this final report form a basis for and are to be considered an integral part of this final report.

Respectfully submitted,  
Special Inspector

\_\_\_\_\_  
(Type or print name)

\_\_\_\_\_  
Signature

\_\_\_\_\_  
Date

***Licensed Professional Seal***

# Final Report of Special Inspections

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## Agent's Final Report

Project:     \_\_\_*Additions & Alterations to Port Jervis Middle School*

Agent:

Special Inspector:

To the best of my information, knowledge and belief, the Special Inspections or testing required for this project, and designated for this Agent in the *Statement of Special Inspections* submitted for permit, have been performed and all discovered discrepancies have been reported and resolved other than the following:

Comments:

*(Attach continuation sheets if required to complete the description of corrections.)*

Interim reports submitted prior to this final report form a basis for and are to be considered an integral part of this final report.

Respectfully submitted,  
Agent of the Special Inspector

---

(Type or print name)

---

Signature

---

Date

***Licensed Professional Seal or  
Certification***

# Statement of Special Inspections - Structural

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Project: *Additions & Alterations to Port Jervis Middle School*

Location: *118 East Main Street, Port Jervis, New York 12771*

Owner: *Port Jervis City School District*

Design Professional in Responsible Charge: *Elwyn & Palmer Consulting Engineers PLLC*

This *Statement of Special Inspections* is submitted as a condition for permit issuance in accordance with the Special Inspection and Structural Testing requirements of the Building Code. It includes a schedule of Special Inspection services applicable to this project as well as the name of the Special Inspection Coordinator and the identity of other approved agencies to be retained for conducting these inspections and tests. This *Statement of Special Inspections* encompass the following disciplines:

☒ Structural      ☐ Mechanical/Electrical/Plumbing  
☐ Architectural      ☐ Other: \_\_\_\_\_

The Special Inspection Coordinator shall keep records of all inspections and shall furnish inspection reports to the Building Official and the Registered Design Professional in Responsible Charge. Discovered discrepancies shall be brought to the immediate attention of the Contractor for correction. If such discrepancies are not corrected, the discrepancies shall be brought to the attention of the Building Official and the Registered Design Professional in Responsible Charge. The Special Inspection program does not relieve the Contractor of his or her responsibilities.

Interim reports shall be submitted to the Building Official and the Registered Design Professional in Responsible Charge.

A *Final Report of Special Inspections* documenting completion of all required Special Inspections, testing and correction of any discrepancies noted in the inspections shall be submitted prior to issuance of a Certificate of Use and Occupancy.

Job site safety and means and methods of construction are solely the responsibility of the Contractor.

Interim Report Frequency: *At project completion*

or ☐ per attached schedule.

Prepared by:

*David L. Elwyn, PE*



Signature

*11/12/21*

Date



Owner's Authorization:

Building Official's Acceptance:

Signature

Date

Signature

Date

# Schedule of Inspection and Testing Agencies

This Statement of Special Inspections / Quality Assurance Plan includes the following building systems:

- |                                                |                                                                |
|------------------------------------------------|----------------------------------------------------------------|
| <input type="checkbox"/> Soils and Foundations | <input type="checkbox"/> Spray Fire Resistant Material         |
| ✓ Cast-in-Place Concrete                       | <input type="checkbox"/> Wood Construction                     |
| ✓ Precast Concrete                             | <input type="checkbox"/> Exterior Insulation and Finish System |
| ✓ Masonry                                      | <input type="checkbox"/> Mechanical & Electrical Systems       |
| ✓ Structural Steel                             | <input type="checkbox"/> Architectural Systems                 |
| ✓ Cold-Formed Steel Framing                    | <input type="checkbox"/> Special Cases                         |

| Special Inspection Agencies              | Firm       | Address, Telephone, e-mail                                                   |
|------------------------------------------|------------|------------------------------------------------------------------------------|
| 1. <b>Special Inspection Coordinator</b> | <i>TBD</i> | 213 E Seneca St<br>Ithaca, NY 14850<br>(607) 272-5060<br>DLE@ElwynPalmer.com |
| 2. Inspector                             | <i>TBD</i> |                                                                              |
| 3. Inspector                             | <i>TBD</i> |                                                                              |
| 4. Testing Agency                        | <i>TBD</i> |                                                                              |
| 5. Testing Agency                        | <i>TBD</i> |                                                                              |
| 6. Other                                 |            |                                                                              |

Note: The inspectors and testing agencies shall be engaged by the Owner or the Owner's Agent, and not by the Contractor or Subcontractor whose work is to be inspected or tested. Any conflict of interest must be disclosed to the Building Official, prior to commencing work.

# Quality Assurance Plan

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## Quality Assurance for Seismic Resistance

|                                       |          |
|---------------------------------------|----------|
| Seismic Design Category               | <i>B</i> |
| Quality Assurance Plan Required (Y/N) | <i>N</i> |

Description of seismic force resisting system and designated seismic systems:  
*Refer to Contract Drawings*

## Quality Assurance for Wind Requirements

|                                       |                   |
|---------------------------------------|-------------------|
| Basic Wind Speed (3 second gust)      | <i>Vult = 120</i> |
| Wind Exposure Category                | <i>B</i>          |
| Quality Assurance Plan Required (Y/N) | <i>N</i>          |

Description of wind force resisting system and designated wind resisting components:  
*Refer to contract drawings.*

## Statement of Responsibility

Each contractor responsible for the construction or fabrication of a system or component designated above must submit a Statement of Responsibility.

|                                                                                                                                                                                                                                                                                                                           |  |                                                                                                      |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--|------------------------------------------------------------------------------------------------------|
| <b>Elwyn &amp; Palmer Consulting Engineers</b><br><b>213 E Seneca St</b><br><b>Ithaca, NY 14850</b>                                                                                                                                                                                                                       |  | <b>STATEMENT OF SPECIAL INSPECTIONS AND TESTS</b><br>As required by the Building Code of NYS (BCNYS) |
| BCNYS §1704.3 requires the project Design Professional to complete the Statement of Special Inspections and Tests. Completion of the Statement of Special Inspections & Tests and submission to the Code Enforcement Officer with the Construction Permit Application as a condition for issuance of the Building Permit. |  |                                                                                                      |
| <b>Project Title: Additions &amp; Alterations to Port Jervis Middle School</b>                                                                                                                                                                                                                                            |  |                                                                                                      |
| <b>BCA Project #:2019-011 PH1</b>                                                                                                                                                                                                                                                                                         |  | <b>Client Project No:</b>                                                                            |
| <b>Project Address:</b> <u>118 East Main Street, Port Jervis, New York 12771</u>                                                                                                                                                                                                                                          |  |                                                                                                      |
| <b>Building Information:</b> <u>                    </u>                                                                                                                                                                                                                                                                  |  |                                                                                                      |
| <b>Name of Person Completing this Statement</b><br><u>David Elwyn</u>                                                                                                                                                                                                                                                     |  | <b>Phone</b><br><u>(607) 272-5060</u>                                                                |
|                                                                                                                                                                                                                                                                                                                           |  | <b>Date</b><br><u>11/12/21</u>                                                                       |
| <b>Comments</b>                                                                                                                                                                                                                                                                                                           |  |                                                                                                      |

| INSPECTION AND TESTING (Continuous & Periodic is as Defined by the BCNYS)                                                                                                                           | CONTINUOUS | PERIODIC    | REFERENCE STANDARD     | BCNYS REFERENCE | CHECK IF REQUIRED | IDENTIFY SPEC SECTION AND PROVIDE CLARIFYING NOTES IF NECESSARY (the default spec sections listed may need to be modified) |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|-------------|------------------------|-----------------|-------------------|----------------------------------------------------------------------------------------------------------------------------|
| <b>A. STEEL CONSTRUCTION (AISC 360-16)</b>                                                                                                                                                          |            |             |                        |                 |                   |                                                                                                                            |
| 1. Minimum inspections <u>prior</u> to welding.                                                                                                                                                     |            | X           | AISC 360 Table N5.4-1  | 1705.2.1        | √                 | See inspection specific AISC details                                                                                       |
| 2. Minimum inspections <u>during</u> welding.                                                                                                                                                       |            | X           | AISC 360 Table N5.4-2  | 1705.2.1        | √                 | See inspection specific AISC details                                                                                       |
| 3. Minimum inspections <u>after</u> welding.                                                                                                                                                        |            | X           | AISC 360 Table N5.4-3  | 1705.2.1        | √                 | See inspection specific AISC details                                                                                       |
| 4. Nondestructive Testing (NDT) of welded joints                                                                                                                                                    |            | X           | AISC 360 N5.5 AWS D1.1 | 1705.2.1        | √                 | See inspection specific AISC details                                                                                       |
| 5. CJP Groove Weld NDT:<br>a. For Risk Category II<br>b. For Risk Category III and IV                                                                                                               |            | 10%<br>100% | AISC 360 N5.5          | 1705.2.1        | √                 | See inspection specific AISC details                                                                                       |
| 6. Minimum inspections <u>prior</u> to high-strength bolting                                                                                                                                        |            | X           | AISC 360 Table N5.6-1  | 1705.2.1        | √                 | See inspection specific AISC details                                                                                       |
| 7. Minimum inspections <u>during</u> high-strength bolting.                                                                                                                                         |            | X           | AISC 360 Table N5.6-2  | 1705.2.1        | √                 | See inspection specific AISC details                                                                                       |
| 8. Minimum inspections <u>after</u> high-strength bolting. Document acceptance or rejection of bolted connections.                                                                                  |            | X           | AISC 360 Table N5.6-3  | 1705.2.1        | √                 | See inspection specific AISC details                                                                                       |
| 9. Inspect fabricated or erected steel frame as appropriate to verify compliance with the construction and approved shop drawings. Inspect braces, stiffeners, member locations, and joint details. |            | X           | AISC 360 N5.7          | 1705.2.1        | √                 | See inspection specific AISC details                                                                                       |
| 10. Inspect during placement of anchor rods and other embedment's supporting                                                                                                                        |            | X           | AISC 360 N5.7          | 1705.2.1        | √                 | See inspection specific AISC details                                                                                       |

| INSPECTION AND TESTING (Continuous & Periodic is as Defined by the BCNYS)                                                                                                                                                             | CONTINUOUS | PERIODIC | REFERENCE STANDARD                         | BCNYS REFERENCE          | CHECK IF REQUIRED | IDENTIFY SPEC SECTION AND PROVIDE CLARIFYING NOTES IF NECESSARY (the default spec sections listed may need to be modified) |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------|--------------------------------------------|--------------------------|-------------------|----------------------------------------------------------------------------------------------------------------------------|
| structural steel for compliance with the construction and approved shop drawings.                                                                                                                                                     |            |          |                                            |                          |                   |                                                                                                                            |
| 11. Inspect Composite Construction prior to concrete placement:<br>a. Placement and installation of steel deck<br>b. Placement and installation of steel headed stud anchors<br>c. Document acceptance or rejection of steel elements | X          |          | AISC 360 N6.1                              | 1705.2.1                 | ✓                 | See inspection specific AISC details                                                                                       |
| <b>B. COLD-FORMED STEEL DECK (SDI QA/QC-17)</b>                                                                                                                                                                                       |            |          |                                            |                          |                   |                                                                                                                            |
| 1. Inspection or Execution Tasks <u>Prior</u> to Deck Placement                                                                                                                                                                       |            | X        | SDI QA/QC Table 1.1 A and B                | 1705.2.2                 | ✓                 |                                                                                                                            |
| 2. Inspection or Execution Tasks <u>After</u> Deck Placement                                                                                                                                                                          |            | X        | SDI QA/QC Table 1.2 A, B and C             | 1705.2.2                 | ✓                 |                                                                                                                            |
| 3. Inspection or Execution Tasks <u>Prior</u> to Welding                                                                                                                                                                              |            | X        | SDI QA/QC Table 1.3 A, B, C and D          | 1705.2.2                 | ✓                 |                                                                                                                            |
| 4. Inspection or Execution Tasks <u>During</u> Welding                                                                                                                                                                                | X          |          | SDI QA/QC Table 1.4 A, B, C and D          | 1705.2.2                 | ✓                 |                                                                                                                            |
| 5. Inspection or Execution Tasks <u>After</u> Welding                                                                                                                                                                                 |            | X        | SDI QA/QC Table 1.5 A, B, C and D          | 1705.2.2                 | ✓                 |                                                                                                                            |
| 6. Inspection or Execution Tasks <u>Prior</u> Mechanical Fastening                                                                                                                                                                    | X          |          | SDI QA/QC Table 1.6 A, B and C             | 1705.2.2                 | ✓                 |                                                                                                                            |
| 7. Inspection or Execution Tasks <u>During</u> Mechanical Fastening                                                                                                                                                                   |            | X        | SDI QA/QC Table 1.7 A and B                | 1705.2.2                 | ✓                 |                                                                                                                            |
| 8. Inspection or Execution Tasks <u>After</u> Mechanical Fastening                                                                                                                                                                    |            | X        | SDI QA/QC Table 1.8 A, B, C, D and E       | 1705.2.2                 | ✓                 |                                                                                                                            |
| <b>C. OPEN-WEB STEEL JOISTS and JOIST GIRDERS (SJI 100-15 and 200-15)</b>                                                                                                                                                             |            |          |                                            |                          |                   |                                                                                                                            |
| 1. Installation of open-web steel joists and joist girders.                                                                                                                                                                           |            |          | SJI 100<br>SJI 200 composite               | Table 1705.2.3           | ✓                 |                                                                                                                            |
| a. End connections – welding or bolted.                                                                                                                                                                                               | -          | X        | SJI CJ,SJI K,<br>SJI LH/DLH or SJI JG      | Table 1705.2.3<br>2207.1 | ✓                 | 05 2100                                                                                                                    |
| b. Bridging – horizontal or diagonal<br>▪ Standard bridging<br>▪ Bridging differing from the SJI specs                                                                                                                                | -          | X        | SJI CJ,SJI K,<br>SJI LH/DLH or SJI JG      | Table 1705.2.3<br>2207.1 | ✓                 | 05 2100                                                                                                                    |
| <b>D. COLD-FORMED STEEL TRUSSES SPANNING 60 FEET or GREATER</b>                                                                                                                                                                       |            |          |                                            |                          |                   |                                                                                                                            |
| 1. Verify the temporary installation of restraint / bracing is installed per approved truss submittal.                                                                                                                                |            | X        | Approved truss submittal package           | 1705.2.4                 |                   |                                                                                                                            |
| 2. Verify the permanent individual truss member restraint / bracing is installed per approved truss submittal                                                                                                                         |            | X        | Approved truss submittal package           | 1705.2.4                 |                   |                                                                                                                            |
| <b>E. CONCRETE CONSTRUCTION</b>                                                                                                                                                                                                       |            |          |                                            |                          |                   |                                                                                                                            |
| 1. Inspect reinforcement, including prestressing tendons, and verify placement.                                                                                                                                                       | -          | X        | ACI 318: Ch. 20, 25.2, 25.3, 26.6.1-26.6.3 | Table 1705.3, 1908.4     | ✓                 | 03 3000                                                                                                                    |
| 2a. Reinforcing bar welding: Verify weldability of reinforcing bars other than ASTM A706                                                                                                                                              | -          | X        | AWS D1.4;<br>ACI 318: 26.6.4               | Table 1705.3, 1705.3.1   |                   |                                                                                                                            |
| 2b. Reinforcing bar welding:                                                                                                                                                                                                          |            | X        | AWS D1.4;                                  | Table 1705.3,            |                   |                                                                                                                            |



[illegible]

| INSPECTION AND TESTING (Continuous & Periodic is as Defined by the BCNYS)                                                                                        | CONTINUOUS | PERIODIC | REFERENCE STANDARD                                                    | BCNYS REFERENCE | CHECK IF REQUIRED | IDENTIFY SPEC SECTION AND PROVIDE CLARIFYING NOTES IF NECESSARY (the default spec sections listed may need to be modified) |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------|-----------------------------------------------------------------------|-----------------|-------------------|----------------------------------------------------------------------------------------------------------------------------|
| A1. Verify compliance with the approved submittal and project specifications                                                                                     |            | X        | TMS 402, TMS 602, Table 3.1.1                                         | 1705.4          |                   |                                                                                                                            |
| <b>Level B Quality Assurance of Masonry</b> (TMS 402-13/ACI 530-13/ASCE 5-13 Table 3.1.2)                                                                        |            |          |                                                                       |                 |                   |                                                                                                                            |
| <b>Minimum Tests:</b>                                                                                                                                            |            |          |                                                                       |                 |                   |                                                                                                                            |
| a. Verification of slump flow and Visual Stability Index (VSI) as delivered to the project site in accordance with Art. 1.5 B.1.b.3 for self-consolidating grout |            | X        | TMS 402 Table 3.1.2                                                   | 1705.4          | √                 | 04 2000                                                                                                                    |
| b. Verification of f' m and f' acc in accordance w/ specification Art. 1.4B prior to construction except where exempted by TMS 402                               |            | X        | TMS 402 Table 3.1.2                                                   | 1705.4          | √                 | 04 2000                                                                                                                    |
| B1. Verify compliance with approved submittals                                                                                                                   |            | X        | TMS 602 Art. 1.5                                                      | 1705.4          |                   |                                                                                                                            |
| <b>B2. As masonry construction begins, verify the following are in compliance:</b>                                                                               |            |          |                                                                       |                 |                   |                                                                                                                            |
| a. Proportions of site-prepared mortar                                                                                                                           |            | X        | TMS 602 Art. 2.1, 2.6 A                                               | 1705.4          | √                 | 04 2000                                                                                                                    |
| b. Construction of mortar joints                                                                                                                                 |            | X        | TMS 602 Art. 3.3 B                                                    | 1705.4          | √                 | 04 2000                                                                                                                    |
| c. Grade and size of prestressing tendons and anchorages                                                                                                         |            | X        | TMS 602 Art 2.4 B, 2.4 H                                              | 1705.4          |                   |                                                                                                                            |
| d. Location of reinforcement, connectors, prestressing tendons and anchors                                                                                       |            | X        | TMS 602 Art. 3.4, 3.6 A                                               | 1705.4          | √                 | 04 2000                                                                                                                    |
| e. Prestressing technique                                                                                                                                        |            | X        | TMS 602 Art. 3.6 B                                                    | 1705.4          |                   |                                                                                                                            |
| f. Properties of thin-set mortar for ACC masonry                                                                                                                 | X (b)      | X (c)    | TMS 602 Art.2.1 C                                                     | 1705.4          |                   | See table footnotes                                                                                                        |
| <b>B3. Prior to grouting, verify that the following are in compliance:</b>                                                                                       |            |          |                                                                       |                 |                   |                                                                                                                            |
| a. Grout space                                                                                                                                                   |            | X        | TMS 602 Art. 3.2 D, 3.2 F                                             | 1705.4          | √                 | 04 2000                                                                                                                    |
| b. Grade, type and size of reinforcement and anchor bolts, and prestressing tendons and anchorages                                                               |            | X        | TMS 402 Sec 6.1 / TMS 602 Art. 2.4, 3.4                               | 1705.4          | √                 | 04 2000                                                                                                                    |
| c. Placement of reinforcement, connectors and prestressing tendons and anchorages                                                                                |            | X        | TMS 402 Sec 6.1, 6.2.1, 6.2.6, 6.2.7 / TMS 602 Art. 3.2 E, 3.4, 3.6 A | 1705.4          | √                 | 04 2000                                                                                                                    |
| d. Proportions of site prepared grout and prestressing grout for bonded tendons                                                                                  |            | X        | TMS 602 Art 2.6 B, 2.4 G1.b                                           | 1705.4          |                   |                                                                                                                            |
| e. Construction of mortar joints                                                                                                                                 |            | X        | TMS 602 Art. 3.3 B                                                    | 1705.4          | √                 | 04 2000                                                                                                                    |
| <b>B4. During Construction verify:</b>                                                                                                                           |            |          |                                                                       |                 |                   |                                                                                                                            |
| a. Size and location of structural elements                                                                                                                      |            | X        | TMS 602 Art. 3.3 F                                                    | 1705.4          | √                 | 04 2000                                                                                                                    |
| b. Type, size, & location of anchors, including other details of anchorage of masonry to structural members, frames                                              |            | X        | TMS 402 Sec 1.2.1e, 6.1.4.3, 6.2.1; 1.16.4.3, 1.17.1                  | 1705.4          | √                 | 04 2000                                                                                                                    |
| c. Welding of reinforcement                                                                                                                                      | X          |          | TMS 402 Sec. 2.1.7.7.2, 3.3.3.4(c); 8.3.3.4(b)                        | 1705.4          |                   |                                                                                                                            |
| d. Preparation, construction, protection of masonry during cold weather (temperature below 40°F) or hot weather (temperature above 90° F)                        |            | X        | TMS 602 Art. 1.8 C, 1.8 D                                             | 1705.4          | √                 | 04 2000                                                                                                                    |
| e. Application and measurement of                                                                                                                                | X          |          | TMS 602                                                               | 1705.4          |                   |                                                                                                                            |

| INSPECTION AND TESTING (Continuous & Periodic is as Defined by the BCNYS)                                                                                                                                                                                                       | CONTINUOUS | PERIODIC | REFERENCE STANDARD                                                    | BCNYS REFERENCE | CHECK IF REQUIRED | IDENTIFY SPEC SECTION AND PROVIDE CLARIFYING NOTES IF NECESSARY (the default spec sections listed may need to be modified) |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------|-----------------------------------------------------------------------|-----------------|-------------------|----------------------------------------------------------------------------------------------------------------------------|
| <b>f.</b> Placement of grout and prestressing grout for bonded tendons is in compliance                                                                                                                                                                                         | X          |          | TMS 602 Art. 3.5, 3.6 C                                               | 1705.4          |                   |                                                                                                                            |
| <b>g.</b> Placement of AAC masonry units and construction of thin-bed mortar joints                                                                                                                                                                                             | X(b)       | X (c)    | TMS 602 Art. 3.3 B.9, 3.3 F.1.b                                       | 1705.4          |                   | See table footnotes                                                                                                        |
| <b>h.</b> Installation of post-installed anchors according to manufacturer's printed installation instructions. Verify anchor dimensions, adhesive identification and exp. Date, hole dimensions, edge distances, embedment depth, tightening torque, base material temperature | X(d)       | X(e)     |                                                                       |                 |                   | See table footnotes                                                                                                        |
| <b>B5.</b> Observe preparation of grout specimens, mortar specimens, and/or prisms                                                                                                                                                                                              |            | X        | TMS 602 Art. 1.4B.2.a.3, 1.4 B.2.b.3, 1.4 B.2.c.3, 1.4B.3, 1.4 B.4    |                 | √                 | 04 2000                                                                                                                    |
| <b>Footnotes:</b>                                                                                                                                                                                                                                                               |            |          |                                                                       |                 |                   |                                                                                                                            |
| (a) Frequency refers to the frequency of special inspections, which may be continuous during the task listed or periodic during the listed task, as defined in the table                                                                                                        |            |          |                                                                       |                 |                   |                                                                                                                            |
| (b) Required for the first 5000 sq. ft. of AAC masonry                                                                                                                                                                                                                          |            |          |                                                                       |                 |                   |                                                                                                                            |
| (c) Required after the first 5000 sq. ft. of AAC masonry                                                                                                                                                                                                                        |            |          |                                                                       |                 |                   |                                                                                                                            |
| (d) Required for the first 10% of each different type of anchor and/or installer                                                                                                                                                                                                |            |          |                                                                       |                 |                   |                                                                                                                            |
| (e) Required for the remaining 90% of each different type of anchor and/or installer                                                                                                                                                                                            |            |          |                                                                       |                 |                   |                                                                                                                            |
| <b>Level C Quality Assurance of Masonry (TMS 402-13/ACI 530-13/ASCE 5-13 Table 3.1.3)</b>                                                                                                                                                                                       |            |          |                                                                       |                 |                   |                                                                                                                            |
| <b>Minimum Tests:</b>                                                                                                                                                                                                                                                           |            |          |                                                                       |                 |                   |                                                                                                                            |
| <b>a.</b> Verification of f' m and f' aac in accordance with Article 1.4 B prior to construction and for every 5,000 sq. ft. during construction                                                                                                                                |            | X        | TMS 402 Table 3.1.3                                                   | 1705.4          |                   |                                                                                                                            |
| <b>b.</b> Verification of proportions of materials in premixed or preblended mortar, prestressing grout and grout other than self-consolidating grout, as delivered to the site                                                                                                 |            | X        | TMS 402 Table 3.1.3                                                   | 1705.4          |                   |                                                                                                                            |
| <b>c.</b> Verification of Slump flow and VSI as delivered to the site in accordance with Article 1.5B.1.b.3 for self-consolidating grout                                                                                                                                        |            | X        | TMS 402 Table 3.1.3                                                   | 1705.4          |                   |                                                                                                                            |
| <b>C1.</b> Verify compliance with the approved submittals                                                                                                                                                                                                                       |            | X        | TMS 602 Art. 1.5                                                      | 1705.4          |                   |                                                                                                                            |
| <b>C2. Verify that the following are in compliance:</b>                                                                                                                                                                                                                         |            |          |                                                                       |                 |                   |                                                                                                                            |
| <b>a.</b> Proportions of site-prepared mortar, grout and prestressing tendons and anchorages                                                                                                                                                                                    |            | X        | TMS 602 Art 2.1, 2.6 A, 2.6 B, 2.6 C, 2.4 G.1.b                       | 1705.4          |                   |                                                                                                                            |
| <b>b.</b> Grade, type, and size of reinforcement and anchor bolts, prestressing tendons and anchorages                                                                                                                                                                          |            | X        | TMS 402 Sect. 6.1 / TMS 602 Art. 2.4, 3.4                             | 1705.4          |                   |                                                                                                                            |
| <b>c.</b> Placement of masonry units and construction of mortar joints                                                                                                                                                                                                          |            | X        | TMS 602 Art 3.3 B                                                     | 1705.4          |                   |                                                                                                                            |
| <b>d.</b> Placement of reinforcement, connectors, prestressing tendons and anchorages                                                                                                                                                                                           | X          |          | TMS 402 Sec. 6.1, 6.2.1, 6.2.6, 6.2.7 / TMS 602 Art 3.2 E, 3.4, 3.6 A | 1705.4          |                   |                                                                                                                            |
| <b>e.</b> Grout space prior to grouting                                                                                                                                                                                                                                         | X          |          | TMS 602 Art. 3.2 D, 3.2 F                                             | 1705.4          |                   |                                                                                                                            |

| INSPECTION AND TESTING (Continuous & Periodic is as Defined by the BCNYS)                                                                                                                                                                                                | CONTINUOUS | PERIODIC | REFERENCE STANDARD                                                 | BCNYS REFERENCE  | CHECK IF REQUIRED | IDENTIFY SPEC SECTION AND PROVIDE CLARIFYING NOTES IF NECESSARY (the default spec sections listed may need to be modified) |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------|--------------------------------------------------------------------|------------------|-------------------|----------------------------------------------------------------------------------------------------------------------------|
| f. Placement of grout and prestressing grout for bonded tendons                                                                                                                                                                                                          | X          |          | TMS 602 Art. 3.5, 3.6 C                                            | 1705.4           |                   |                                                                                                                            |
| g. Size and location of structural elements                                                                                                                                                                                                                              |            | X        | TMS 602 Art. 3.3 F                                                 | 1705.4           |                   |                                                                                                                            |
| h. Types, size, and location of anchors including other details of anchorage of masonry to structural members, frames or other construction                                                                                                                              | X          |          | TMS 402 Sec. 1.2.1(e), 6.1.4.3, 6.2.1                              | 1705.4           |                   |                                                                                                                            |
| i. Welding of reinforcement                                                                                                                                                                                                                                              | X          |          | TMS 402 Sec. 8.1.6.7.2, 9.3.3.4 (c), 11.3.3.4(b)                   | 1705.4           |                   |                                                                                                                            |
| j. Preparation, construction and protection of masonry during cold weather (temperature below 40 F or hot weather (temperature above 90°F)                                                                                                                               |            | X        | TMS 602 Art. 1.8 C, 1.8 D                                          | 1705.4           |                   |                                                                                                                            |
| k. Application and measurement of prestressing force                                                                                                                                                                                                                     | X          |          | TMS 602 Art. 3.6 B                                                 | 1705.4           |                   |                                                                                                                            |
| l. Placement of AAC masonry units and construction of thin-bed mortar joints                                                                                                                                                                                             | X          |          | TMS 602 Art. 3.3 B.9, 3.3 F.1.b                                    | 1705.4           |                   |                                                                                                                            |
| m. Properties of thin-bed mortar for AAC masonry                                                                                                                                                                                                                         | X          |          | TMS 602 Art. 2.1 C.1                                               | 1705.4           |                   |                                                                                                                            |
| n. Installation of post-installed anchors according to manufacturer's printed installation instructions. Verify anchor dimensions, adhesive identification and exp. Date, hole dimensions, edge distances, embedment depth, tightening torque, base material temperature | X(b)       | X(c)     |                                                                    |                  |                   |                                                                                                                            |
| C3. Observe preparation of grout specimens. Mortar specimens and/or prisms                                                                                                                                                                                               | X          |          | TMS 602 Art. 1.4B.2.a.3, 1.4 B.2.b.3, 1.4 B.2.c.3, 1.4 B.3, 1.4 B4 | 1705.4           |                   |                                                                                                                            |
| D. Vertical Masonry Foundation Elements                                                                                                                                                                                                                                  |            | X        |                                                                    | 1705.4.2, 1705.4 |                   |                                                                                                                            |
| <b>Footnotes:</b>                                                                                                                                                                                                                                                        |            |          |                                                                    |                  |                   |                                                                                                                            |
| (a) Frequency refers to the frequency of special inspections, which may be continuous during the task listed or periodic during the listed task, as defined in the table                                                                                                 |            |          |                                                                    |                  |                   |                                                                                                                            |
| (b) Required for the first 10% of each different type of anchor and/or installer                                                                                                                                                                                         |            |          |                                                                    |                  |                   |                                                                                                                            |
| (c) Required for the remaining 90% of each different type of anchor and/or installer                                                                                                                                                                                     |            |          |                                                                    |                  |                   |                                                                                                                            |
| <b>G. WOOD CONSTRUCTION</b>                                                                                                                                                                                                                                              |            |          |                                                                    |                  |                   |                                                                                                                            |
| 1. Inspect high-load diaphragms for grade/thickness of sheathing, nominal size of members, fastener size, number and spacing                                                                                                                                             |            | X        | Construction Documents                                             | 1705.5.1 2306.2  |                   | 06 1000 & 06 1753                                                                                                          |
| 2. Metal-plate-connected wood trusses spanning 60 feet or greater: temporary installation restraint / bracing and permanent individual truss member restraint / bracing                                                                                                  |            | X        | Applicable truss submittal package                                 | 1705.5.2         |                   |                                                                                                                            |
| <b>H. SOILS</b>                                                                                                                                                                                                                                                          |            |          |                                                                    |                  |                   |                                                                                                                            |
| 1. Verify materials below shallow foundations are adequate to achieve the design bearing capacity                                                                                                                                                                        | -          | X        | Geotech Report, Contract Documents                                 | Table 1705.6     |                   | 31 2323                                                                                                                    |

| INSPECTION AND TESTING (Continuous & Periodic is as Defined by the BCNYS)                                                                                                                                                                                              | CONTINUOUS | PERIODIC | REFERENCE STANDARD                 | BCNYS REFERENCE        | CHECK IF REQUIRED | IDENTIFY SPEC SECTION AND PROVIDE CLARIFYING NOTES IF NECESSARY (the default spec sections listed may need to be modified) |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------|------------------------------------|------------------------|-------------------|----------------------------------------------------------------------------------------------------------------------------|
| 2. Verify excavations are extended to proper depth and have reached proper material                                                                                                                                                                                    | -          | X        | Geotech Report, Contract Documents | Table 1705.6           |                   | 31 2323                                                                                                                    |
| 3. Perform classification and testing of compacted fill materials                                                                                                                                                                                                      | -          | X        | Geotech Report, Contract Documents | Table 1705.6           |                   | 31 2323                                                                                                                    |
| 4. Verify use of proper materials, densities and lift thicknesses during placement and compaction of compacted fill                                                                                                                                                    | X          | -        | Geotech Report, Contract Documents | Table 1705.6           |                   | 31 2323                                                                                                                    |
| 5. Prior to placement of compacted fill, inspect subgrade and verify that site has been prepared properly                                                                                                                                                              | -          | X        | Geotech Report, Contract Documents | Table 1705.6           |                   | 31 2323                                                                                                                    |
| 6. During fill placement inspector shall verify that proper materials and procedures are used per geo-report                                                                                                                                                           | X          |          | Geotech Report, Contract Documents | 1705.6                 |                   | 31 2323                                                                                                                    |
| <b>I. DRIVEN DEEP FOUNDATIONS</b>                                                                                                                                                                                                                                      |            |          |                                    |                        |                   |                                                                                                                            |
| 1. Verify element materials, sizes and lengths comply w/ the requirements                                                                                                                                                                                              | X          | -        | Geotech Report, Contract Documents | Table 1705.7           |                   |                                                                                                                            |
| 2. Determine capacities of test elements and conduct additional load tests, as require.                                                                                                                                                                                | X          | -        | Geotech Report, Contract Documents | Table 1705.7           |                   | 31 2323                                                                                                                    |
| 3. Inspect driving operations and maintain complete and accurate records for each element                                                                                                                                                                              | X          | -        | Geotech Report, Contract Documents | Table 1705.7           |                   | 31 2323                                                                                                                    |
| 4. Verify placement locations and plumbness, confirm type and size of hammer, record number of blows per foot of penetration, determine required penetrations to achieve design capacity, record tip and butt elevations and document any damage to foundation element | X          | -        | Geotech Report, Contract Documents | Table 1705.7           |                   |                                                                                                                            |
| 5. For steel elements, perform additional inspections in accordance with Code Section 1705.2                                                                                                                                                                           | -          | -        | Geotech Report, Contract Documents | Table 1705.7<br>1705.2 |                   |                                                                                                                            |
| 6. For concrete elements and concrete-filled elements, perform tests and additional special inspections in accordance w/ Code Section 1705.3                                                                                                                           | -          | -        | Geotech Report, Contract Documents | Table 1705.7<br>1705.3 |                   |                                                                                                                            |
| 7. For specialty elements, perform additional inspections as determined by the RDP in responsible charge                                                                                                                                                               | -          | -        | Geotech Report, Contract Documents | Table 1705.7           |                   |                                                                                                                            |
| <b>J. CAST-IN-PLACE DEEP FOUNDATIONS</b>                                                                                                                                                                                                                               |            |          |                                    |                        |                   |                                                                                                                            |
| 1. Inspect drilling operations and maintain complete and accurate records for each element.                                                                                                                                                                            | X          | -        | Geotech Report, Contract Documents | Table 1705.8           |                   |                                                                                                                            |
| 2. Verify placement locations and plumbness, confirm element diameters, bell diameters (if applicable), lengths, embedment into bedrock (if applicable) and adequate end-bearing strata capacity. Record concrete or grout volumes.                                    | X          | -        | Geotech Report, Contract Documents | Table 1705.8           |                   |                                                                                                                            |

| INSPECTION AND TESTING (Continuous & Periodic is as Defined by the BCNYS)                                                                                                                                                                                                                                                                                                                                             | CONTINUOUS | PERIODIC | REFERENCE STANDARD                 | BCNYS REFERENCE                   | CHECK IF REQUIRED | IDENTIFY SPEC SECTION AND PROVIDE CLARIFYING NOTES IF NECESSARY (the default spec sections listed may need to be modified)                           |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------|------------------------------------|-----------------------------------|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3. For concrete elements, perform tests and additional special inspections in accordance with Code Section 1705.3. See Special Inspections Concrete Construction.                                                                                                                                                                                                                                                     | -          | -        | Geotech Report, Contract Documents | Table 1705.8, 1705.3              |                   |                                                                                                                                                      |
| <b>K. HELICAL PILE FOUNDATIONS</b>                                                                                                                                                                                                                                                                                                                                                                                    |            |          |                                    |                                   |                   |                                                                                                                                                      |
| 1. Record installation equipment used, pile dimensions, tip elevations, final depth, final installation torque and other installation data as required by the RDP.                                                                                                                                                                                                                                                    | X          |          | Geotech Report, Contract Documents | 1705.9                            | ✓                 | 31 6615                                                                                                                                              |
| <b>L. FABRICATED ITEMS</b>                                                                                                                                                                                                                                                                                                                                                                                            |            |          |                                    |                                   |                   |                                                                                                                                                      |
| 1. The RDP shall identify any structural, load-bearing or lateral load-resisting members or assemblies that are specified to be fabricated off site i.e. in a fabricator's shop. Special inspections shall be required for these items unless:<br>a. The fabricator maintains approved detailed fabrication and quality control procedures that provide conformance to the approved construction documents & IBC 2018 |            |          |                                    | 1704.2.5<br>1704.2.5.1<br>1705.10 | ✓                 | Structural Steel<br>Steel Joists, Girders<br>Precast Concrete<br>Prestressed Concrete<br>Wood Construction (trusses, walls, floors, roof assemblies) |
| b. The fabricator is registered and approved                                                                                                                                                                                                                                                                                                                                                                          |            |          |                                    | 1704.2.5.1                        |                   | Cold-formed steel trusses                                                                                                                            |
| <b>M. WIND-FORCE-RESISTANT ITEMS</b>                                                                                                                                                                                                                                                                                                                                                                                  |            |          |                                    |                                   |                   |                                                                                                                                                      |
| 1. Structural Wood                                                                                                                                                                                                                                                                                                                                                                                                    | X          | X        |                                    | 1705.11.1                         |                   |                                                                                                                                                      |
| 2. Cold Formed Steel Lightweight Construction                                                                                                                                                                                                                                                                                                                                                                         |            | X        |                                    | 1705.11.2                         |                   |                                                                                                                                                      |
| 3. Components: Roof covering, roof deck, and roof framing connections                                                                                                                                                                                                                                                                                                                                                 |            | X        |                                    | 1705.11.3 (1)                     |                   |                                                                                                                                                      |
| 4. Components: Exterior wall covering and wall connections to roof and floor diaphragms and framing                                                                                                                                                                                                                                                                                                                   |            | X        |                                    | 1705.11.3 (2)                     |                   |                                                                                                                                                      |
| <b>N. TESTING FOR SEISMIC RESISTANCE (ASCE 341-16 and ASCE 7-16)</b>                                                                                                                                                                                                                                                                                                                                                  |            |          |                                    |                                   |                   |                                                                                                                                                      |
| 1. Structural Steel                                                                                                                                                                                                                                                                                                                                                                                                   |            |          | AISC 341                           | 1705.12.1.1<br>1705.13.1.1        |                   | 05 1200<br>05 1213                                                                                                                                   |
| 2. Structural Steel Elements                                                                                                                                                                                                                                                                                                                                                                                          |            |          | AISC 341                           | 1705.12.1.2<br>1705.13.1.2        |                   | 05 1200, 05 1213                                                                                                                                     |
| 3. Structural Wood gluing and fastening                                                                                                                                                                                                                                                                                                                                                                               |            | X        |                                    | 1705.12.2                         |                   | 06 1000, 06 1753<br>06 1800, 06 1733                                                                                                                 |
| 4. Cold Formed Steel Lightweight Construction welding and fastening                                                                                                                                                                                                                                                                                                                                                   |            | X        |                                    | 1705.12.3                         |                   | 05 4000<br>05 4400                                                                                                                                   |
| 5. Designated Seismic Systems                                                                                                                                                                                                                                                                                                                                                                                         |            |          | ASCE 7: 13.2.2                     | 1705.12.4                         |                   |                                                                                                                                                      |
| 6. Architectural Components: (seismic)                                                                                                                                                                                                                                                                                                                                                                                |            |          |                                    |                                   |                   |                                                                                                                                                      |
| a. Exterior cladding, interior or exterior nonbearing walls and int. and ext. veneer 30 ft. or less above grade or walking surface                                                                                                                                                                                                                                                                                    |            | X        |                                    | 1705.12.5                         |                   |                                                                                                                                                      |
| b. Exterior cladding or int. or ext. veneer weighing 5 psf or less                                                                                                                                                                                                                                                                                                                                                    |            | X        |                                    | 1705.12.5                         |                   |                                                                                                                                                      |

[illegible]

| INSPECTION AND TESTING (Continuous & Periodic is as Defined by the BCNYS)                                                                                                                           |            |          | REFERENCE STANDARD                         | BCNYS REFERENCE                                   | CHECK IF REQUIRED | IDENTIFY SPEC SECTION AND PROVIDE CLARIFYING NOTES IF NECESSARY (the default spec sections listed may need to be modified) |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------|----------|--------------------------------------------|---------------------------------------------------|-------------------|----------------------------------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                     | CONTINUOUS | PERIODIC |                                            |                                                   |                   |                                                                                                                            |
| 1. For high-rise buildings or Risk Category III or IV buildings inspect through-penetrations and membrane penetration firestops                                                                     |            | X        | ASTM E2174, ASTM E814 or UL 1479           | 1705.17, 1705.17.1, 714.5.1.2, 714.4.2, 714.4.1.2 |                   | 07 8400                                                                                                                    |
| 2. For high-rise buildings or Risk Category III or IV buildings inspect fire-resistant joint systems and perimeter fire barrier systems                                                             |            | X        | ASTM: E119, E2393, E2307, E1966 or UL 2079 | 1705.17<br>1705.17.2<br>715.3<br>715.4            |                   | 07 8400                                                                                                                    |
| <b>T. SMOKE CONTROL SYSTEM</b>                                                                                                                                                                      |            |          |                                            |                                                   |                   |                                                                                                                            |
| 1. Tested during erection of ductwork and prior to concealment for leakage testing and recording of device location                                                                                 |            | X        |                                            | 1705.18.1 (1)                                     |                   |                                                                                                                            |
| 2. Tested prior to occupancy and after sufficient completion of pressure difference testing, flow measurements and detection and control verification                                               |            | X        |                                            | 1705.18.1 (2)                                     |                   |                                                                                                                            |
| <b>U. ADDITIONAL SPECIAL INSPECTIONS AND TESTS</b>                                                                                                                                                  |            |          |                                            |                                                   |                   |                                                                                                                            |
| 1. Design Strength of Materials                                                                                                                                                                     |            |          |                                            | 1706                                              |                   |                                                                                                                            |
| 2. Alternative Test Procedures                                                                                                                                                                      |            |          |                                            | 1707                                              |                   |                                                                                                                            |
| 3. In-Situ Load Tests                                                                                                                                                                               |            |          |                                            | 1708                                              |                   |                                                                                                                            |
| 4. Preconstruction Load Tests                                                                                                                                                                       |            |          |                                            | 1709                                              |                   |                                                                                                                            |
| 5. Structural Observations                                                                                                                                                                          |            |          |                                            | 1704.6, 1704.6.1<br>1704.6.2                      |                   |                                                                                                                            |
| <b>V. ALTERNATE MATERIALS AND SYSTEMS / SPECIAL CASES</b>                                                                                                                                           |            |          |                                            |                                                   |                   |                                                                                                                            |
| 1. Construction materials and systems that are alternatives to materials and systems prescribed by the IBC                                                                                          |            |          |                                            | 1705.1.1                                          |                   |                                                                                                                            |
| 2. Unusual design applications of materials described by the IBC                                                                                                                                    |            |          |                                            | 1705.1.1                                          |                   |                                                                                                                            |
| 3. Materials and systems required to be installed in accordance with additional manufacturer's instructions that prescribe requirements not contained in code or in standards referenced by the IBC |            |          |                                            | 1705.1.1                                          |                   |                                                                                                                            |





Andrew M. Cuomo, Governor

Roberta Reardon, Commissioner

Port Jervis CSD

Scott Duell  
798 Cascadilla Street  
Suite C  
Ithaca NY 14850

Schedule Year 2021  
Date Requested 07/22/2021  
PRC# 2021007719

Location Port Jervis Middle School

Project ID#

Project Type Additions and Renovations to Port Jervis Middle School SED Control No. 44-18-00-05-0-005-016

### PREVAILING WAGE SCHEDULE FOR ARTICLE 8 PUBLIC WORK PROJECT

Attached is the current schedule(s) of the prevailing wage rates and prevailing hourly supplements for the project referenced above. A unique Prevailing Wage Case Number (PRC#) has been assigned to the schedule(s) for your project.

The schedule is effective from July 2021 through June 2022. All updates, corrections, posted on the 1st business day of each month, and future copies of the annual determination are available on the Department's website [www.labor.ny.gov](http://www.labor.ny.gov). Updated PDF copies of your schedule can be accessed by entering your assigned PRC# at the proper location on the website.

It is the responsibility of the contracting agency or its agent to annex and make part, the attached schedule, to the specifications for this project, when it is advertised for bids and /or to forward said schedules to the successful bidder(s), immediately upon receipt, in order to insure the proper payment of wages.

Please refer to the "General Provisions of Laws Covering Workers on Public Work Contracts" provided with this schedule, for the specific details relating to other responsibilities of the Department of Jurisdiction.

Upon completion or cancellation of this project, enter the required information and mail **OR** fax this form to the office shown at the bottom of this notice, **OR** fill out the electronic version via the NYSDOL website.

#### NOTICE OF COMPLETION / CANCELLATION OF PROJECT

Date Completed: \_\_\_\_\_ Date Cancelled: \_\_\_\_\_

Name & Title of Representative: \_\_\_\_\_

Phone: (518) 457-5589 Fax: (518) 485-1870  
W. Averell Harriman State Office Campus, Bldg. 12, Room 130, Albany, NY 12240

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Andrew M. Cuomo, Governor

Roberta Reardon, Commissioner

Port Jervis CSD  
Scott Duell  
798 Cascadilla Street  
Suite C  
Ithaca NY 14850

Schedule Year 2021  
Date Requested 07/22/2021  
PRC# 2021007719

Location Port Jervis Middle School  
Project ID#  
Project Type Additions and Renovations to Port Jervis Middle School SED Control No. 44-18-00-05-0-005-016

### Notice of Contract Award

New York State Labor Law, Article 8, Section 220.3a requires that certain information regarding the awarding of public work contracts, be furnished to the Commissioner of Labor. One "Notice of Contract Award" (PW 16, which may be photocopied), **MUST** be completed for **EACH** prime contractor on the above referenced project.

Upon notifying the successful bidder(s) of this contract, enter the required information and mail **OR** fax this form to the office shown at the bottom of this notice, **OR** fill out the electronic version via the NYSDOL website.

### Contractor Information

All information must be supplied

|                                               |                                                    |            |
|-----------------------------------------------|----------------------------------------------------|------------|
| Federal Employer Identification Number: _____ |                                                    |            |
| Name: _____                                   |                                                    |            |
| Address: _____<br>_____                       |                                                    |            |
| City: _____                                   | State: _____                                       | Zip: _____ |
| Amount of Contract: \$ _____                  | Contract Type:                                     |            |
| Approximate Starting Date: ____/____/____     | <input type="checkbox"/> (01) General Construction |            |
| Approximate Completion Date: ____/____/____   | <input type="checkbox"/> (02) Heating/Ventilation  |            |
|                                               | <input type="checkbox"/> (03) Electrical           |            |
|                                               | <input type="checkbox"/> (04) Plumbing             |            |
|                                               | <input type="checkbox"/> (05) Other : _____        |            |

Phone: (518) 457-5589 Fax: (518) 485-1870  
W. Averell Harriman State Office Campus, Bldg. 12, Room 130, Albany, NY 12240

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Kathy Hochul, Governor

Roberta Reardon, Commissioner

Port Jervis CSD

Scott Duell  
401 East State Street  
Suite 200  
Ithaca NY 14850

Schedule Year 2021 through 2022  
Date Requested 12/17/2020  
PRC# 2020012491

Location 118 East Main Street  
Project ID#  
Project Type Alterations to Port Jervis MS

### PREVAILING WAGE SCHEDULE FOR ARTICLE 8 PUBLIC WORK PROJECT

Attached is the current schedule(s) of the prevailing wage rates and prevailing hourly supplements for the project referenced above. A unique Prevailing Wage Case Number (PRC#) has been assigned to the schedule(s) for your project.

The schedule is effective from July 2021 through June 2022. All updates, corrections, posted on the 1st business day of each month, and future copies of the annual determination are available on the Department's website [www.labor.ny.gov](http://www.labor.ny.gov). Updated PDF copies of your schedule can be accessed by entering your assigned PRC# at the proper location on the website.

It is the responsibility of the contracting agency or its agent to annex and make part, the attached schedule, to the specifications for this project, when it is advertised for bids and /or to forward said schedules to the successful bidder(s), immediately upon receipt, in order to insure the proper payment of wages.

Please refer to the "General Provisions of Laws Covering Workers on Public Work Contracts" provided with this schedule, for the specific details relating to other responsibilities of the Department of Jurisdiction.

Upon completion or cancellation of this project, enter the required information and mail **OR** fax this form to the office shown at the bottom of this notice, **OR** fill out the electronic version via the NYSDOL website.

#### NOTICE OF COMPLETION / CANCELLATION OF PROJECT

Date Completed: \_\_\_\_\_ Date Cancelled: \_\_\_\_\_

Name & Title of Representative: \_\_\_\_\_

Phone: (518) 457-5589 Fax: (518) 485-1870  
W. Averell Harriman State Office Campus, Bldg. 12, Room 130, Albany, NY 12240

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Kathy Hochul, Governor

Roberta Reardon, Commissioner

Port Jervis CSD

Scott Duell  
401 East State Street  
Suite 200  
Ithaca NY 14850

Schedule Year 2021 through 2022  
Date Requested 12/17/2020  
PRC# 2020012491

Location 118 East Main Street  
Project ID#  
Project Type Alterations to Port Jervis MS

### Notice of Contract Award

New York State Labor Law, Article 8, Section 220.3a requires that certain information regarding the awarding of public work contracts, be furnished to the Commissioner of Labor. One "Notice of Contract Award" (PW 16, which may be photocopied), **MUST** be completed for **EACH** prime contractor on the above referenced project.

Upon notifying the successful bidder(s) of this contract, enter the required information and mail **OR** fax this form to the office shown at the bottom of this notice, **OR** fill out the electronic version via the NYSDOL website.

### Contractor Information

All information must be supplied

|                                               |                                                    |            |
|-----------------------------------------------|----------------------------------------------------|------------|
| Federal Employer Identification Number: _____ |                                                    |            |
| Name: _____                                   |                                                    |            |
| Address: _____<br>_____                       |                                                    |            |
| City: _____                                   | State: _____                                       | Zip: _____ |
| Amount of Contract: \$ _____                  | Contract Type:                                     |            |
| Approximate Starting Date: ____/____/____     | <input type="checkbox"/> (01) General Construction |            |
| Approximate Completion Date: ____/____/____   | <input type="checkbox"/> (02) Heating/Ventilation  |            |
|                                               | <input type="checkbox"/> (03) Electrical           |            |
|                                               | <input type="checkbox"/> (04) Plumbing             |            |
|                                               | <input type="checkbox"/> (05) Other : _____        |            |

Phone: (518) 457-5589 Fax: (518) 485-1870  
W. Averell Harriman State Office Campus, Bldg. 12, Room 130, Albany, NY 12240

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## SECTION 00 3113

### MILESTONE CONSTRUCTION SCHEDULE

#### PART 1 GENERAL

##### 1.01 GENERAL

- A. The established Milestone Construction Schedule applies to all Prime Contractors. Particular attention is called to the existing site restrictions, including but not limited to: existing roadways, traffic patterns and parking and to the Owner's established operating schedule. At all times, provisions must be made to accommodate the normal working operation of the Owner including working irregular shifts and maintaining open and clear passage for school buses along the established route. Work at the project site which will impact the Owner's operations must be coordinated in advance through the Engineer. At no time will the Contractor be allowed to adversely disrupt the operation of the Owner without approval of a written request.
- B. The Contractor understands that time is of the essence, and that he will schedule accordingly and provide the necessary means, methods, and manpower to complete the project elements within their allotted time frame.
- C. If meeting the established milestone dates require that the Contractor apply multiple shifts and/or work during night-time or weekend hours to perform his work, he may be allowed special access to the site. Expressed written requests must be received and reviewed prior to any such access.
- D. All incomplete and deficient work indicated on the Items to be Completed List shall be completed 20 business days after the issuance of the Certification of Substantial Completion unless otherwise noted.
- E. Refer to paragraph 8.3 of the General Conditions of the Contract for Construction for information concerning liquidated damages for stretch out and delay.

#### PART 2

##### 2.01 SCHEDULE – Also refer to the Summary of Work and the Phasing Plans in the Drawings for additional information.

- A. Bid Award: On or about March 22, 2022
- B. Construction
  - a. CM Office Trailer – February 25, 2022
  - b. Mobilization – June 24, 2022
  - c. Start Work at Site, Area A, Stair #2 – June 27, 2022
  - d. Existing Building / Addition Openings – August 13, 2022
  - e. Bus Loop – August 20, 2022
  - f. East Parking Lot – Loop Road – (binder) – August 27, 2022
  - g. Stair #2 Substantial Completion – September 2, 2022
  - h. Addition Enclosed – December 3, 2022
  - i. Start Work Area B – June 27, 2022
  - j. Abatement Finish Area B – August 13, 2022
  - k. Substantial Completion Area A & B – August 4, 2023
  - l. Ball Field & Playground – September 16, 2023
  - m. Start Boiler Room Decommission/Demolition – May 28, 2023
  - n. Start Work Area C – July 1, 2023
  - o. Abatement Finish Area C – August 10, 2023
  - p. Substantial Completion Area C – August 2, 2024
  - q. Project Substantial Completion – August 31, 2024

- r. Final Completion – November 1, 2024
- C. Substantial Completion: August 31, 2024
- D. Final Completion: November 1, 2024

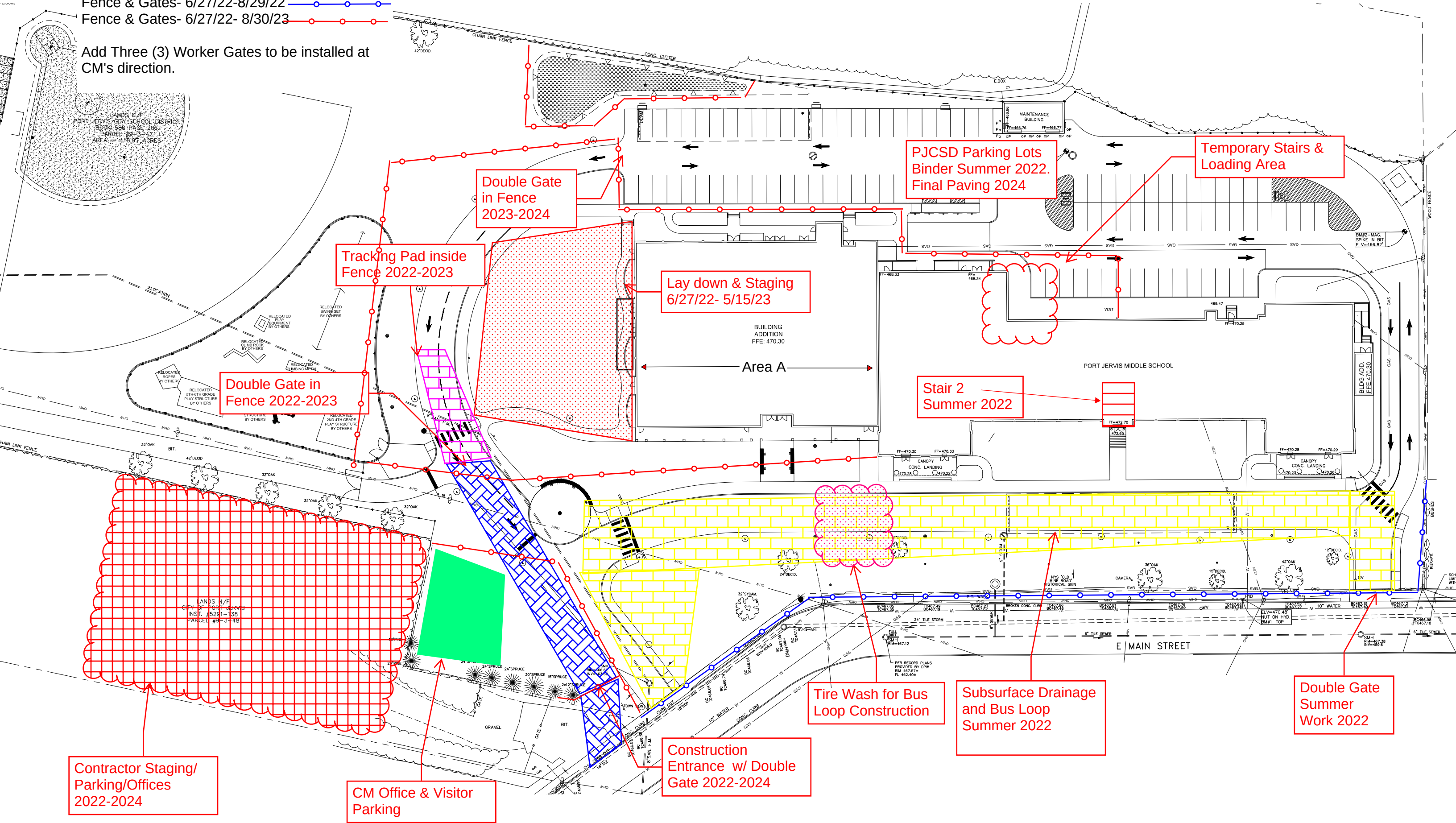
**END OF SECTION**

Legend= Phase 1

Fence & Gates- 6/27/22-8/29/22

Fence & Gates- 6/27/22- 8/30/23

Add Three (3) Worker Gates to be installed at CM's direction.





Legend = Phase 2

Fence & Gates- 7/1/23-9/30/24

Fence & Gates- 7/1/23- 9/22/23

Fence & Gates- 6/30/23-7/1/24

Add Three (3) Worker Gates to be installed at CM's direction.

Double Gate in Fence Ball Field/Playground Work Summer 2023

PJCSD Employee Parking Lot & Access Loop Road. Final Paving Summer 2024

Boiler Room & Fuel Oil Tank Demolition and Infill Summer 2023

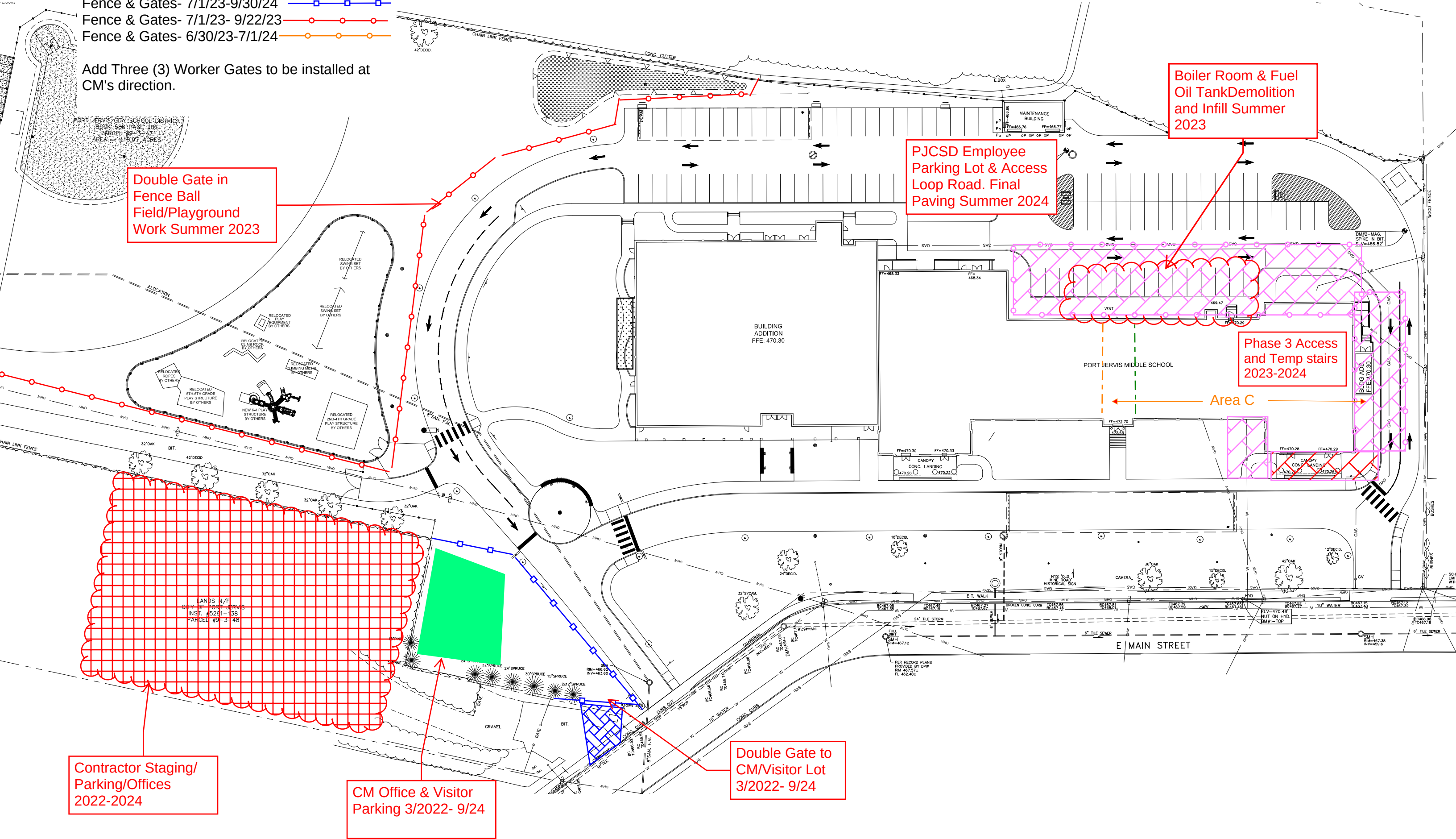
Phase 3 Access and Temp stairs 2023-2024

Area C

Double Gate to CM/Visitor Lot 3/2022- 9/24

Contractor Staging/ Parking/Offices 2022-2024

CM Office & Visitor Parking 3/2022- 9/24





**SECTION 01 0000  
GENERAL REQUIREMENTS**

**PART 1 GENERAL**

**1.01 WORK TO BE PERFORMED**

- A. Work shown on the Contract Drawings, described in the Specifications, or as required to provide a proper and functionally complete Project all in accordance with the Contract Documents, including any and all addenda.

**1.02 WORK BY OTHERS**

- A. The Owner is occupying the site of the Work and reserves the right to let other Contractors for Work on the premises should the need arise.

**1.03 OWNER OCCUPANCY**

- A. The building site and the building, whether the Work of the Contractor is partially or fully completed, are the properties of the Owner.
- B. The Owner will occupy the site and the building during the period the Work is to be completed. All activities in and around the building shall be strictly coordinated by the Construction Manager. In all cases, the Owner's requirements will take precedence.

**1.04 SUBMITTALS**

- A. Shop Drawing submittals are required for all items specifically required by the Contract Documents; all items indicated on the Contract Drawings not specifically specified and any and all other materials and equipment installed in the Project as requested by the Architect/Engineer.

**1.05 CORRELATION, INTERPRETATION, AND INTENT OF CONTRACT DOCUMENTS**

- A. In resolving conflicts and discrepancies, the Documents shall be given precedence in the following order: Agreement, Modifications, Addenda, Special Conditions, Instruction to Bidders, Supplementary Conditions, General Conditions, Specifications, and Drawings.
- B. In the case of conflict or discrepancies between Drawings and Divisions 2 thru 49 of the Specifications or within or among the Contract Documents and not clarified by Addendum, the Architect/Engineer will determine which takes precedence.
- C. In case of discrepancy in regard to the Contract Drawings, the more stringent requirement or the detailed drawing shall take precedence over a less detailed drawing.
- D. The Contract Documents are complementary, what is called for by one (1) is as binding as if called for by all. Construction materials, techniques and finishes shall be applied/installed consistently throughout the project wherever they may be reasonably inferred to be necessary.

**1.06 CONSTRUCTION AIDS**

- A. Scaffolding, Hoists, etc. This phase of the operation is at the option of the Contractor. All construction aids shall meet the requirements of the various laws and regulations governing the building and the building operation.

**1.07 SECURITY**

- A. Each Prime Contractor shall be responsible for his own security in reference to the Work completed, materials and equipment stored on-site and in the building, etc. (refer to Supplementary Conditions).
- B. Each and every Construction Worker shall be required to wear a photo-identification badge at all times while at the Project. Construction workers not having the required photo identification shall be removed from the site (refer to Section 01 3553 - Security Procedures for additional requirements).
- C. Each Contractor shall maintain manufacturer's Material Safety Data Sheets (MSDS) at site for all products used in Project. MSDS sheets shall be provided to Owner when requested.

### **1.08 ACCESS TO SITE**

- A. Access to and egress from site for Contractors' employees, trucks, construction machinery, material deliveries, etc., shall be in accordance with prevailing local or other ordinances, and on existing access roads and drives.
- B. Any damage caused to roads, drives, or planted areas by the Contractor or his subcontractor(s) shall be repaired or replaced as required to put them in the same or better condition than at the start of Work.

### **1.09 SPECIAL CONTROLS**

- A. SMOKING IS PROHIBITED on the Project site, including construction areas, construction staging areas, field offices, and the entire school campus.
- B. Each Contractor and their subcontractors shall take any and all necessary precautions required by the Owner, directed by the Project Representative, and governed by any ordinance relative to noise, dust, water, pest, rodent, mosquito, or pollution control.
- C. Construction activities and operations shall not produce noise in excess of 60 dba in occupied spaces. If noise levels in occupied spaces exceed 60 dba, the Contractor shall provide acoustical abatement procedures or schedule activities during unoccupied times.
- D. Each Contractor is responsible to ensure the protection of personnel engaged in operations where exposure to inorganic lead or lead compounds above the action level can reasonably be expected.
- E. Each Contractor shall be responsible for safety and adhering to OSHA requirements.
- F. Each Contractor's attention is called to the matter of LITTER. Litter shall be classified as personal disposable items brought to the site by the Contractor, mechanics, or employees. The Contractor shall be responsible for the removal of litter by such means as trash cans, placed at strategic locations, laborers, or other means.

### **1.10 PROTECTION AGAINST FIRE**

- A. Fire Watch: While the Contractor is completing building demolition, qualified personnel shall be provided to serve as an on-site fire watch. The sole duty of fire-watch personnel shall be to watch for the occurrence of fire.
- B. Cutting and Welding: Operations involving the use of cutting and welding shall be done in accordance with Chapter 33 - Fire Safety During Construction and Demolition, and Chapter 35 - Welding and Other Hot Work, of the Fire Code of New York State.
- C. Spontaneous Ignition: Materials susceptible to spontaneous ignition (i.e., oily rags) shall be stored in listed disposal container.
- D. During construction, the Contractor shall provide one (1) fire extinguisher per construction work area. The fire extinguisher shall be approved portable type. Extinguisher(s) shall be provided in accordance with NFPA 10 and the Fire Code of New York State.

### **1.11 TRANSPORTATION AND HANDLING**

- A. Each Contractor and his subcontractor(s) shall be responsible for the transportation and handling of all materials from, to, and at the project site. All damages thereto shall be replaced by the responsible party at no additional cost to the Owner.
- B. Each Contractor is advised that under no circumstances shall the Owner's agents take responsibility for receiving any materials or equipment sent to the project site. Each Contractor shall make all arrangements to have personnel available to receive all deliveries. The Owner accepts no responsibility for any materials or equipment delivered to the job site.

### **1.12 STORAGE AND PROTECTION**

- A. Storage of materials shall be on the sites and location of same on-site is subject to the approval of the Construction Manager and Owner.
- B. All construction materials shall be stored in a safe and secure manner.



- C. The General Contractor shall provide fencing around all construction supplies, debris, equipment, and construction staging areas throughout the duration of the Project.
- D. Gates to construction material/debris storage areas shall be maintained locked at all times unless an authorized worker is in attendance to prevent unauthorized entry.
- E. During exterior reconstruction and new construction, the Contractor shall provide overhead protection for any and all existing entry/exits, sidewalks, and egress windows or areas directly below the work site.

#### **1.13 CLEANING-UP**

- A. All occupied parts of the building affected by renovation activity shall be cleaned at the end of Contractor's work day. Each Contractor shall keep all surfaces as free as practical from the accumulation of construction related dust. All surfaces shall be cleaned of dust prior to occupancy by the Owner.
- B. Each Contractor shall clean up on a regular basis and upon completion of the Work. He shall remove all debris, construction equipment and leave all areas clean, and finishes as required by the specifications, ready for Owner occupancy.
- C. All materials removed during the course of the Work shall become the property of this Contractor and shall be immediately removed from the site. The Owner is to have first refusal of any furnishings and/or equipment slated for removal.
- D. All debris resulting from the accomplishment of the Work shall be immediately removed from the site.
- E. In all special cases (as coordinated with the Owner and Construction Manager) where a Contractor has access to an occupied space during non-operating hours, the Contractor shall be completely responsible for cleaning the work area upon completion of his day's Work, prior to re-occupancy by the Owner.
- F. The General Contractor shall be responsible for proper snow removal on a regular basis within the work and staging areas of the addition throughout the duration of the Project.

#### **1.14 SUBSOIL INVESTIGATION**

- A. A limited investigation has been made of the subsurface soil conditions at the work site. If available, the Contract Documents contain boring log and field test results.
- B. Neither the Owner nor the Engineer represent that boring logs if included in the Contract Documents indicate the conditions that will be encountered in performing the Work. They represent only that the logs indicate conditions encountered at the particular location of the boring. The Contractor shall assume all risk and responsibility for any deductions and conclusions which may be made as to the nature of the materials to be excavated the difficulties of making and maintaining the required excavation and of doing other Work affected by geology at the site of the Work.
- C. The Owner and Architect/Engineer disclaim responsibility for any opinions, conclusions, interpretations, or deductions that may be expressed or implied in any of the information made available. It is expressly understood that the making of deductions, interpretations and conclusions from all the accessible factual information is solely the Contractor's responsibility.
- D. The Owner may conduct additional investigations as the Work progresses. Additional logs and test results from such investigations will be made available to the Contractor.

#### **1.15 LEAD BASED PAINT INVESTIGATION**

- A. A limited investigation has been made for the presence of lead based paints within areas impacted by the Project. If available, the Contract Documents shall contain the test results.
- B. Neither the Owner nor the Architect/Engineer represent that test results if included in the Contract Documents indicate the conditions that will be encountered in performing the Work. They represent only that the test results indicate conditions encountered at the particular location of the testing. The Contractor shall assume all risk and responsibility for any deductions and conclusions which may be made from these test results.

- C. The Owner and Architect/Engineer disclaim responsibility for any opinions, conclusions, interpretations or deductions that may be expressed or implied in any of the information made available. It is expressly understood that the making of deductions, interpretations, and conclusions from all the accessible factual information is solely the Contractor's responsibility.
- D. The Owner may conduct additional investigations as the Work progresses. Additional test results from such investigations will be made available to the Contractor.

#### **1.16 PROJECT LINES AND GRADES**

- A. Contractor will develop a digital construction survey worksheet generating construction stakeout coordinates for clearing limit lines, mass grading grid, ditches, building corners, parking lot corners, catch basins, storm manholes, sanitary manholes, sanitary lines, storm lines water lines, etc. The General and/or Site Contractor will be provided Electronic Drawings and coordinate lists in AutoCAD format.
- B. The General and/or Site Contractor will carefully coordinate the Construction Stakeout Work so the site is ready and there is a sufficient amount of Work to keep the survey crew working for at least 1 day. The Owner's Representative will be given 3 working days notice when requesting Survey Stakeout Work.
- C. Upon completion of the field staking provided by the General Contractor, the General Contractor and/or Site Contractor shall be responsible for protection of the survey points. Should it be required that the survey points be re-established due to no fault of the Owner, the cost associated with this Work will be the responsibility of the Contractor requiring the Work to be performed.
- D. Refer to Section 01 7000 - Execution Requirements for Contractor's requirements for laying out his Work.
- E. The project base line(s) will be established by the Contractor and reviewed by the Architect/Engineer prior to construction.
- F. Upon completion of the Work, the General Contractor shall furnish to the Owner a survey Prepared by a licensed State of New York surveyor indicating the finally constructed lines and grades of all Work within the Contract limits, to include new building lines in relation to existing and the location and elevations or inverts of new paving, walks, and storm and sanitary lines and related catch basins and manholes provided at the site as part of the General Contractor's Work.

#### **1.17 RESTRICTED ACCESS**

- A. Each Contractor is hereby notified that access to the site is limited by existing physical and scheduling constraints.
- B. Access to and egress from the site for Contractor's employees, trucks, construction machinery, material deliveries, etc., shall be as coordinated and directed by the Construction Manager, who shall dictate all traffic patterns.
- C. The Construction Manager will designate existing roadways and drives which will be utilized for construction traffic as well as Contractor's staging areas. It is recognized and contemplated by all parties that these areas may sustain damage due to the construction traffic and the General Contractor will, at the time of completion of the Project, be completely responsible for performing all Remedial and Reconstruction Work required to re-construct the driveways, roadways, temporary access roads, and lawn areas as new, in accordance with the requirements of the Contract Documents.
- D. Additionally, it shall be Contractor's responsibility to coordinate his schedule with that of the Owner. The Owner's functions shall take precedence and the Contractor shall ensure safe and convenient access to the existing building on these occasions, subject to the approval of the Owner and the Construction Manager.

#### **1.18 TEMPORARY BARRIERS AND BARRICADES**

- A. Each Prime Contractor shall be responsible for providing temporary barriers and barricades as required and directed by the Construction Manager to secure his Work. Barricades to be in

place at all times especially when the Contractor is not at the project site. In addition, the General Contractor shall erect barriers for safety and dust control inside and outside the building, as directed by the Construction Manager.

**1.19 CONTRACTORS STAGING**

- A. Areas for the Contractor's vehicle parking, storage trailers, staging, and offices shall be coordinated by the Construction Manager.

**PART 2 PRODUCTS - NOT USED**

**PART 3 EXECUTION - NOT USED**

**END OF SECTION**

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**SECTION 01 12 00 - SUMMARY OF PROJECT****PART 1 - GENERAL****1.1 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including the General and Supplemental Conditions and Division 1 Specification Section, apply to this Section.

**1.2 SUMMARY**

- A. Section includes:

1. Project information.
2. Work covered by Contract Documents.
3. Construction schedule.
4. Requirements and assignments for each Contract.
5. Owner-furnished products.
6. Access to site.
7. Coordination with occupants.
8. Work restrictions.

- B. Section includes a summary of each contract, including responsibilities for coordination and temporary facilities and controls.

- C. Each Contractor is responsible to review all Drawings and Specifications for every contract to gain a complete understanding and knowledge of the entire Project, to determine how the work of each contract is to interface with every other contract.

**1.3 DEFINITIONS**

- A. Permanent Enclosure: As determined by Architect, the condition at which roofing is insulated and weathertight; exterior walls are insulated and weathertight; and all openings are closed with permanent construction; and all exterior joints are sealed.

**1.4 PROJECT INFORMATION**

- A. Project Identification: Additions and Alterations to: Port Jervis Middle School.

1. Project Location: 118 East Main Street, Port Jervis, New York 12771.

- B. Owner: Port Jervis City School District.

1. Address: 9 Thompson Street, Port Jervis, New York 12771.

- C. Architect: **BCA ARCHITECTS & ENGINEERS**

1. Address: 798 Cascadilla Street, Suite C, **Ithaca**, New York 14850

- D. Construction Manager: Luis Rodriguez – The Palombo Group

1. Address: 195 Front Street, 1<sup>st</sup> Floor, Newburgh, New York 12550.
  2. Construction Manager has been engaged for this Project to serve as an advisor to Owner and to provide assistance in administering the Contract for Construction between Owner and each Contractor, according to a separate contract between Owner and Construction Manager.
- E. Project Representative: Project Representative will be appointed by Owner.
1. Project Representative will provide assistance in administering the Contract for Construction between Owner and each Contractor, according to provisions of Division 01 Section "Project Management and Coordination".
- F. Building Code in Effect for Project: New York State Uniform Fire Prevention and Building Code and the Energy Conservation Construction Code of New York State.
1. Comply with the following: New York State Energy Conservation Code and the building standards of the New York State Education Department.

#### 1.5 THE CONTRACT

- A. The Project will be constructed under a multiple prime contracting arrangement with the Owner awarding and holding the separate Contracts. Each contractor shall furnish all labor, material, tools, equipment, supervision, layout, delivery, trucking, shop drawings, submittals, etc. necessary to complete the work described in the Division of Work of their respective Contracts and based upon a complete set of Contract Documents.
- B. Scope of work for each Prime Contractor is defined in Section 01 12 00 and takes precedence over all drawing notes that may refer to scoping.
- C. Each Contractor has been given the opportunity prior to bid to inspect the entire Project site for interferences to their Contract work and agrees to accept the site as it exists on the date of the bid opening.
1. It is the Owner's intention to continue to occupy the existing buildings and site for normal School operations during the Construction process. The Contractors all agree to:
    - a. Cooperate with the Owner's personnel in maintaining and facilitating access to the School's buildings and its facilities by the School staff, Students, Owner's agents, service consultants and the public, throughout the construction process.
    - b. Keep driveways and entrances serving the occupied School buildings clear and available to the Owner, the Owner's employees, the public, and to emergency vehicles at all times. Do not obstruct access to, or use these areas for parking, staging of equipment or materials. All access through these existing areas must be coordinated in advance and in accordance with the Owner's usage and occupancy schedule.
    - c. Schedule construction operations so as to minimize any conflicts or interruptions to the daily school functions. Disruptive construction procedures will be performed on off hours when the building is not occupied by students. Coordinate any necessary interruptions with the designated project representative.
    - d. All existing Owner-occupied areas of buildings (not turned over to the Project Contractors) are to remain operational at all times. The contractors are responsible to maintain all systems, such as but not limited to: fire alarm, clocks, electric, public address system, gas service, heat etc.

- D. Each Prime Contractor shall:
1. Provide field-engineering services, in addition to those provided by the General Work Prime Contract, to install site utilities included in the applicable Prime Contract.
  2. Coordinate construction schedule information in order to formulate one master schedule for the entire Project.
  3. Provide reflective vests to be worn by all personnel, while on the site. Parties that do not abide by this requirement will be escorted off the premises.
  4. Provide erosion and Sediment Control and dewatering as it relates to any excavation associated with its own Prime Contract.
  5. Provide potable drinking water for its own employees.
  6. Provide access to all concealed systems as required for system maintenance and repair for items installed in their Prime Contract. This specifically talks to access panels needed for future maintenance by the district.
  7. Provide and maintain material lifting equipment required for the completion of their Contract requirements, and complying with NYS Labor Laws, OSHA Regulations, and other Federal, State, and local laws.
  8. Provide and maintain additional temporary stairs, ladders, ramps, scaffolding, and platforms required specifically for completion of work of their own Contract, and as further detailed in this section. All work needs to comply with the NYS Labor Laws, OSHA regulation, and other Federal, State, and local laws.
  9. Provide Fire Prevention materials and equipment for fire protection related to the work of their own Prime Contract. Provide fire extinguishers, fire blankets, and fire watch during all cutting and welding operations.
  10. Provide any supplemental lighting required to install the work of its own Contract, beyond the minimum OSHA levels provided under the Electrical Work Prime Contract.
  11. Provide any supplemental heat required to install the work of its own Contract, beyond the levels owed by the General Work Contractor.
  12. Provide traffic control for deliveries, and equipment needed to perform the work of their own Prime Contract.
  13. Provide protection of its own finished Work, after installation, until accepted by the Owner.
  14. Provide fire caulking for any penetration related to the work for its own Prime Contract.
  15. Provide any office and storage trailers required to complete the work of their own Prime Contract.
  16. Provide final cleaning as specified.
  17. Provide for a thorough final cleaning of the site, building, and equipment provided under their Prime Contract immediately before the final inspection. Each Prime Contractor is responsible for cleaning and dust and debris generated from the work of their own Contract.
    - a. Maintain areas in a cleaned condition until the Owner occupies the space.
    - b. Personnel: Experienced workman or professional cleaners approved by the Construction Manager.
  18. Each Prime Contractor shall provide their own selective demolition, in regard to the Hazardous Materials Contractor. All piping, conduit, ductwork, lighting, UVs or other items shall be removed by the assigned contractor down to the point of attachment to the substrate.

## 1.6 SUMMARY OF WORK

- A. The work will be constructed under multiple prime contracts. One set of contract documents is issued covering the multiple contracts. Each Prime Contract is defined as:
1. CONTRACT 1 GC1- GENERAL CONSTRUCTION

2. CONTRACT 2 SC1- SITE CONSTRUCTION
3. CONTRACT 3 MC1- MECHANICAL CONSTRUCTION
4. CONTRACT 4 EC - ELECTRICAL WORK
5. CONTRACT 5 PC- PLUMBING WORK
6. CONTRACT 6 AB - HAZARDOUS MATERIALS WORK- *For Reference Only*
7. CONTRACT 7 FS1- FOOD SERVICE EQUIPMENT
8. CONTRACT 8 FP1- FIRE PROTECTION WORK- *For Reference Only*
9. CONTRACT 9 WC- WINDOWS

#### 1.7 WORK UNDER SEPARATE CONTRACTS

- A. The project will be constructed under a multiple-prime contracting arrangement
- B. One set of documents is issued covering all multiple prime contracts. Each prime contractor is to review ALL drawings and specifications for complete understanding and knowledge of the work.
- C. The following Contract Documents are specifically included and defined as integral to each Prime Contract.
  1. Bidding Requirements
  2. Performance and Payment Bonds
  3. Conditions of the Contract, including
    - a. General Conditions & Supplementary Conditions
    - b. Insurance Requirements
    - c. NYS Prevailing Wage Rates.
- D. Extent of Contract: Unless the Contract Documents contain a more specific description of the Work, names and terminology on Drawings and in Specification Sections determine which contract includes a specific element of Project.
  1. Unless otherwise indicated, the Work described in this Section for each contract shall be complete systems and assemblies, including products, components, accessories, and installation required by the Contract Documents.
  2. The General Construction Work Contract shall provide shoring and bracing and excavation for all work within the new building addition. The General Construction Work contractor is to refer to Mechanical, Electrical and Plumbing drawings for locations of utilities requiring shoring, bracing, excavation and backfilling.
  3. Concrete for the Work of each contract shall be provided by either the holder of CONTRACT GC1 for ALL INTERIOR concrete, or CONTRACT SC1 for ALL EXTERIOR concrete.
  4. Provide all cutting & patching associated with the Work of its Prime Contract. All patching is to be performed by mechanics qualified and experienced with the materials and finishes being patched and hired by the responsible Prime Contractor.
  5. Firestopping for the Work of each contract shall be provided by each contract for its own Work. Firestopping shall comply with Division 7 Section "Through Penetration Firestop Systems".
  6. Access doors not shown on Architectural drawings and required for access to junction boxes, valves, and similar equipment for the Work of each contract shall be furnished by each contract for its own Work to the General Construction Contractor for installation. *(Unless noted otherwise, installation by the General Construction Contractor is N.I.C., and will be accomplished by use of a portion of the contingency allowance).*



7. Lead Based Paint precautions for the Work of each contract shall be provided by each contract for its own Work. Each Prime Contractor shall provide procedures for OSHA Lead precautions.
  8. Each Prime Contractor shall designate a full-time superintendent to supervise the work of the Prime Contractor, who shall always be present on the job site when work is being performed; this person shall be familiar with Project and authorized to conclude matters relating to progress. This person shall also represent their company at weekly contractor meetings.
  9. Termination and removal of its temporary facilities shall be provided by each contract for its own Work.
- E. Temporary Facilities and Controls: In addition to specific responsibilities for temporary facilities and controls indicated in this Section and in Division 1 Section 01 50 00 "Temporary Facilities and Controls," each Contract is responsible for the following:
1. Installation, operation, maintenance, and removal of each temporary facility usually considered as its own normal construction activity, and costs and use charges associated with each facility
  2. Generators, plug-in electric power cords and extension cords, supplementary plug-in task lighting, and special lighting necessary exclusively for its own activities.
  3. Its own field office, complete with necessary furniture, utilities, and telephone service. The General Construction Contract GC1, is responsible for the Construction Managers Field office as per the specifications.
  4. Its own storage and fabrication sheds.
  5. Temporary heat for construction at isolated work areas.
  6. Temporary enclosures for its own construction activities.
  7. Hoisting requirements for its own construction activities.
  8. Each Prime Contractor is to stockpile his debris daily and place it in the dumpster(s). Dumpsters will be provided by the GC #1 contract for use by the prime contractors, recycling of materials will be instituted daily. All debris shall be broken down and/or flattened prior to placement in dumpsters, e.g. ductwork, casework. Recycling is encouraged. Waste disposal facilities, including collection and legal disposal of its own hazardous, dangerous, unsanitary, or other harmful waste materials will be by the Hazardous Material Abatement Contractor.
  9. Secure lockup of its own tools, materials, and equipment.
  10. Construction aids and miscellaneous services and facilities necessary exclusively for its own construction activities.
  11. Safety procedures as dictated by the district, OSHA, and the NYS Department of Labor.
  12. Labor for daily clean-up.
- G. State Contract Purchases/Co-Operative Purchases. This project includes systems, fixtures and equipment that will be purchased separately by the owner through the State Contract/Co-Operative Purchasing programs. Every effort has been made to identify and notate, on the Drawings and in the Project Manual, all systems, fixtures and equipment that will be purchased through these programs. All Prime Contractors are required to coordinate with these outside vendors/contractors. The scope of these co-operatively purchased/state contract purchases is listed below for your reference:
1. Lockers
  2. Casework and Music Storage
  3. Architectural Millwork
  4. Bleachers, Gym Equipment & Wall Pads, Scoreboards, Basketball Backboards and Winches.

- H. The Owner intends to procure Controls Work through a State Contract agreement. The buildings are currently controlled by a combination of original pneumatic controls, electric controls, standalone electronic controls, and a partial direct digital control (DDC) automation system. Final intent is to have essentially all control systems removed and replaced with a new single Electronic Digital Energy Management and Control System utilizing new components and programming as specified in section 23 09 23 and as shown on the drawings. The owner will purchase the control components and turn over to the Mechanical Contractor, who will be responsible for the installation, wiring, programming, and commissioning of all controls. Please note Division 23 – Section 23 09 23 Direct Digital Control System for HVAC is included in the Mechanical Contract and other Prime Contracts for coordination and ancillary work purposes only. The Mechanical Contractor is responsible for having a Temperature Controls Sub-Contractor who shall be a factory trained and authorized Invensys Controls Contractor (i.e. Stark “TBS Controls”). The Temperature Controls Sub-Contractor will have the following responsibilities:
1. Coordination with the Mechanical Contractor, Plumbing Contractor, and other Prime Contractors as required.
    - a. Furnish all components to be installed by other Prime Contractors in ample time to be installed within the construction schedule.
  2. Demolition, including removal and proper disposal of the following equipment and material:
    - a. Demolition of existing thermostats and the removal of the existing digital/pneumatic controllers, except electronic stand-alone controls for split air conditioning systems shown as existing to remain with new monitoring controls.
    - b. All control tubing associated with components being removed or already abandoned in equipment rooms and the existing ceiling spaces above corridors and occupied spaces.
    - c. The controls air compressors, driers, filters and miscellaneous equipment associated with the controls air supply system, including all power wiring of the compressors and driers back to the distribution power panel.
    - d. All existing temperature control panels including the contents, and legal disposal of same including mercury switches.
    - e. All existing pneumatic damper actuators.
    - f. All pneumatic and electric relays, enclosures and unused conduit and tubing.
    - g. Remove abandoned wiring, except existing wire mold may be left abandoned in place.
  3. New Work:
    - a. Provide controls complete as required for the mechanical work as specified and as shown on the drawings, except for ancillary work by the other Prime Contracts as described in this section and as described in section 23 09 23.
    - b. Division 23 – Section 23 09 23 Direct Digital Control Systems for HVAC along with all other referenced Division 23 technical sections, Divisions 26 and 27, and all referenced codes and standards, are part of this contract.

## 1.8 CONTRACT 1 - GENERAL CONSTRUCTION WORK-

- A. The Work of the General Construction Work Contract includes but is not limited to, the following descriptions:
1. Includes Architectural, Structural, Masonry, Roofing, Finishes, Blocking for Casework and Equipment, plus other construction operations traditionally recognized as General Work Construction. This includes, but is not limited to, *work shown* on the following:
    - a. Drawings:
      - 1) All “L” series Drawings (Civil)

- 2) All "S" series Drawings (Structural)
- 3) All "A, AS, AR, AD" series Drawings
- 4) All "FSE" series Drawings (Food Service)
- 2. Coordination:
  - a. Coordination with the work of all the other contractors.
  - b. General Work Contractor and Hazardous Materials Work Contractor are to pay particular attention to coordination of work at all tie in areas.
  - c. Coordinate with Window Work Contractor to create temporary entrances and loading areas as shown on the Phasing Plan.
- 3. Demolition:
  - a. Removal of masonry walls, doors, and interior partitions as required for new work. General work contractor is responsible for shoring, demolition and protection of areas associated with new work.
  - b. Removal of finishes noted on plans including but not limited to flooring, and misc. items. Review patch to match conditions at tie-ins and phase meetings.
  - c. Removal and disposal of miscellaneous equipment if impacting work to be demolished. Coordinate shutdown of water and / or electric with trades associated with the area of demolition. See demolition plans for additional demolition notes.
  - d. All cutting and patching necessary for work of this contract, including layout, sleeves, coring, debris removal, sawcuts of existing slabs, providing lintels, drywall work, plaster work, grouting, painting, ceiling replacement, etc.
- 4. Temporary Facilities
  - a. Provide temporary access and continuous exits in and out of all construction areas. Provide self-closing lockable closures at temporary access and loading points.
  - b. Provide dust protection.
  - c. Provide continuous exits for occupied areas of the building.
  - d. Provide Project Identification Sign
  - e. Provide protection at exterior wall and interior spaces when performing tie in work for new addition and any type of window wall replacements.
  - f. Provide all isolation barriers, temporary partitions, egress doors, and temporary egress parameters as shown. Restore all areas to original condition upon completion.
  - g. Provide and maintain insulated, weather-proof temporary closure panels at addition tie-in.
  - h. Provide approved fire extinguishers as per OSHA standards.
  - i. Provide Temporary Facilities indicated as Work of this Contract in Division 1 Section 01 50 00, "Temporary Facilities and Controls"
  - j. Provide and furnish Construction Manager's Field Office as per Section 01 5213, within TEN (10) days of the notice to proceed/contract award. Maintain as per Section 01 5213
- 5. New Construction:
  - a. Provide services of a licensed surveyor for building layout, elevation and as-built foundation location.
  - b. Work separation line between building and site is defined at 5' outside the building perimeter wall. The General Work Contractor #1, is responsible for all excavation, backfill, compaction and sub-base within the building addition footprint and to the line of separation. The General Work Contractor (Contract #1) is responsible for sub-base to the 5' line of separation. The Site Work Contractor (Contract #2) shall be responsible for all exterior concrete work.
  - c. Earthwork: All site earthwork, excavation, bedding, backfill, subbase, and base material, including dewatering as required for the installation of work of this

contract. Dewatering shall remain in place until directed to be removed by the Construction Manager. Include all helical pile as shown.

d. **STRUCTURE EXCAVATION AND BACKFILL:**

1)General: Excavations shall be in compliance with current OSHA regulations. Structure Excavation shall be made to the elevations, slopes and limits shown on the plans. Bottom of excavations shall be level and in firm, solid material; where soft or otherwise unsuitable material is encountered, such material shall be removed and replaced with properly compacted earth material, stone or flowable fill, as directed by the ARCHITECT / ARCHITECT AND CONSTRUCTION MANAGER. Topsoil and other excavated material suitable for fill or backfill shall be stockpiled on the site for future use. Excess material and unsuitable material shall be properly disposed of. Excavated areas shall be kept free of water during construction. Where necessary, excavations shall be protected by shoring, sheeting, cofferdams or other suitable methods. Wherever excavation for a foundation extends below the water table or where specifically indicated on the plans, a 12-inch layer (unless otherwise noted) of crushed stone or gravel shall be spread and compacted in the excavation bottom prior to placing the foundation. Crushed stone or gravel shall conform to ASTM C33, Size 57. A non-woven filter fabric, Mirafi 140N or equivalent shall be placed beneath the stone layer. An adequate dewatering system shall be provided at all structure excavations and elsewhere as directed by the ARCHITECT AND CONSTRUCTION MANAGER. The system shall be capable of removing any water that accumulates in the excavation and maintaining the excavation in a dry condition while construction is in progress. The surface of the ground shall be sloped away from the excavation or piping provided to prevent surface water from entering the excavation. Disposal of water resulting from the dewatering operation shall be done in a manner that does not interfere with normal drainage and does not cause damage to any portion of the work or adjacent property. All drains, culverts, storm sewers and inlets subject to the dewatering operation shall be kept clean and open for normal surface drainage. The dewatering system shall be maintained until backfilling is complete or as otherwise directed by the ARCHITECT AND CONSTRUCTION MANAGER. All damages resulting from the dewatering operation shall be repaired by the CONTRACTOR to the satisfaction of the ARCHITECT AND CONSTRUCTION MANAGER and at no cost to the OWNER.

- e. Provide shoring and bracing and excavation for all work related to new building, and all excavation for other contractors related to new building. Limit of excavation shall be within five (5) feet of building foundation.
- f. All required underpinning related to new building will be by the General Work Contractor (Contract #1).
- g. The General Construction Work Contractor (Contract #1) shall perform all necessary trenching and excavation, backfilling, and compaction and field required concrete for all other primes, within the building.
- h. All concrete foundations, footings, piers, walls, helical pile and interior slabs will be by this contract.
- i. All concrete masonry units, brick, precast-stone and masonry reinforcement will be by this contract, including masonry locker bases.
- j. Install miscellaneous metal fabrications furnished by other contractors but scheduled to be installed under the General Construction Contract as shown and/or specified in the contract documents. Reinforced roof penetrations and shear wall

penetrations are by General Construction Contract. Provide all openings in walls, floors, and roofs for all other Prime Contractors, including lintels, and structural framing. The other Primes are to provide the size and location of the openings prior to the work being built. All lintels and / or framing are to be sized in accordance with the lintel schedules and standard details within the contract documents. Installation is to be performed by a mechanic qualified and experienced with the materials and finishes being altered or installed. Submit to the Architect the name and qualification of the subcontractor performing the installation prior to starting the work.

- k. Provide all steel beams / columns and associated lintels at new openings as shown. Coordinate with mechanical trades.
- l. Provide steel beams and associated beam pockets/plates at corridors to support roof top units. Coordinate with mechanical trades.
- m. Provide access doors that are shown on Architectural drawings.
- n. Provide labor, material and equipment to install all exterior louvers that are furnished by the Mechanical Work Contractor. Install per details on "A" and "M" drawings, seal the perimeter with approved sealant per spec sections under 07 92 00.
- o. Provide repairs to masonry and concrete structures and openings. Patch to match exterior and interior finishes.
- p. Provide self-leveling underlayment where required to allow for acceptable flooring installation. Pay particular attention to abated floor areas and renovation of floors in general classroom areas.
- q. Provide rough and finish carpentry, including concealed blocking, locker bases and locker room benches, and windowsills.
- r. Provide display cases, visual display units, tack boards, whiteboards, tack strips etc.
- s. Provide thermal and moisture protection.
- t. Provide all interior/exterior doors, frames, borrowed lights/interior windows, security windows, and finishing for same. Provide glass and glazing on all doors, frames, borrowed lights, security windows etc. Provide miscellaneous steel required at new openings, coordinate with all prime contracts. Provide all builders hardware. Power for electrified hardware to be provided by the Electrical Contractor.
- u. Provide gypsum wallboard and finishing for same.
- v. Provide finishes including athletic flooring, tile flooring, resilient vinyl tile, carpeting, painting, suspended acoustical ceilings, and ceramic tile. Provide high performance coatings. Provide gymnasium flooring as shown. Contractor shall anticipate that all existing areas to receive new flooring shall require both light grinding and self-leveling underlayment. Provide additional flash-patching where old walls were removed.
- w. Provide all signage, fire-protection specialties, visual display boards, (as indicated).
- x. Provide operable panel partitions. Coordinate with Electrical Contractor.
- y. Provide building paper protection over finished product. Include maintenance of protection and removal of paper.
- z. Provide all roofing work for new additions. Roof blocking and plywood, including:
  - 1) Provide roof penetrations and blocking for mechanical equipment curbs. Roof drains are to be furnished by the Plumbing contractor and installed by the General Construction Contractor. Plumbing contractor to coordinate with General Construction Contractor.
  - 2) For cutting holes through new deck, the following shall apply:

- a) General Construction contractor shall cut and remove material.
  - b) All contractors requiring holes shall provide the necessary layout.
  - c) Temporary and final roofing and weather-tight protection for roof at new additions shall be by the General Construction Contractor.
  - d) See M and P drawings for extent of work.
  - aa. Include (furnish, and install, unless noted otherwise):
    - 1) Provide interior equipment and housekeeping pads.
    - 2) Include in base bid to furnish and install the following access doors beyond those already shown on drawings:
      - a) Four 18" x 18" fire-rated access doors for gypsum wallboard construction.
      - b) Four 18" x 18" fire-rated access doors for masonry construction.
      - c) Four 12" x 12" stainless steel access doors for masonry construction.
      - d) Four 8" x 8" non-rated, primed steel, trimless, access doors for gypsum wallboard construction.
  - 6. Provide multiple shift work as needed to complete work as shown on milestone schedule. Schedule shows a significant amount of work to be performed second shift.
  - 7. Provide for a very thorough cleaning of all building finishes (interior and exterior) immediately before final inspection.
    - a. Maintain areas in a cleaned condition until the Owner occupies the space.
    - b. Personnel: Experienced workman or professional cleaners approved by the Construction Manager.
    - c. Areas where new floor tile is installed are to be finished with three coats of wax.
  - 8. General Requirements, including but not limited to, additional items specifically indicated as the Work of this Contract.
- B. The Work of the General Construction Contract includes but is not limited to the Work that is specified in the Project Manual(s) and as shown on the drawings that form the contract plans. The Contractor is directed to examine all drawings since certain details and/or notes may appear anywhere therein that apply to his/her particular work. This prime contract is defined as, and includes, all Sections in the Divisions indicated by reference, and specific Sections noted:
- 1. Division 0 – Procurement and Contracting Requirement, all Sections.
  - 2. Division 1 –General Requirements, all Sections, including Temporary Facilities indicated.
  - 3. Division 2 – Selective Structure Demolition
  - 4. Division 3 – Concrete, all Sections.
  - 5. Division 4 – Masonry, all Sections.
  - 6. Division 5 – Metals, all Sections.
  - 7. Division 6 – Woods, Plastics and Composites, all Sections.
  - 8. Division 7 –Thermal and Moisture Protection, all Sections except as noted in other Contracts.
  - 9. Division 8 – Openings, all Sections as pertains to the work of this contract
  - 10. Division 9 – Finishes, all Sections.
  - 11. Division 10 – Specialties, all Sections ***except for Site Signage and Flagpoles.***
  - 12. Division 11 – Equipment, all Sections
  - 13. Division 12 – Furnishings, all Sections.
  - 14. Division 14 – Conveying Equipment, all Sections
  - 15. Division 31- Earthwork, all sections except as noted in other contracts

## 1.9 CONTRACT 2 – SITE CONSTRUCTION WORK

- A. The Work of the Site Construction Work Contract includes but is not limited to, the following descriptions:
1. Includes Landscaping, Site Grading, Site Storm, Site Utilities, Site Pavement plus other construction operations traditionally recognized as Site Work Construction. This includes, but is not limited to work shown on the following:
    - a. Drawings:
      - 1) All “L” series Drawings (Civil)
      - 2) All “A” series Drawings (Architectural)
      - 3) All “S” series Drawings (Structural)
  2. Coordination:
    - a. Coordination with the work of all the other contractors.
  3. Demolition:
    - a. Removal of any existing curbing, roadways, bituminous paving, and walks.
    - b. Removal and relocation of trees, shrubs, and ground cover.
    - c. Removal of all underground utilities and/or equipment as shown or described.
    - d. Removal and disposal of fences, railings and other miscellaneous equipment including equipment not shown if impacting work to be demolished.
    - e. Removal of existing 10,00-gallon Fuel Oil tank and site remediation as shown on the drawings.
    - f. CLEARING AND GRUBBING:
      - 1) General: The CONTRACTOR shall consult with the OWNER and ARCHITECT AND CONSTRUCTION MANAGER prior to beginning clearing, and a full understanding is to be reached as to procedure that best meets the contract documents intent. The CONTRACTOR shall then conduct clearing and grubbing operations in strict accordance with these agreements. The CONTRACTOR’S operations shall be conducted with full consideration of all proper and legal rights of the OWNER, adjacent property OWNER’S and the public, and with the least possible amount of inconvenience to them.
      - 2) Construction Site: The work shall consist of clearing and grubbing within the limits of construction sites, road rights-of-way and elsewhere as indicated or necessary to complete the work, except pipelines. All trees, stumps, roots, shrubs and brush shall be removed as required for construction. Stumps and roots shall be grubbed and completely removed. The resulting depressions shall be filled with suitable material placed and compacted. Sound trees and shrubs, which do not interfere with construction, shall remain in place as marked and shall be adequately protected from damage. Cleared and grubbed material, including debris and rubbish, shall be completely disposed of off-site.
      - 3) Structures: Minor structures shall be removed and disposed of as directed by the ARCHITECT AND CONSTRUCTION MANAGER.
      - 4) Burning: Burning of Cleared Material is not allowed within the site limits.
    - g. Sawcut existing pavements and excavate to facilitate new work, patch pavement with asphalt paving.
  4. Temporary Facilities
    - a. Provide dust protection and temporary site fencing as shown on logistics plan. The temporary fencing line will be moved as per the logistics plan. Provide the proper gates as described/shown. Provide temporary signage as per Section 01 5000.

- b. Provide all construction signage as per Section 01 500 00 Temporary Facilities & Controls. Coordinate installation locations with construction manager.
  - c. Provide temporary roads/access and continuous exits in and out of the construction area as shown. Provide work as shown on the phasing and logistics plan. Provide and maintain asphalt binder and temporary striping at parking lots until final paving is completed.
  - d. Provide all necessary erosion / waste-water control measures specific to the site construction process.
  - e. Provide tracking pads and wash out area for construction vehicles onto East Main Street. Washout pits to be located by the Construction Manager.
  - f. Provide snow removal for contractor staging areas.
  - g. Provide temporary flagpole throughout the project. Existing flagpole may be used, coordinate location with construction manager.
  - h. Provide Temporary Facilities indicated as Work of this Contract in Division 1 Section 01500, "Temporary Facilities and Controls"
5. New Construction:
- a. Work separation line between building and site is defined at 5' outside the building perimeter wall. The Site Contractor is responsible for all grade work outside the 5' line of separation **and all final grade work within the line of separation**. The General Work Contractor is responsible for building excavation, backfill and slab sub-base and sub-grade, to the line of separation. The Site Contractor (Contract #2) shall be responsible for the construction of all exterior concrete work. The Site Work Contractor is responsible for all sidewalks, steps, aprons, curbs, pads, and concrete ramps, as shown on the documents. Any exterior doorway not furnished with sidewalks shall be provided with a concrete pad 5'-0" x 5'-0" for a single door and 10'-0" x 5'-0" for a pair of doors, installed by the Site Contractor (Contract #2)
  - b. Provide shoring, bracing, excavation and backfill for all other prime contractors from five (5) feet outside building foundation.
  - c. Earthwork shall consist of all necessary site clearing and grubbing, excavation and backfill to establish new building footprint and associated grade for structures. Provide site grading, grassing and restoration, as well as related work as shown on the plans and as specified herein.
    - 1) GENERAL: All earthwork shall be confined to the construction area as shown on the plans and shall be done in an approved manner with proper equipment. Earthwork shall be suspended during rain and inclement weather, or when unsatisfactory field conditions are encountered, unless otherwise directed by the ARCHITECT AND CONSTRUCTION MANAGER. At all times during construction, the CONTRACTOR shall maintain proper drainage in the construction area and shall take all measures necessary for erosion and sediment control.
    - 2) Existing Utilities: CONTRACTOR shall take every precaution to protect existing utility services from damage during construction operations. If damage occurs, the OWNER of the utility shall be notified immediately, and repairs shall be made promptly at the CONTRACTOR'S expense. All repair work shall be satisfactory to the ARCHITECT AND CONSTRUCTION MANAGER and the OWNER of the utility. When interruptions of existing utilities occur, temporary service shall be provided as approved by the ARCHITECT AND CONSTRUCTION MANAGER and OWNER of the utility.
  - d. SITE GRADING:



- 1) Site grading shall conform to the lines and grades indicated by the finish contours on the plans. Where topsoil, pavement, aggregate surfacing, and other items are shown, rough grade shall be finished to such depth below finish grade as necessary to accommodate these items. All areas where structures are to be built on fill shall be stripped to such depth as necessary to remove turf, roots, organic matter and other objectionable materials. Excavation: Excavation shall be made to the exact elevations, slopes, and limits shown on the plans.
- 2) Fill: Fill shall not contain organic material, debris, or rock larger than 6 inches in any dimension. Where fill is to be placed all existing vegetation, roots and other organic matter down to 12 inches below grade shall be stripped and disposed of as directed. Fill shall be placed in successive layers of not more than 8 inches loose thickness. Each layer shall be spread evenly and compacted as specified below before the next layer is placed. Rock shall not be incorporated in fill sections supporting pavement or structures. Rock shall be evenly distributed. Rock larger than 4 inches in any dimension will not be allowed in the top 12 inches of fills or slopes. Voids between rock materials shall be well filled with suitable fill material, and all rock shall be covered with at least 6 inches of fill material. Where natural slopes exceed 3:1, horizontal benches shall be cut to receive fill material. Slopes of less than 3:1 and other areas shall be scarified prior to placing fill. Borrow material, as required, shall be obtained from the work site or other acceptable source, at the CONTRACTOR'S expense.
- 3) Compaction: Unless otherwise noted, each layer of fill and backfill and the top 12 inches of existing sub grade material in cuts shall be compacted by approved equipment as specified below. The degree of compaction and the density shall be determined by the Standard Proctor test (ASTM D698) or by the Modified Proctor test (ASTM D1557, Method A). Material too dry for proper compaction shall be moistened by suitable watering devices, turned and harrowed to distribute moisture, and then properly compacted. When material is too wet for proper compaction, operations shall stop until such material has sufficiently dried. All compaction tests, including additional tests required due to failure of materials and work to conform to the specified requirements, shall be done at the CONTRACTOR'S expense. Compaction tests shall be conducted by an independent testing agency as provided by the district. The CONTRACTOR shall be responsible for correcting all deficiencies in the work at his expense. Compaction testing shall continue until test results are satisfactory to the ARCHITECT AND CONSTRUCTION MANAGER. Tests shall be made in randomly selected locations as follows:
  - a) Material Frequency
  - b) Fill and backfill 1 per layer (lift) per 1000 sq. ft.
  - c) Sub grade (cuts) 1 per layer (lift) per 2500 sq. ft.
  - d) Road Crossings 1 per layer
- 4) Dressing Off: All cuts, fills and slopes shall be neatly dressed off to the required grade or subgrade, as indicated on the plans.
- 5) Cleanup: Cleanup of the site shall be made upon completion of grading work or any major part thereof. Unless otherwise noted, excess or surplus material shall be wasted and dressed off on the site, or adjacent thereto, to the ARCHITECT AND CONSTRUCTION MANAGER'S satisfaction. Excess or surplus material wasted in off-site spoil areas shall be spread and leveled as directed.

- 6) Topsoil Placement: Topsoil shall consist of a natural friable loam, occurring usually in a surface layer 6 to 18 inches thick, and free of roots, grass, weeds, stone and other foreign matter. Topsoil may be obtained from the graded area, if available, and stockpiled for future use. Otherwise, the CONTRACTOR shall provide topsoil from other sources at his own expense. All topsoil shall be acceptable to the ARCHITECT AND CONSTRUCTION MANAGER. Topsoil shall be placed on the entire graded area as shown on the plans, or as directed by the ARCHITECT AND CONSTRUCTION MANAGER. Topsoil shall be distributed to a depth of 4 inches, measured loose, and dressed off neatly to finish grade, with all debris removed.
- e. Provide underground utilities. This includes new water lines, storm systems, and sewer lines. Provide excavation, backfill, compaction, and concrete for underground electrical and gas services.
  - f. Provide sand filters and underground pipe detention systems.
  - g. Provide concrete paving, landscaping, site appurtenances and curbing. Provide all concrete and masonry associated to site work. Provide site segmented retaining walls and industrial fencing.
  - h. Provide driveway, parking lot paving and drainage.
  - i. Provide concrete light pole bases for Electrical contractor. Provide excavation, backfill, and compaction for all site lighting/cameras. Coordinate installation with Electrical Contractor.
  - j. Provide all site signage "except" for the exterior building sign, this will be provided by the General Work Contractor.
  - k. Provide flagpole.
  - l. Contractor shall obtain and pay for any permits, inspections, or certifications from governing authorities having jurisdiction over the work to be performed, or over the finished product to be installed by this Contractor. Project Building Permit is by others.
- B. NYSDOT Highway Work Permit(s):
- 1. Site Construction Contractor responsible for:
    - a. Completion of all required applications,
    - b. Make application for the required NYSDOT Permits,
    - c. Payment of all application fees and other associated costs,
    - d. Provide all insurance associated with the NYSDOT Permit Requirements
    - e. All relevant work within the NYSDOT Right-of-Ways associated with the proposed improvements.
  - 2. Insurance Forms Required for NYSDOT Highway Work Permits or as required:
    - a. Accord 25 – CGL – Min \$1,000,000 per claim / occurrence
    - b. Accord 855
    - c. Workers Comp – C105.2, U-26.3, SI-12 or CE-200 exempt
    - d. Disability – DB120.1, DB-155 or CE-200 exempt
  - 3. Form PERM 33 – Highway Work Permit Application for Non-Utility Work.
  - 4. Form PERM 44 – Surety Bond (Performance) For the benefit of The New York State Department of Transportation.
  - 5. Technical Plan approval.
- C. The Work of the Site Construction Contract includes but is not limited to the Work that is specified in the Project Manual(s) and as shown on the drawings that form the contract plans. The Contractor is directed to examine all drawings since certain details and/or notes may appear anywhere therein that apply to his/her particular work. This prime contract is defined as, and includes, all Sections in the Divisions indicated by reference, and specific Sections noted:
- 1. Division 1 –General Requirements, all Sections, including Temporary Facilities indicated.

2. Division 3 Section 03 30 00" Cast-in Place Concrete" *as applicable to work of this contract*
3. Division 10 – Specialties – Section 10 14 53 Site Signage and Section 10 75 00 Flagpoles.
4. Division 31 – Earth Work - all Sections.
5. Division 32 – Exterior Improvements - all Sections
6. Division 33 – Utilities - all Sections
7. The Site Work Contract #2 is responsible for installation of and maintenance of all Temporary Erosion and Sediment Control measure for the duration of the project as specified in, "Erosion and Sediment Control". ***Milestone schedule is to be reviewed as there will be the need for the Site Contractor to provide multiple phased visits for work as needed to complete work according to the milestone schedule.***

#### **1.10 CONTRACT 3 - HEATING, VENTILATING, & AIR CONDITIONING WORK CONTRACT**

- A. Work of this Contract includes, but is not limited to, the following descriptions:
1. Includes HVAC Equipment, Piping, ductwork, control systems, plus other construction operations traditionally recognized as heating, ventilating and cooling work. This includes, but is not limited to, all work shown on the "M & MD" drawings, and applicable information shown on the A & S drawings, unless noted otherwise. It also includes Administrative and coordination responsibilities.
  2. Coordination:
    - a. Coordination with the work of all the other contractors.
  3. Demolition
    - a. Provide phased demolition of all HVAC equipment and piping as shown and as required at the existing building. Remove items to the point of attachment to the plaster
    - b. Provide demolition of all unit ventilators, provide temporary protection for openings.
    - c. Removal of items as shown and/or required. Remove items to the point of attachment to the plaster walls, cut straps or other carriers and remove items, leave attachment in place.
    - d. Remove and properly dispose of control valves and valve actuators shown to be removed.
    - e. Remove and properly dispose of air dampers and actuators shown to be removed.
    - f. All cutting and patching necessary for work of this contract, including layout, sleeves, coring, debris removal, sawcuts, lintels (furnish and install), drywall work, plaster work, grouting, painting, ceiling removal and replacement, etc.
  4. Temporary Facilities
    - a. Provide Temporary Facilities indicated as Work of this Contract in Division 1 Section 01 50 00, "Temporary Facilities and Controls"
  5. Construction:
    - a. **In existing construction**, each Prime Contractor is to provide their own rough opening in walls, and floors including lintels and any required structural framing for penetrations as part of their own Prime Contract. All lintels and / or framing are to be sized in accordance with the lintel schedules and standard details within the contract documents unless specifically shown to be under the General Construction Contract. Installation is to be performed by a mechanic qualified and experienced with the materials and finishes being altered or installed. Submit to the Construction Manager the name and qualification of the subcontractor performing the installation prior to starting the work.

- b. Install all controls components into air and hydronic systems as required maintaining the integrity of the system:
  - 1) Install motor actuated dampers.
  - 2) Install airflow measuring stations.
  - 3) Install airside temperature and pressure sensors.
  - 4) Install hydronic control valves.
  - 5) Install hydronic temperature and pressure sensor wells
  - 6) Provide TAB and participate in commissioning work of the EMCS as required for controls of the work of this contract.
- c. Provide new Boilers and Condensing Units.
- d. Provide Hydronic and refrigerant piping and pumps
- e. Provide and install new exhaust fans and ductwork as shown.
- f. Provide unit heaters and humidifiers
- g. Provide Air Handling Units and Roof top units
- h. Provide split system air conditioning unit
- i. Provide water source Heat Pumps and / or VAV's
- j. Provide Fan Coil Units
- k. Supply exterior louvers for installation by the General Construction Work Contractor, including louvers for the existing building.
- l. Provide and install new unit heaters, piping controls.
- m. Provide and install ducting for other Contractor provided hoods.
- n. Provide contractor filters, final replacement filters and final duct cleaning.
- o. Provide and install all insulation, painting and labeling of new and modified piping, ductwork, and equipment.
- p. Provide all testing, adjusting, and balancing of all new and existing modified HVAC systems.
- q. All fees required for inspections and permits.
- r. Provide support framing for HVAC equipment, ie mechanical equipment curbs.
- s. Furnish access doors for HVAC access (to be installed by GC)
- t. Provide firestopping and sealing at all HVAC penetrations
- u. Furnish motor controllers/disconnects to Electrical Contract for installation and wiring.
- v. Provide the necessary layout for all roofing penetrations to the General Work Contractor and Roofing Renovation Contractor. Provide curbs for mechanical equipment.
- w. Venting and roof mounted exhaust fans for fume hoods by Mechanical Contractor
- x. Provide owner training / commissioning of equipment.
- 6. General Requirements, including but not limited to, additional items specifically indicated as the Work of this Contract.
- 7. Provide multiple work shifts as needed to complete work as shown on milestone schedule. Schedule shows a significant amount of work to be performed second shift. ***"Two Work Shifts" will be required to perform the scheduled work.***

- B. The Work of the HVAC Work Contract includes but is not limited to the Work that is specified in the Project Manual(s) and as shown on the drawings that form the contract plans. The Contractor is directed to examine all drawings since certain details and/or notes may appear anywhere therein that apply to his/her particular work. This prime contract is defined as, and includes, all Sections in the Divisions indicated by reference, and specific Sections noted:
- 1. Division 0 –Procurement and Contracting Requirement, all Sections.
  - 2. Division 1 –General Requirements all Sections, including Temporary Facilities indicated
  - 3. Section 07 84 00, Firestopping Systems, as required for the Work of this Contract
  - 4. Section 07 90 05, Joint Sealers, as required for the Work of this Contract

5. Division 23 – HVAC, all Sections.
  - a. ***Section 23 09 23 – Direct Digital Control System for HVAC, is included in the HVAC Contract but for coordination and ancillary work purposes only. Coordinate with the Controls Contractor during all demolition and new work. Provide ancillary controls work as stated. Refer to Paragraph 1.7, G also.***

#### 1.11 4 - ELECTRICAL WORK CONTRACT

- A. Work of this Contract includes, but is not limited to, the following descriptions:
  1. Includes Electrical Distribution Service, Lighting, CATV systems, Communications, Fire Alarm, Intercom Systems, Security Systems, Emergency Lighting, and other systems traditionally recognized as Electrical work. This includes but is not limited to, all work shown on the “E & ED” Drawings, and applicable information shown on the “A” and “S” Drawings, unless noted otherwise. It also includes administrative and coordination responsibilities.
  2. Coordination:
    - a. Coordination with the work of all the other contractors.
    - b. Coordination with the work of all outside vendors.
    - c. Coordinate with HazMat Contractor to hook-up and remove temporary panels.
  3. Demolition:
    - a. Removal of items as shown and/or required. Remove items to the point of attachment to the plaster walls, cut straps or other carriers and remove items, leave attachment in place. Coordinate shutoffs with General Contractor during demolition.
    - b.
    - c. Removal and disconnections of electrical devices in walls, ceilings and floors scheduled to be removed in the portion of the building to remain.
    - d. Removal of lighting fixtures not removed as ACM.
    - e. Coordinate with all Contractors for necessary shutdowns, provide temporary power as required.
    - f. Removal of exterior lighting fixtures and wiring.
    - g. Removal of existing unit ventilators power back to panel.
    - h. All cutting and patching necessary for work of this contract, including layout, sleeves, coring, debris removal, sawcuts, lintels (furnish and install), drywall work, plaster work, grouting, painting, ceiling removal and replacement, etc.
  4. Temporary Facilities
    - a. Provide Temporary Facilities indicated as Work of this Contract in Division 1 Section 01 50 00, “Temporary Facilities and Controls”
    - b. Provide temporary power and lights as per the Project Manual
    - c. Provide power for the Hazardous Materials Contractors sub-panels, connection & disconnection. Coordinate with HazMat Contractor.
  5. Construction:
    - a. **In existing construction**, each Prime Contractor is to provide their own rough opening in walls, and floors including lintels and any required structural framing for penetrations as part of their own Prime Contract. All lintels and / or framing are to be sized in accordance with the lintel schedules and standard details within the contract documents unless specifically shown to be under the General Construction Contract. Installation is to be performed by a mechanic qualified and experienced with the materials and finishes being altered or installed. Submit to the Construction Manager the name and qualification of the subcontractor performing the installation prior to starting the work.

- b. The General Construction Work Contract shall perform all necessary trenching and excavation, backfilling, and compaction and field required concrete for all other primes.
  - c. Provide ALL wiring to ALL HVAC equipment. (Install motor controllers/disconnects supplied by HVAC Contract)
  - d. Provide power to all ADA hardware and electric hardware shown in door hardware schedule. Provide control wiring and connection for electrified door hardware
  - e. Provide all interior and exterior lighting including lighting control.
  - f. Provide all fire alarms, CATV, and networking systems.
  - g. Provide public address systems, including full installation and training.
  - h. Provide all cutting and patching required installing all electrical fixtures, devices, wire and conduit.
  - i. Provide all fees required for inspections and permits.
  - j. Provide support framing for Electrical equipment and conduits.
  - k. Furnish access doors for electrical access (to be installed by GC)
  - l. Provide firestopping and sealing of all electrical penetrations
  - m. Provide owner training
  - n. Provide telecommunications
  - o. Provide and maintain a temporary electric service, including lighting and power, for the site office trailers off the temporary service being provided above. Maximum of 1 trailer per Prime Contractor. Each trailer to have a 100 amp, 240 Volt single-phase connections. Assume a diversified peak connected load factor of 12KW per trailer. For the Construction Manager's Office Trailer see Section 01 5213.
- 6. General Requirements, including but not limited to, additional items specifically indicated as the Work of this Contract.
  - 7. Provide multiple shift work as needed to complete work as shown on milestone schedule. Schedule shows a significant amount of work to be performed second shift. ***"Two Work Shifts" will be required to perform the scheduled work.***
- B. The Work of the Electrical Work Contract includes but is not limited to the Work that is specified in the Project Manual(s) and as shown on the drawings that form the contract plans. The Contractor is directed to examine all drawings since certain details and/or notes may appear anywhere therein that apply to his/her particular work. This prime contract is defined as, and includes, all Sections in the Divisions indicated by reference, and specific Sections noted:
- 1. Division 0 –Procurement and Contracting Requirement, all Sections.
  - 2. Division 1 –General Requirements all Sections, including Temporary Facilities indicated
  - 3. Division 7- Thermal and Moisture Protection, Section 07 84 00, Firestopping Systems, and Section 07 90 05, Joint Sealers, as required for the Work of this Contract
  - 4. Division 11 - All sections as relates to this contract for power connections to equipment.
  - 5. Division 12 – All sections as relates to this contract for power connections to equipment.
  - 6. Division 14- All sections as relates to this contract for power connections to equipment.
  - 7. Division 21 - All sections as relates to this contract for power connections to equipment.
  - 8. Division 22 - All sections as relates to this contract for power connections to equipment.
  - 9. Division 23 - All sections as relates to this contract for power connections to equipment.
  - 10. Division 26 - Electrical - All Sections.
  - 11. Division 27 - Communications - All Sections.
  - 12. Division 28 – Electronic Safety and Security - All Sections.

## 1.12 CONTRACT 5 - PLUMBING WORK CONTRACT

- A. The Work of the Plumbing Work Contract includes but is not limited to, the following descriptions:
1. Drawings:
    - a. All “P & PD” series Drawings (General)
    - b. All “L” series Drawings (as it relates to plumbing work)
    - c. All “AS, AR, AD, A, ” series Drawings (as it relates to plumbing work)
    - d. All “FSE” series Drawings (as it relates to plumbing work)
  2. Coordination:
    - a. Coordination with the work of all the other contractors.
  3. Demolition:
    - a. Removal of items as shown and/or required. Remove items to the point of attachment to the plaster walls, cut straps or other carriers and remove items, leave attachment in place. Coordinate shutoffs with General Contractor during demolition.
    - b. All cutting and patching necessary for work of this contract, including layout, sleeves, coring, debris removal, sawcuts, lintels (furnish and install), drywall work, plaster work, grouting, painting, ceiling removal and replacement, etc. All excavation work required for this contract is by this contract, except in the new addition footprint.
  4. Temporary Facilities
    - a. Provide Temporary Facilities indicated as Work of this Contract in Division 1 Section 01 50 00, “Temporary Facilities and Controls” including temporary toilet facilities.
    - b. Provide temporary portable chemical toilets for all construction personnel, as per OSHA standards. Provide toilet facilities at the construction manager’s office as per Section 01 5213 Field Offices.
  5. Construction:
    - a. **In existing construction**, each Prime Contractor is to provide their own rough opening in walls, and floors, including lintels and any required structural framing for penetrations as part of their own Prime Contract. All lintels and / or framing are to be sized in accordance with the lintel schedules and standard details within the contract documents unless specifically shown to be under the General Construction Contract. Installation is to be performed by a mechanic qualified and experienced with the materials and finishes being altered or installed. Submit to the Construction Manager the name and qualification of the subcontractor performing the installation prior to starting the work.
    - b. The General Construction Work Contract shall perform all necessary trenching and excavation, backfilling, and compaction and field required concrete for all other primes.
    - c. Provide water, gas, vacuum, and acid waste lines and connect to all fixtures provided under the Casework and Lab Equipment contract at the science classrooms.
    - d. Provide water distribution pumps, meters and gauges as needed.
    - e. Provide all insulation, painting and labeling of new plumbing piping.
    - f. Provide all hot and cold-water piping to other Contractor provided sinks, faucets and appliances. Make all final connections.
    - g. Provide all testing, balancing and disinfection of all new and modified plumbing systems.
    - h. All fees required for inspections and permits.
    - i. Provide support framing for plumbing equipment.
    - j. Furnish access doors for plumbing access (to be installed by GC)
    - k. Provide firestopping and sealing at all plumbing penetrations.

6. General Requirements, including but not limited to, additional items specifically indicated as the Work of this Contract.
  7. Provide multiple shift work as needed to complete work as shown on milestone schedule. Schedule shows a significant amount of work to be performed second shift. ***“Two Work Shifts” will be required to perform the scheduled work.***
- B. The Work of the Plumbing Work Contract includes but is not limited to the Work that is specified in the Project Manual(s) and as shown on the drawings that form the contract plans. The Contractor is directed to examine all drawings since certain details and/or notes may appear anywhere therein that apply to his/her particular work. This prime contract is defined as, and includes, all Sections in the Divisions indicated by reference, and specific Sections noted:
1. Division 0 – Procurement and Contracting Requirement, all Sections.
  2. Division 1 –General Requirements all Sections, including Temporary Facilities indicated
  3. Division 7- Thermal and Moisture Protection, Section 07 84 00, Firestopping Systems, Section 07 90 05, Joint Sealers, as required for the Work of this Contract
  4. Division 22 -All sections

### 1.13 CONTRACT 6 - HAZARDOUS MATERIAL ABATEMENT CONTRACT

- A. Work of this Contract includes, but is not limited to, the following descriptions:
1. Includes Hazardous Materials abatement/removal plus other construction operations traditionally recognized as Hazardous Materials Construction. This includes, but is not limited to, *all work shown* on the “AA” Drawings, and any applicable information shown on all other drawings. It also includes administrative and coordination responsibilities.
  2. Drawings:
    - a. All “AA” series Drawings (Hazardous Materials)
  3. Coordination:
    - a. Coordination with the work of all the other contractors.
    - b. Coordinate with Electrical Contractor to hook-up and remove temporary panels.
  4. Demolition:
    - a. Asbestos containing material removal as shown in the contract documents and disposal per Code Rule 56.
    - b. Remove windows indicated on the drawings as asbestos abatement.
    - c. Remove all plaster, adhesive, caulk, VAT, TSI, blackboards, mirrors, gaskets and membranes as shown in the documents. Remove interior wythe of brick and mastic at all new exterior wall openings.
    - d. Remove interior wythe of brick at new openings, as asbestos containing material.
    - e. Provide abatement of all identified Lead Based Paint as shown in the contract documents.
  5. Temporary Facilities
    - a. Provide Temporary Facilities indicated as Work of this Contract in Division 1 Section 01 50 00, “Temporary Facilities and Controls”
    - b. Provide temporary shoring at new openings.
    - c. Construction of all hard barriers separating abatement area from other areas.
  6. Construction:
    - a. Provide temporary weather tight and secure closure panels at building openings.
  7. General Requirements, including but not limited to, additional items specifically indicated as the Work of this Contract.
  8. Provide multiple shift work to complete work as shown on milestone schedule. Schedule shows a significant amount of work to be performed second shift. No Hazardous Materials Work will be performed during the school year. ***“Two Work Shifts” are required to perform the scheduled work.***



- B. The Work of the Hazardous Material Abatement Work Contract includes, but is not limited to, the Work that is specified in the Project Manual(s) and as shown on the drawings that form the contract plans. The Contractor is directed to examine all drawings since certain details and/or notes may appear anywhere therein that apply to his/her particular work. This prime contract is defined as, and includes the following listed sections:
1. Division 0 –Procurement and Contracting Requirement, all Sections.
  2. Division 1 –General Requirements all Sections, including Temporary Facilities indicated
  3. Division 2- Existing Conditions, as relates to this contract for the removal of hazardous materials)
  4. Division 7- Thermal and Moisture Protection as required for the Work of this Contract. Particularly 07 84 00Firestopping and 07 90 05 Joint Sealers

#### **1.14 CONTRACT 7- FOOD SERVICES EQUIPMENT**

- A. The Work of the Food Services Equipment Contract includes, but is not limited to the following descriptions:
1. Includes all Food Service Storage, Preparing, Cooking, and Serving equipment indicated plus connection to utilities. This includes, but is not limited to all work shown on the FSE drawings, and any applicable information shown on the “A, P, E, M & FSE” drawings. It also includes Administrative and coordination responsibilities.
  2. Coordination:
    - a. Coordination with the work of all the other contractors.
  3. Demolition:
    - a. All cutting and patching necessary for work of this contract, including layout, sleeves, coring, debris removal, sawcuts, lintels (furnish & install), drywall work, plaster work, tile work, grouting, painting, ceiling removal and replacement, etc.
    - b. Removal of all existing food service equipment as indicated on the drawings.
  4. Temporary Facilities:
    - a. Provide Temporary Facilities indicated as Work of this Contract in Division 1 Section 01 50 00 “Temporary Facilities and Controls”.
  5. Construction:
    - a. Provide all new Food Service Equipment as mentioned in the specifications and/or shown in the drawings. Coordinate with other prime contracts for locations, requirements, and connections.
    - b. Furnish and install all coolers, refrigerators, freezers, mixers, stoves, ovens, steamers, kettles, dishwashers, warming units, as specified on the design documents. Include all electrical service fittings, water, and gas attachment hardware. Coordinate with Mechanical Plumbing and Electrical Contractors as required.
    - c. Furnish and install all tables, islands, storage equipment, carts, shelving units, solid top units and worktables as shown in the documents.
    - d. Provide and install new fire suppression system, as per the documents
    - e. Provide and install new remote evaporator coils and refrigerant piping between coils and Cooler/Freezers and required Cat 6 cabling from condensing units to supplied switch.
- B. The Work of the Food Service Equipment Contract includes, but is not limited to, the Work that is specified in the Project Manual(s) and as shown on the drawings that form the contract plans. The Contractor is directed to examine all drawings since certain details and/or notes may appear anywhere therein that apply to his/her particular work. This prime contract is defined as, and includes the following listed sections:

1. Division 0 –Procurement and Contracting Requirement, all Sections.
2. Division 1 –General Requirements all Sections
3. Division 2- Existing Conditions, as relates to this contract for the removal of existing kitchen equipment.
4. Division 11- Specialties as relates to the work of this contract

#### 1.15 CONTRACT 8- FIRE SUPPRESSION

- A. The work of this contract includes but is not limited to the following descriptions;
1. All equipment, piping, valves, meters, pumps, and alarms traditionally recognized as Fire Suppression work. This includes, but is not limited to the work shown on the FSE drawings
  2. Coordination:
    - a. Coordinate with the work of all other contractors.
    - b. Coordinate shut offs with the General Construction contractor prior to demolition.
  3. Demolition:
    - a. Remove all existing sprinkler heads, piping and appurtenances as per the Phasing Plan.
    - b. Removal and disposal of miscellaneous equipment, including equipment not shown, if impacting work to be demolished.
  4. Temporary Facilities
    - a. Provide continuous fire suppression using the existing system.
    - b. Provide “Fire Watch” when existing system is offline. Provide temporary fire protection throughout the project.
    - c. Provide Temporary Facilities indicated as Work of this contract in Division 1 Section 01 50 00 “Temporary Facilities and Controls”
  5. Construction
    - a. **In existing construction**, each Prime contractor is to provide their own rough openings in walls and floors, including lintels and any structural framing for penetrations as part of their own Prime Contract. All lintels and/or framing are to be sized in accordance with the lintel schedules and standard details within the contract documents unless specifically shown to be under the the General Construction Contract. Installation is to be performed by a mechanic qualified and experienced with the materials and finishes being altered or installed. Submit tom the Construction Manager the name and qualification of the subcontractor performing the installation prior to starting the work.
    - b. Provide all sprinkler heads, trims, piping, valves, alarms, meters, backflow preventers, pumps and other system parts as needed
    - c. Provide all labeling, signs and identification tags
    - d. Provide all flushing and system testing as required
    - e. Include any fees required for inspections and permits.
    - f. Provide firestopping and sealing at all sprinkler system penetrations.
  6. General Requirements, including but not limited to, additional items specifically indicated as the Work of this Contract

7. Provide multiple shift work as needed to complete work as shown on milestone schedule. Schedule shows a significant amount of work to be performed second shift. ***“Two work Shifts” will be required to perform the scheduled work.***
- B. The Work of the Fire Suppression Work Contract includes but is not limited to the Work that is specified in the Project Manual(s) and as shown on the drawings that form the contract plans. The Contractor is directed to examine all drawings since certain details and/or notes may appear anywhere therein that apply to his/her particular work. This prime contract is defined as, and includes all Sections in the Divisions indicated by reference, and specific Sections noted:
  1. Division 0- Procurement and Contracting Requirements, all section
  2. Division 1- General Requirements, all sections, including Temporary Facilities indicated.
  3. Division 7- Joint Sealants, Section 07 84 00, Firestopping Systems as required for the work of this contract
  4. Division 21- Fire Suppression, all sections
  5. Division 22- Plumbing as required for the work of this contract.

#### 1.16 CONTRACT 9 – WINDOW CONSTRUCTIONWORK:

- A. The Work of the Window Contract includes but is not limited to, the following descriptions:
  1. Includes Architectural, Structural, Masonry, plus other construction operations traditionally recognized as Window Construction Work. This includes, but is not limited to, ***new and existing window replacement, new translucent panels, and all hazardous material abatement work shown relative to this work*** on the following:
    - a. Drawings:
      - 1) All “A500” series Drawings that pertain to the work of this contract.
      - 2) All A800 series Drawings that pertain to the work of this contract.
      - 3) “AA” series Drawings that pertain to the work of this contract.
  2. Coordination:
    - a. Coordination with the work of all the other contractors.
    - b. Coordinate with GC Contract 1, to provide window openings for personnel entry and loading building materials.
  3. Demolition:
    - a. Remove all existing aluminum windows including all associated abatement of ACM panels. Remove all existing steel windows as ACM due to the plaster returns. Asbestos containing material removal and disposal will be per Code Rule 56.
    - b. Provide openings for new windows as per the drawings and contract documents.
    - c. Removal and disposal of miscellaneous equipment including equipment not shown if impacting work to be demolished.
    - d. All cutting and patching necessary for work of this contract, including layout, sleeves, coring, debris removal, sawcuts, and providing lintels.
  4. Temporary Facilities
    - a. Provide critical barriers at all window removals.
    - b. Provide continuous exits.
    - c. Provide temporary shoring as required at new openings.
    - d. Provide insulated weather-tight temporary protection at all openings not receiving new units.

- e. Provide Temporary Facilities indicated as Work of this Contract in Division 1 Section 01500, "Temporary Facilities and Controls"
  - 5. New Construction:
    - a. Provide new windows, screens, trims, operators, hardware and glazing as shown.
    - b. Provide new lintels as per the drawings and contract documents.
    - c. Provide new Fiberglass sandwich panels and their frames (Kalwall)
    - d. Flashing and counter flashing for all penetrations.
    - e. Provide all blocking and fascia work as shown.
    - f. Provide rough and finish carpentry.
    - g. Provide thermal and moisture protection.
    - h. All caulking and sealants within or interfacing with the work of this contract.
  - 6. General Requirements, including but not limited to, additional items specifically indicated as the Work of this Contract.
  - 7. ***Milestone schedule is to be reviewed as there will be the need for the Window Contractor to provide multiple phased visits for work as needed to complete work according to the milestone schedule.***
- B. The Work of the Window Contract includes but is not limited to the Work that is specified in the Project Manual(s) and as shown on the drawings that form the contract plans. The Contractor is directed to examine all drawings since certain details and/or notes may appear anywhere therein that apply to his/her particular work. This prime contract is defined as, and includes, all Sections in the Divisions indicated by reference, and specific Sections noted:
- 1. Division 1 –General Requirements, all Sections, including Temporary Facilities indicated.
  - 2. Division 2 – Existing Conditions, All Sections
  - 3. Division 6 – Woods, Plastics, and Composites, all Sections as they pertain to the scope of this work.
  - 4. Division 7 –Thermal and Moisture Protection, all Sections as they pertain to this scope of work
  - 5. Division 8- Openings, all sections as they pertain to the scope of this work

#### 1.17 ADDITIONAL SCOPING

- A. Definition of Extent of Prime Contract Work; Additional Prime Contract Work not previously described
- 1. All Prime Contractors are responsible for reviewing plans and specs as it pertains to their scope of work mentioned in the contract documents. Scopes of work referenced may be found in multiple locations throughout the plans and specifications.
  - 2. Local custom and trade union jurisdictional settlements do not control the scope of work included in each prime contract. When a potential jurisdictional dispute or similar interruption of work is first identified or threatened, the affected prime contracts shall promptly negotiate a reasonable settlement to avoid or minimize the pending interruption and delays.
  - 3. All OSHA safety and hazardous materials regulations will be enforced on this project. All Contractors must submit a safety program, a hazardous materials program, (all required data must be maintained at the job site) and attend safety meetings. Toolbox talks will be required from each prime contractor, with a copy of, given to the Construction Manager.

4. All Contractors are responsible for any debris caused by their work. A daily clean-up and disposal is required by each Contractor for the periods which that Contractor is performing work on site, on a day selected by the Construction Manager. Each trade will assign at least one person to the weekly clean-up; the name of this person is to be submitted to the Construction Manager. Any Contractor not providing personnel will be "back-charged" for labor provided by the Construction Manager.
5. All Contractors are responsible for cutting/patching required to complete their work. All exposed finishes must be ready to receive paint, etc.; all concealed openings (piping, ductwork, conduit, etc.) must be repaired to comply with specified wall or deck conditions.
6. Multiple Crews: To maintain the project schedule, each Prime Contractor is to provide multiple crews. Each crew is to be furnished with its own supervision, cranes, scaffold, and other means necessary to maintain the Project Schedule.
7. Supervision: The proposed project manager and field superintendent for the project is to have at least five years experience in the proposed position. Each successful bidder shall submit resumes to the Construction Manager for the proposed project manager and field superintendent for the project. This information will be reviewed with the Owner, Architect and Construction Manager for approval. Should the Project Manager and/or Superintendent prove unqualified for the position at any point in the project, the Construction Manager shall issue a letter stating that the person is to be removed from involvement in the project. Action by the contractor must be made within seven working days of receipt of such letter.
8. Each prime contractor shall return areas disturbed by their work activities to condition prior to start of work.
9. Each prime contractor shall maintain within its field office a complete and current set of Contract Documents (including any Addenda, Change Orders, and Modifications thereto), approved shop drawings, samples, color schedules and other data pertinent to the Project.
10. Each prime contractor is to survey existing work and submit to the Construction Manager a list of damaged areas (e.g. exterior brickwork) prior to commencing work. Any damaged areas not identified prior to the work shall be the responsibility of the contractor/ Contractors working in that area. Construction Manager will have photos of existing conditions on file for reference.
11. The General Construction Work Contract (GC #1) is required to submit a construction and submittal schedule based on the milestone dates to the Construction Manager for review and comment no later than 2 weeks after a Notice to Proceed for the work is issued. The other Prime Contractors have 5 days to complete their construction and submittal schedules after the Construction Manager distributes the General Construction Contractor's schedule.
12. Unless a specific item or material is noted as to remain the Owner's property or to become the Contractor's property (or similar words), any material having salvage or reuse value shall be inspected by the Owner. If the Owner wishes to retain this material, it shall be turned over to him on the site where directed. If the Owner designates the material as scrap, it shall become the Construction Manager's property and removed from the site. Material having salvage value shall be carefully removed. If the Construction Manager designates the material as scrap, it shall become the contractor's property and removed from the site by the contractor. Material having salvage value shall be carefully removed.
13. When the building is occupied and fire alarm and safety system work is in progress, the Electrical Contractor (Contract #4) shall continuously maintain the existing building's fire alarm and detection system and exit, and emergency lighting system or provisions must be made by the Electrical Contractor to provide equivalent safety. Electrical Contractor must notify the local fire department of any non-operating systems.

14. All personnel required to be on site shall have all required personnel protective equipment on, while on the project site.
15. All personnel on site shall have a photo ID displayed where visible, while on the project site. Those without will be removed from site at once. If the same individual fails to have the ID a second time they will be removed from site and not be allowed back on site.

#### 1.18 TESTING

- A. Required testing and test procedures are indicated under each Division of the Technical Specifications. Other testing shall be performed per generally accepted standards.
- B. The Architect shall reserve the right to require additional information as is deemed necessary to fully evaluate testing results.
- C. The Owner shall employ and pay for an independent testing and inspection agency for testing requirements of their work as assigned by this scope of work. All testing shall be per technical specification requirements. The Prime Contractor requiring testing will notify the Construction Manager forty-eight hours in advance of the required testing to allow for coordination and scheduling. Failure to give sufficient notice will require the prime contractor to pay for alternate testing to satisfy the specification.

#### 1.19 WORK SEQUENCE

- A. The Work will be conducted to provide the least possible interference to the activities of the Owner's personnel.
- B. All contract scopes of work in unoccupied areas of work can be performed weekdays according to milestone schedule. Please see schedule for scheduled second shift work. Work cannot be performed in occupied areas. Work shall be scheduled off-hours, vacations and weekends for occupied areas. A Construction Manager Superintendent must be on site at all times that work is being performed. If a contractor fails to maintain the progress as indicated by the milestone schedule by no other fault but its own and requires overtime to complete the work; the contractor shall make arrangements with the Construction Manager 24 hours in advance and pay for a Construction Manager's superintendent at \$150.00 per hour. In the event that the cause for delay is multi-contract, then the costs shall be distributed evenly among contracts. Advise the Construction Manager 48 hours prior to commencing work inside the building.
- C. Coordination of any utility and/or power interruption must be done with the Construction Manager. Shutdowns must occur during off-hours and on days when the building is not occupied by the owner.
- D. Construction access to the site shall be limited to those designated for contractor's personnel, equipment and deliveries by the Owner. Contractors' staging, parking and storage shall be coordinated by the Construction Manager.
- E. Each Contractor shall inspect the site and review the AHERA report on file for the presence of asbestos. Unless otherwise noted, there will be asbestos containing material in place that will require work to take place in the vicinity of, around and/or next to. Each prime contractor that will be working above ceilings, demolishing, in crawl spaces, boiler rooms and all other areas that may contain asbestos per the AHERA report, shall employ "Allied Trades: certified/licensed tradesman as part of the onsite workforce".

#### 1.20 OCCUPANCY REQUIREMENTS

- A. The General Work Contractor shall provide indoor air quality management, for their contract work area, as specified by the Department of Labor and OSHA for the building, when the building is enclosed, as determined by the Construction Manager.
  - 1. Provide an exhaust air system for the project indoor areas that could produce fumes, VOC's off-gasses, gasses, dusts, mists, or other emissions.
  - 2. Exhaust air system for the project areas that could produce emissions listed in Paragraph 1 shall be utilized.
  - 3. Provide temporary partitions and air seals to prevent the migration of airborne contaminants from unoccupied areas to occupied areas when applicable.
- B. Quality assurance:
  - 1. Maintain a negative pressure between the work area and the space surrounding the work area.
  - 2. Before start of work, submit a design for the exhaust air system. Do not begin work until approval of the Owner is obtained.
    - a. The number of machines required.
    - b. Location of the machines in the workspace.
    - c. Description of the methods used to test air flow and pressure differential.
- C. System operation:
  - 1. A sufficient quantity of exhaust fans in existing window openings or other approved locations shall be operated in accordance with the following applicable standards.
  - 2. Exhaust air system shall operate for a minimum of 72 hours after work is completed, or until all materials have cured sufficiently as to stop out gassing of fumes or odors and area has been ventilated to remove all detectable traces of odors and fumes.
  - 3. Maintain twenty-five (25) feet clearance from all temporary exhaust outlets to all active building outdoor air intakes.

#### 1.21 PROJECT MILESTONE SCHEDULE

- A. Substantial Completion is as follows:
  - 1. Stair #2 Renovation– September 2, 2022
  - 2. Area A (Addition) and Area B- August 4, 2023
  - 3. Area C – August 2, 2024
- B. See also Project Manual Section 00 3113 Milestone Schedule
- C. See the milestone schedule included in Addendum #1.
- D. All Prime Contractors are required to submit a schedule based on the milestone dates to the Construction Manager for review and comment no later than 10 days after a Notice to Proceed for the work is issued.

#### 1.22 ALLOWANCES

- A. See Specification Section 01 21 00 – Contractor shall state where requested on the Bid Form the amount of the requested Allowance. Please note that Bid Item No. 1- Field Directive Allowance is required for all contracts and to be included in the Contractor's Total Base Bid.

#### 1.25 UNIT PRICES

A. See Specification Section 01 2200- Unit Prices. Contractors shall state where requested on the ALTERNATES

B. The Contractor shall state where requested on the Bid Form the amount to be added to or deducted from the base bid for the alternates described in Section 01 23 00 - Alternates.

END OF SECTION 01 12 00



**SECTION 01 2000  
PRICE AND PAYMENT PROCEDURES**

**THANKPART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Schedule of Values.
- B. Procedures for preparation and submittal of applications for progress payments.
- C. Documentation of changes in Contract Sum and Contract Time.
- D. Change procedures.

**1.02 SCHEDULE OF VALUES**

- A. Submit a printed schedule on AIA Form G703 - Application and Certificate for Payment Continuation Sheet. Contractor's standard form or electronic media printout will be considered so long as it meets the criteria as set forth below.
- B. Submit Schedule of Values in duplicate within 15 business days after date of Owner-Contractor Agreement.
- C. Format: Utilize the Table of Contents of this Project Manual. Identify each line item with number and title of the specification Section for each project site. Provide breakdown for both labor and material. Identify site mobilization, site demobilization, bonds and insurance, and allowances separately.
- D. Include within each line item a direct proportional amount of Contractor's overhead and profit.
- E. Include a line item for Record Drawings and Specifications which are to be turned over to the Owner at the end of the project. The amount shall not be less than 0.15 percent of the Contract Price.
- F. Revise schedule to list approved Change Orders, with each Application for Payment.
- G. Include a line item for completion and/or correction of work items listed with the certificate of substantial completion in accordance with closeout procedures. The amount shall not be less than 1 percent of the contract price and will be withheld in its entirety until final payment is released.

**1.03 APPLICATIONS FOR PROGRESS PAYMENTS**

- A. Submit one (1) copy of the Certified Payroll from the Prime Contractor and all subcontractors to the Owner prior to the submission of the Contractor's Application for Payment.
- B. Payment Period: 30 calendar day period. Refer to the General Conditions.
- C. Present required information in typewritten form.
- D. Form: AIA G702 Application and Certificate for Payment and AIA G703 - Continuation Sheet including continuation sheets when required.
- E. For each item, provide a column for listing each of the following:
  - 1. Item Number.
  - 2. Description of work.
  - 3. Scheduled Values, indicate labor and material.
  - 4. Previous Applications.
  - 5. Work in Place and Stored Materials under this Application.
  - 6. Authorized Change Orders.
  - 7. Total Completed and Stored to Date of Application.
  - 8. Percentage of Completion.
  - 9. Balance to Finish.
  - 10. Retainage.
- F. Execute certification by signature of authorized officer.
- G. Use data from approved Schedule of Values. Provide dollar value in each column for each line item for portion of work performed and for stored products.

- H. List each authorized Change Order as a separate line item, listing Change Order number and dollar amount as for an original item of Work.
- I. Payment for stored material: Payment for stored material shall be in accordance with the provisions of the General Conditions. Payments for stored material shall be in the amount of 95 percent of the value of the materials less 5 percent retainage. No payment will be made for materials improperly stored or improperly protected from the weather loss or other damage. All materials stored off-site shall be fully insured against all losses by the Contractor, and proof of such coverage shall be submitted with the request for payment.
- J. Submit a pencil copy of the Payment Application to the Resident Project Representative for review and approval prior to the submission of hard copies.
- K. Upon receipt of the approved pencil copy, prepare and submit three (3) copies of each Application for Payment on AIA Form G702. Include a legible copy of the approved pencil copy with the three (3) applications for payment.
- L. When Architect/Engineer requires substantiating information, submit data justifying dollar amounts in question. Provide one copy of data with cover letter for each copy of submittal. Show application number and date, and line item by number and description.

#### **1.04 MODIFICATION PROCEDURES**

- A. Submit name of the individual authorized to receive change documents and who will be responsible for informing others in Contractor's employ or subcontractors of changes to the Contract Documents.
- B. Architect/Engineer will advise of minor changes in the Work not involving an adjustment to Contract Sum or Contract Time as authorized by the Conditions of the Contract by issuing supplemental instructions.
- C. Construction Change Directive: Architect/Engineer may issue a document, **on AIA Form G714**, signed by Owner, instructing Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order. The Document shall describe the changes in the Work and designates method of determining any change in Contract Sum or Contract Time.
  - 1. The document will describe the required changes and will designate method of determining any change in Contract Sum or Contract Time.
  - 2. Promptly execute the change.
- D. Proposal Request: Architect/Engineer may issue a document which includes a detailed description of a proposed change with supplementary or revised Drawings and specifications with a stipulation of any overtime work required and the period of time during which the requested price will be considered valid. Contractor shall prepare and submit a fixed price quotation within 7 calendar days.
- E. Contractor may propose a change by submitting a request for change to Architect/Engineer, describing the proposed change and its full effect on the Work, with a statement describing the reason for the change, and the effect on the Contract Sum and Contract Time with full documentation and a statement describing the effect on Work by separate or other contractors. Document any requested substitutions in accordance with Section 01 6000.
- F. Computation of Change in Contract Amount: As specified in the Agreement and Conditions of the Contract.
  - 1. For change requested by Architect/Engineer for work falling under a fixed price contract, the amount will be based on Contractor's price quotation.
  - 2. For change requested by Contractor, the amount will be based on the Contractor's request for a Change Order as approved by Architect/Engineer.
  - 3. For pre-determined unit prices and quantities, the amount will be based on the fixed unit prices.
  - 4. For change ordered by Architect without a quotation from Contractor, the amount will be determined by Architect based on the Contractor's substantiation of costs as specified for Time and Material Work.

- G. Time and Material Change Order: Submit itemized account and supporting data after completion of change, within time limits indicated in the Conditions of the Contract. Architect/Engineer will determine the change allowable in Contract Sum and Contract Time as provided in the Contract Documents.
  - 1. Maintain detailed records of work done on time and material basis. Provide full information required for evaluation of proposed changes and to substantiate costs for changes in the work
- H. Substantiation of Costs: Provide full information required for evaluation.
  - 1. Provide following data:
    - a. Quantities of products, labor, and equipment.
    - b. Overhead and profit.
    - c. Justification for any change in Contract Time.
    - d. Credit for deletions from Contract, similarly documented.
- I. Execution of Change Orders: Architect/Engineer will issue Change Orders for signatures of parties as provided in the Conditions of the Contract on AIA G701.
- J. After execution of Change Order, promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as a separate line item and adjust the Contract Sum.
- K. Promptly revise progress schedules to reflect any change in Contract Time, revise sub-schedules to adjust times for other items of work affected by the change, and resubmit.
- L. Promptly enter changes in Project Record Documents.
- M. Payment for rock excavation shall be in accordance with unit price allowances: Rock excavation is defined as removal of established bedrock, ledge rock, or similarly naturally occurring material which cannot be removed using conventional excavating equipment. Excavation and removal of rock fragments and boulders greater than 1 cubic yard in volume shall also be included in rock excavation. Payment lines for rock excavation shall include trimming of rock back on each side of trenches so that no rock protrudes within 6" of the installed pipe on sides or bottom. Payment lines for rock excavation necessary for excavation of foundation shall include trimming of rock to 1'-0" beyond outside face of footing or grade beam.

#### **1.05 APPLICATION FOR FINAL PAYMENT**

- A. Prepare Application for Final Payment as specified for progress payments, identifying total adjusted Contract Sum, previous payments, and sum remaining due.
- B. Application for Final Payment will not be considered until the following have been accomplished:
  - 1. All closeout procedures specified in Section 01 7000.
  - 2. All Items to be Completed issued at the time of Substantial Completion are completed and accepted.

#### **PART 2 PRODUCTS - NOT USED**

#### **PART 3 EXECUTION - NOT USED**

**END OF SECTION**

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## **SECTION 01 2100 ALLOWANCES**

### **PART 1 GENERAL**

#### **1.01 SECTION INCLUDES**

- A. Cash allowances.
- B. Payment and modification procedures relating to allowances.

#### **1.02 RELATED REQUIREMENTS**

- A. Section 01 2000 - Price and Payment Procedures: Additional payment and modification procedures.

#### **1.03 ALLOWANCES**

- A. When authorized by the Architect/Engineer, cash allowances will be authorized by a Construction Change Directive. The determination shall be as described in Article 7.3 of the General Conditions of the Contract for Construction and Supplementary Conditions of the Contract for Construction.
- B. Costs included in the Contractor's allowances shall include all costs as outlined in the General Conditions of the Contract for Construction and Supplementary Conditions of the Contract for Construction.
- C. Architect/Engineer Responsibilities:
  - 1. Consult with Contractor for consideration and selection of products.
  - 2. Select products in consultation with Owner and transmit decision to Contractor.
- D. Contractor Responsibilities:
  - 1. Assist Architect/Engineer in selection of products, suppliers, and installers.
  - 2. Obtain proposals from suppliers and installers and offer recommendations.
  - 3. On notification of which products have been selected, execute purchase agreement with designated supplier and installer.
  - 4. Arrange for and process Shop Drawings, product data, and samples. Arrange for delivery.
  - 5. Promptly inspect products upon delivery for completeness, damage, and defects.
- E. The Owner reserves the right to reduce or eliminate all allowances at any time during this Contract by change order.
- F. It is expressly understood that, at the completion of the project, all remaining unused portions of the allowance(s), shall be credited to the Owner. A deductive Change Order will be prepared by Architect and executed by the Architect, Construction Manager, Owner and Contractor.

#### **1.04 ALLOWANCE SCHEDULE**

- A. **Contract No. 1: GC1 - General Construction:**
  - 1. Bid Item No.1 - Field Directive Allowance: The General Contractor shall include in his Total Base Bid a cash allowance in the amount \$500,000.00 for Work Directive Changes as authorized by the Construction Manager in accordance with pertinent provisions of the General Conditions of the Construction Contract.
- B. **Contract No. 2: SC1 - Site Construction:**
  - 1. Bid Item No.1 - Field Directive Allowance: The Site Contractor shall include in his Total Base Bid a cash allowance in the amount \$100,000.00 for Work Directive Changes as authorized by the Construction Manager in accordance with pertinent provisions of the General Conditions of the Construction Contract.
  - 2. Bid Item No. 2 - Contaminated Soils (1 to 100 cubic yards): The Site Contractor shall include in his Total Base Bid an allowance for the removal and disposal of 1 to 100 cubic yards of petroleum contaminated soils and replacement with granular fill - work is associated with the removal of the underground fuel oil tank at the Middle School, in accordance with pertinent provisions of the General Conditions of the Construction Contract.

3. Bid Item No. 3 - Contaminated Ground Water Allowance (1 to 500 Gallons): The Site Contractor shall include in his Total Base Bid an allowance for the removal and disposal of 1 to 500 Gallons of petroleum contaminated ground water associated with the removal of the underground fuel oil tank at the Middle School, in accordance with the pertinent provisions of the General Conditions of the Construction Contract.
- C. **Contract No. 3: MC1 - Mechanical Construction:**
  1. Bid Item No.1 - Field Directive Allowance: The Mechanical Contractor shall include in his Total Base Bid a cash allowance in the amount \$250,000.00 for Work Directive Changes as authorized by the Construction Manager in accordance with pertinent provisions of the General Conditions of the Construction Contract.
- D. **Contract No. 4: EC1 - Electrical Construction:**
  1. Bid Item No.1 - Field Directive Allowance: The Electrical Contractor shall include in his Total Base Bid a cash allowance in the amount \$150,000.00 for Work Directive Changes as authorized by the Construction Manager in accordance with pertinent provisions of the General Conditions of the Construction Contract.
- E. **Contract No. 5: PC1 - Plumbing Construction:**
  1. Bid Item No.1 - Field Directive Allowance: The Plumbing Contractor shall include in his Total Base Bid a cash allowance in the amount \$100,000.00 for Work Directive Changes as authorized by the Construction Manager in accordance with pertinent provisions of the General Conditions of the Construction Contract.
- F. **Contract No. 7: FS1 - Food Service:**
  1. Bid Item No.1 - Field Directive Allowance: The Food Service Contractor shall include in his Total Base Bid a cash allowance in the amount \$50,000.00 for Work Directive Changes as authorized by the Construction Manager in accordance with pertinent provisions of the General Conditions of the Construction Contract.
- G. **Contract No. 9: WC1 - Window Construction:**
  1. Bid Item No.1 - Field Directive Allowance: The Window Contractor shall include in his Total Base Bid a cash allowance in the amount \$80,000.00 for Work Directive Changes as authorized by the Construction Manager in accordance with pertinent provisions of the General Conditions of the Construction Contract.

**PART 2 PRODUCTS - NOT USED**

**PART 3 EXECUTION - NOT USED**

**END OF SECTION**

## **SECTION 01 2200 UNIT PRICES**

### **PART 1 GENERAL**

#### **1.01 SECTION INCLUDES**

- A. List of unit prices, for use in preparing Bids.
- B. Measurement and payment criteria applicable to Work performed under a unit price payment method.

#### **1.02 RELATED REQUIREMENTS**

- A. Document 00 2113 - Instructions to Bidders: Instructions for preparation of pricing for Unit Prices.
- B. Section 01 2000 - Price and Payment Procedures: Additional payment and modification procedures.

#### **1.03 COSTS INCLUDED**

- A. Unit Prices included on the Bid Form shall include full compensation for all required labor, products, tools, equipment, plant, transportation, services and incidentals; erection, application or installation of an item of the Work; overhead and profit.

#### **1.04 UNIT QUANTITIES SPECIFIED**

- A. Quantities indicated in the Bid Form are for bidding and contract purposes only. Quantities and measurements of actual Work will determine the payment amount.

#### **1.05 MEASUREMENT OF QUANTITIES**

- A. Measurement methods delineated in the individual specification sections complement the criteria of this section. In the event of conflict, the requirements of the individual specification section govern.
- B. Take all measurements and compute quantities. Measurements and quantities will be verified by Architect.
- C. Assist by providing necessary equipment, workers, and survey personnel as required.
- D. Measurement by Volume: Measured by cubic dimension using mean length, width and height or thickness.
- E. Contractor's Engineer Responsibilities: Sign surveyor's field notes or keep duplicate field notes , calculate and certify quantities for payment purposes.

#### **1.06 PAYMENT**

- A. Payment for Work governed by unit prices will be made on the basis of the actual measurements and quantities of Work that is incorporated in or made necessary by the Work and accepted by the Architect, multiplied by the unit price.

#### **1.07 SCHEDULE OF UNIT PRICES**

- A. Item: Unit Price No. 1 - Contaminated Soils: Per Cubic Yard removal, and legal disposal off site and replacement with granular fill.; Refer also to Sections 31 2316 Excavation and 31 2323 Fill.
- B. Item: Unit Price No. 2 - Contaminated Ground Water: Per Gallon, associated with the removal of the underground fuel oil tank at the Middle School.
- C. Item: Unit Price No. 3 - Hazardous Pipe Fittings: Per pipe elbow removal and legal disposal off of site.
- D. Item: Unit Price No. 4 - Vinyl Asbestos Tile: Per SF removal and legal disposal off of site.

### **PART 2 PRODUCTS - NOT USED**

### **PART 3 EXECUTION - NOT USED**

**END OF SECTION**

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## **SECTION 01 2300 ALTERNATES**

### **PART 1 GENERAL**

#### **1.01 SECTION INCLUDES**

- A. Procedures for pricing Alternates.
- B. Schedule of Alternates.

#### **1.02 ACCEPTANCE OF ALTERNATES**

- A. The Contractor shall include in the appropriate line on his Bid Form an amount sufficient to cover the cost of all work required of his Contract as detailed for each Alternate.
- B. Alternates quoted on Bid Forms will be reviewed and accepted or rejected at Owner's option. Accepted Alternates will be identified in the Owner-Contractor Agreement.
- C. Coordinate related work and modify surrounding work to integrate the Work of each Alternate.

#### **1.03 SCHEDULE OF ALTERNATES**

- A. Contract No. 1 - General Construction
  - 1. Alternate No. GC-1 - Internal Performance Platform:
    - a. Provide General Construction work associated with new internal performance platform off cafeteria, gym storage, toilet rooms and enlarged lobby and mechanical room of approximately 4,260 SF as shown in the contract documents.
  - 2. Alternate No. GC-2 - Performance Platform off Gym:
    - a. Provide General Construction work associated with new performance platform off the gym of approximately 1,870 SF as shown in the contract documents.
  - 3. Alternate No. GC-3 - Main Cupola Restoration:
    - a. Provide restoration to the main cupola as shown on the contract documents.
  - 4. Alternate No. GC-4 - Electrically Raised Gym Curtain Divider:
    - a. Provide credit for providing electrically operated gym curtain divider in lieu of the folding partition wall that is included in the base bid.
  - 5. Alternate No. GC-5 - VCT Flooring in Lieu of LVT Flooring:
    - a. Provide credit for new vinyl composition tile (VCT) flooring in lieu of LVT in all areas shown to receive LVT. Refer to the finish plans and floor patterns on construction documents.
- B. Contract No. 2 - Site Construction
  - 1. Alternate No. SC-1 - Internal Performance Platform
    - a. Provide Site Construction work associated with new internal performance platform off cafeteria, gym storage, toilet rooms and enlarged lobby and mechanical room of approximately 4,260 SF as shown in the contract documents.
  - 2. Alternate No. SC-2 - Performance Platform off Gym.
    - a. Provide Site Construction work associated with new performance platform off the gym of approximately 1,870 SF as shown on the contract documents.
- C. Contract No. 3 - Mechanical Construction
  - 1. Alternate No. MC-1 - Internal Performance Platform and Toilet Rooms
    - a. Provide Mechanical Construction work associated with new internal performance platform off cafeteria, gym storage, toilet rooms and enlarged lobby and mechanical room of approximately 4,260 SF as shown in the contract documents.
  - 2. Alternate No. MC-2 - Performance Platform off Gym.
    - a. Provide Mechanical Construction work associated with new performance platform off the gym of approximately 1,870 SF as shown on the contract documents.
- D. Contract No. 4 - Electrical Construction
  - 1. Alternate No. EC-1 - Internal Performance Platform and Toilet Rooms
    - a. Provide Electrical Construction work associated with new internal performance platform off cafeteria, gym storage, toilet rooms and enlarged lobby and mechanical room of approximately 4,260 SF as shown on the contract documents.

2. Alternate No. EC-2 - Performance Platform off Gym.
  - a. Provide Electrical Construction work associated with new performance platform off the gym of approximately 1,870 SF as shown on the contract documents.
- E. Contract No. 5 - Plumbing Construction
  1. Alternate No. PC-1 - Internal Performance Platform and Toilet Rooms
    - a. Provide all Plumbing work associated with the new performance platform and toilet rooms as shown on the contract documents.
  2. Alternate No. PC-2 - Performance Platform off Gym.
    - a. Provide all Plumbing (sprinkler) work associated with the new performance platform off the gym as shown on the contract drawings.
- F. Contract No. 9 - Window Construction
  1. Alternate No. SC-1 - Internal Performance Platform
    - a. Provide window work associated with new internal performance platform off cafeteria, gym storage, toilet rooms and enlarged lobby and mechanical room of approximately 4,260 SF as shown on the contract drawings (Drawing A500.1).

**PART 2 PRODUCTS - NOT USED**

**PART 3 EXECUTION - NOT USED**

**END OF SECTION**

**SECTION 01 3000  
ADMINISTRATIVE REQUIREMENTS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. General administrative requirements.
- B. Preconstruction meeting.
- C. Progress meetings.
- D. Construction progress schedule.
- E. Coordination drawings.
- F. Submittals for review, information, and project closeout.
- G. Requests for Interpretation (RFI) procedures.
- H. Submittal procedures.

**1.02 RELATED REQUIREMENTS**

- A. Section 01 6000 - Product Requirements: General product requirements.
- B. Section 01 7000 - Execution and Closeout Requirements: Additional coordination requirements.
- C. Section 01 7800 - Closeout Submittals: Project record documents; operation and maintenance data; warranties and bonds.

**1.03 GENERAL ADMINISTRATIVE REQUIREMENTS**

- A. Comply with requirements of Section 01 7000 - Execution and Closeout Requirements for coordination of execution of administrative tasks with timing of construction activities.
- B. Make the following types of submittals to Architect:
  - 1. Requests for Interpretation (RFI).
  - 2. Requests for substitution.
  - 3. Shop drawings, product data, and samples.
  - 4. Test and inspection reports.
  - 5. Design data.
  - 6. Manufacturer's instructions and field reports.
  - 7. Applications for payment and change order requests.
  - 8. Progress schedules.
  - 9. Coordination drawings.
  - 10. Correction Punch List and Final Correction Punch List for Substantial Completion.
  - 11. Closeout submittals.

**PART 2 PRODUCTS - NOT USED**

**PART 3 EXECUTION**

**3.01 PRECONSTRUCTION MEETING**

- A. Architect will schedule a meeting after Notice of Award.
- B. Attendance Required:
  - 1. Owner.
  - 2. Architect.
  - 3. Contractor.
- C. Agenda:
  - 1. Execution of Owner-Contractor Agreement.
  - 2. Submission of executed bonds and insurance certificates.
  - 3. Distribution of Contract Documents.
  - 4. Submission of list of subcontractors, list of products, schedule of values, and progress schedule.

5. Designation of personnel representing the parties to Contract .
  6. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
  7. Scheduling.
- D. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.

### **3.02 PROGRESS MEETINGS**

- A. Architect will make arrangements for meetings, prepare agenda with copies for participants, preside at meetings.
- B. Attendance Required:
1. Contractor.
  2. Owner.
  3. Architect.
  4. Contractor's superintendent.
  5. Major subcontractors.
- C. Agenda:
1. Review minutes of previous meetings.
  2. Review of work progress.
  3. Field observations, problems, and decisions.
  4. Identification of problems that impede, or will impede, planned progress.
  5. Review of submittals schedule and status of submittals.
  6. Review of RFIs log and status of responses.
  7. Review of off-site fabrication and delivery schedules.
  8. Maintenance of progress schedule.
  9. Corrective measures to regain projected schedules.
  10. Planned progress during succeeding work period.
  11. Coordination of projected progress.
  12. Maintenance of quality and work standards.
  13. Effect of proposed changes on progress schedule and coordination.
  14. Other business relating to work.
- D. Record minutes and distribute copies within two days after meeting to participants, with two copies to Architect, Owner, participants, and those affected by decisions made.

### **3.03 CONSTRUCTION PROGRESS SCHEDULE - SEE SECTION 01 3216**

- A. Within 10 days after date of the Agreement, submit preliminary schedule defining planned operations for the first 60 days of work, with a general outline for remainder of work.

### **3.04 COORDINATION DRAWINGS**

### **3.05 REQUESTS FOR INTERPRETATION (RFI)**

- A. Definition: A request seeking one of the following:
1. An interpretation, amplification, or clarification of some requirement of Contract Documents arising from inability to determine from them the exact material, process, or system to be installed; or when the elements of construction are required to occupy the same space (interference); or when an item of work is described differently at more than one place in Contract Documents.
  2. A resolution to an issue which has arisen due to field conditions and affects design intent.
- B. Whenever possible, request clarifications at the next appropriate project progress meeting, with response entered into meeting minutes, rendering unnecessary the issuance of a formal RFI.
- C. Preparation: Prepare an RFI immediately upon discovery of a need for interpretation of Contract Documents. Failure to submit a RFI in a timely manner is not a legitimate cause for claiming additional costs or delays in execution of the work.
1. Prepare a separate RFI for each specific item.

- a. Review, coordinate, and comment on requests originating with subcontractors and/or materials suppliers.
  - b. Do not forward requests which solely require internal coordination between subcontractors.
- 2. Prepare in a format and with content acceptable to Owner.
- 3. Prepare using an electronic version of the form appended to this section.
- 4. Combine RFI and its attachments into a single electronic file. PDF format is preferred.
- D. Reason for the RFI: Prior to initiation of an RFI, carefully study all Contract Documents to confirm that information sufficient for their interpretation is definitely not included.
  - 1. Include in each request Contractor's signature attesting to good faith effort to determine from Contract Documents information requiring interpretation.
  - 2. Unacceptable Uses for RFIs: Do not use RFIs to request the following::
    - a. Approval of submittals (use procedures specified elsewhere in this section).
    - b. Approval of substitutions (see Section - 01 6000 - Product Requirements)
    - c. Changes that entail change in Contract Time and Contract Sum (comply with provisions of the Conditions of the Contract).
    - d. Different methods of performing work than those indicated in the Contract Drawings and Specifications (comply with provisions of the Conditions of the Contract).
  - 3. Improper RFIs: Requests not prepared in compliance with requirements of this section, and/or missing key information required to render an actionable response. They will be returned without a response, with an explanatory notation.
  - 4. Frivolous RFIs: Requests regarding information that is clearly indicated on, or reasonably inferable from, Contract Documents, with no additional input required to clarify the question. They will be returned without a response, with an explanatory notation.
- E. Review Time: Architect will respond and return RFIs to Contractor within seven calendar days of receipt. For the purpose of establishing the start of the mandated response period, RFIs received after 12:00 noon will be considered as having been received on the following regular working day.

### **3.06 SUBMITTALS FOR REVIEW**

- A. When the following are specified in individual sections, submit them for review:
  - 1. Product data.
  - 2. Shop drawings.
  - 3. Samples for selection.
  - 4. Samples for verification.
- B. Submit to Architect for review for the limited purpose of checking for compliance with information given and the design concept expressed in Contract Documents.
- C. Samples will be reviewed for aesthetic, color, or finish selection.
- D. After review, provide copies and distribute in accordance with SUBMITTAL PROCEDURES article below and for record documents purposes described in Section 01 7800 - Closeout Submittals.

### **3.07 SUBMITTALS FOR INFORMATION**

- A. When the following are specified in individual sections, submit them for information:
  - 1. Design data.
  - 2. Certificates.
  - 3. Test reports.
  - 4. Inspection reports.
  - 5. Manufacturer's instructions.
  - 6. Manufacturer's field reports.
  - 7. Other types indicated.
- B. Submit for Architect's knowledge as contract administrator or for Owner.

### **3.08 SUBMITTALS FOR PROJECT CLOSEOUT**

- A. Submit Correction Punch List for Substantial Completion.
- B. Submit Final Correction Punch List for Substantial Completion.
- C. When the following are specified in individual sections, submit them at project closeout in compliance with requirements of Section 01 7800 - Closeout Submittals:
  - 1. Project record documents.
  - 2. Operation and maintenance data.
  - 3. Warranties.
  - 4. Bonds.
  - 5. Other types as indicated.
- D. Submit for Owner's benefit during and after project completion.

**END OF SECTION**

**SECTION 01 3216  
CONSTRUCTION PROGRESS SCHEDULE**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Preliminary schedule.
- B. Construction progress schedule.

**1.02 REFERENCES**

- A. AGC (CPSM) - Construction Planning and Scheduling Manual 2004.

**1.03 SUBMITTALS**

- A. Within 10 business days after date of Agreement, each Prime Contractor shall submit to the Construction Manager and Architect three (3) prints of a preliminary construction schedule to be used for the generation of a MASTER CONSTRUCTION SCHEDULE created by the General Contractor.
- B. If preliminary schedule requires revision after review, the Prime Contractor shall submit revised schedule within 10 business days.
- C. The MASTER CONSTRUCTION SCHEDULE created by the General Contractor shall be a computer generated CPM format including all Prime Contractors work items and format as outlined in the contract documents.
- D. Within 30 calendar days after the Owner's Notice to Proceed, the General Contractor shall submit seven (7) prints of his created MASTER CONSTRUCTION SCHEDULE to the Construction Manager and one (1) print to the Architect.
- E. MASTER CONSTRUCTION SCHEDULE and shall be revised and updated monthly, prior to each project meeting by the General Contractor using each Prime Contractors submitted updated schedules.
- F. Failure to submit revised schedules by any Prime Contractor will result in the withholding of payment requisitions.

**1.04 QUALITY ASSURANCE**

- A. Employ a scheduler who is thoroughly trained and experienced in compiling construction schedule data and in preparing and issuing periodic reports as required below.
  - 1. Perform data preparation, analysis, charting, and updating in accordance with standard approved by the Construction Manager and Architect/Engineer.
  - 2. Reliance upon the approved schedule:
    - a. The construction schedule as approved by the Construction Manager will be an integral part of the Contract and will establish interim completion dates for the various activities under the Contract.
    - b. Should any activity not be completed within 15 business days after the stated scheduled date, the Owner shall have the right to require the Contractor to expedite completion of the activity by whatever means the Owner deems appropriate and necessary, without additional compensation to the Contractor (in accordance with the General and Supplementary Conditions).
    - c. Costs incurred by the Owner, Construction Manager and Architect/Engineer in connection with expediting construction activity under this article shall be reimbursed by the Contractor.
    - d. It is expressly understood and agreed that failure by the Owner to exercise the option either to order the Contractor to expedite an activity or to expedite the activity by other means shall not be considered to set a precedent for any other activities.
    - e. The Owner may withhold payment requisitions if the project schedule is not current and/or does not show Contractor's means, method, and sequence for addressing Delinquent Work items.

### **1.05 SCHEDULE FORMAT**

- A. Critical Path Method - Computerized Format.
- B. Listings: In chronological order according to the start date for each activity. Identify each activity with the applicable specification section number.
- C. Diagram Sheet Size: Maximum 24 inches x 36 inches or width required.
- D. Scale and Spacing: To allow for notations and revisions.

### **PART 2 PRODUCTS - NOT USED**

### **PART 3 EXECUTION**

#### **3.01 PRELIMINARY SCHEDULE**

- A. Prepare preliminary schedule in the form of a horizontal bar chart.
- B. Within 10 calendar days after date of agreement, each Prime Contractor shall submit three (3) prints of a preliminary construction schedule.
- C. Within 30 days after receipt of Notice to Proceed, the General Contractor shall complete the construction analysis in preliminary form, meet with the Construction Manager and Architect/Engineer to review contents of the proposed construction schedule, and make all revisions agreed upon. Submit in accordance with the above.

#### **3.02 CONTENT**

- A. Show complete sequence of construction by activity with dates for beginning and completion of each element of construction.
- B. Identify each item by specification section number.
- C. Show accumulated percentage of completion of each item, and total percentage of Work completed, as of the first day of each month.
- D. Provide separate schedule of submittal dates for Shop Drawings, product data, and samples, and dates reviewed submittals will be required from Architect / Engineer. Indicate decision dates for selection of finishes.
- E. Coordinate content with schedule of values as listed in the General Conditions of the Contract for Construction and the Supplementary Conditions of the Contract for Construction.
- F. Provide legend for symbols and abbreviations used.

#### **3.03 CONSTRUCTION ANALYSIS**

- A. Graphically show on a bar chart the order and interdependence of all activities necessary to complete the Work and the sequence in which each activity is to be accomplished, as planned by the Contractor and his project field superintendent in coordination with all subcontractors whose Work is shown on the diagram.
- B. Include, but do not necessarily limit indicated activities to:
  - 1. Project mobilization.
  - 2. Submittal and approval of Shop Drawings and samples.
  - 3. Procurement of equipment and critical materials.
  - 4. Fabrication of special material and equipment, and its installation and testing.
  - 5. Final clean-up.
  - 6. Final inspecting and testing.
  - 7. All activities by the Architect/Engineer and / or Construction Manager that effect progress, required dates for completion, or both, for all and each part of the Work.

#### **3.04 BAR CHARTS**

- A. Include a separate bar for each major portion of Work or operation.
- B. Identify the first work day of each week.



### **3.05 REVIEW AND EVALUATION OF SCHEDULE**

- A. Participate in joint review and evaluation of schedule with Construction Manager, Architect / Engineer at each submittal.
- B. Evaluate project status to determine Work behind schedule and Work ahead of schedule.
- C. After review, revise as necessary as result of review, and resubmit within 10 calendar days.

### **3.06 UPDATING SCHEDULE**

- A. Maintain schedules to record actual start and finish dates of completed activities.
- B. Indicate progress of each activity to date of revision with projected completion date of each activity.
- C. Annotate diagrams to graphically depict current status of Work.
- D. Identify activities modified since previous submittal, major changes in Work, and other identifiable changes.
- E. Indicate changes required to recover for delays required to maintain major milestones and Date of Substantial Completion.
- F. Submit reports required to support recommended changes.
- G. Provide narrative report to define problem areas, anticipated delays, and impact on the schedule. Report corrective action taken or proposed and its effect including the effects of changes on schedules of separate contractors.

### **3.07 REVISIONS**

- A. Make only those revisions to approved construction schedule as are approved in advance by the Construction Manager and Architect / Engineer.

**END OF SECTION**

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**SECTION 01 3300  
SUBMITTAL PROCEDURES**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Submittal Procedures.
- B. Submittals for Shop Drawings, Product Data, Samples and other submittals.
- C. Number of copies of submittals.

**1.02 RELATED REQUIREMENTS**

- A. General and Supplementary Conditions for submitting Applications for Payment and the Schedule of Values.
- B. Section 01 3000 for submitting and distributing meeting and conference minutes and for submitting Coordination Drawings.
- C. Section 01 3216 for submitting schedules and reports, including Contractor's Construction Schedule and the Submittals Schedule.
- D. Section 01 4000 for submitting test and inspection reports and for mockup requirements.
- E. Section 01 4533 for submitting test and inspection reports.
- F. Section 01 7800 for submitting warranties.
- G. Section 01 7800 for submitting Record Drawings, Record Specifications, and Record Product Data.
- H. Section 01 7800 for submitting operation and maintenance manuals.
- I. Section 01 7900 for submitting of demonstration of equipment and training of Owner's personnel.
- J. Divisions 02 through 49 Sections for specific requirements for submittals in those Sections.

**1.03 DEFINITIONS**

- A. Action Submittals: Written and graphic information that requires Architect's responsive action.
- B. Informational Submittals: Written information that does not require Architect's responsive action. Submittals may be rejected for not complying with requirements.

**1.04 SUBMITTAL PROCEDURES**

- A. General: Electronic copies of CAD Drawings of the Contract Drawings will be provided by Architect for Contractor's use in preparing submittals upon execution of the required release forms and written approval of the Owner. Consult the office of the Architect for costs and other information pertaining to the process for the release of CADD files.
- B. Coordination: Coordinate preparation and processing of submittals with performance of construction activities.
  - 1. Coordinate each submittal with fabrication, purchasing, testing, delivery, other submittals, and related activities that require sequential activity.
  - 2. Coordinate transmittal of different types of submittals for related parts of the Work so processing will not be delayed because of need to review submittals concurrently for coordination.
    - a. Architect reserves the right to withhold action on a submittal requiring coordination with other submittals until related submittals are received.
- C. Submittals Schedule: Comply with requirements in Section 01 3216 for list of submittals and time requirements for scheduled performance of related construction activities.
- D. Processing Time: Allow enough time for submittal review, including time for resubmittals, as follows. Time for review shall commence on Architect's receipt of submittal. No extension of the Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing, including resubmittals.

1. Initial Review: Allow 30 days for initial review of each submittal. Allow additional time if coordination with subsequent submittals is required. Architect will advise Contractor when a submittal being processed must be delayed for coordination.
  2. Intermediate Review: If intermediate submittal is necessary, process it in same manner as initial submittal.
  3. Resubmittal Review: Allow 30 days for review of each resubmittal.
  4. Sequential Review: Where sequential review of submittals by Architect's consultants, Owner, or other parties is indicated, allow 30 days for initial review of each submittal.
  5. Concurrent Consultant Review: Where the Contract Documents indicate that submittals may be transmitted simultaneously to Architect and to Architect's consultants, allow 30 days for review of each submittal. Submittal will be returned to Architect before being returned to Contractor. Submit samples, chips, charts for materials and products for which color, pattern, texture of other characteristics are required to be selected. All color submittals will be required before any color selections will be approved, in order to ensure color integrity for the entire project. Approval for color selections may take up to 30 days after all samples are received. No extension of Contract Time will be authorized because of failure to transmit submittals enough in advance of the Work to permit processing.
- E. Identification: Place a permanent label or title block on each submittal for identification.
1. Indicate name of firm or entity that prepared each submittal on label or title block.
  2. Provide a space approximately 6 by 8 inches on label or beside title block to record Contractor's review and approval markings and action taken by Architect.
  3. Include the following information on label for processing and recording action taken:
    - a. Project name.
    - b. Date.
    - c. Name and address of Architect.
    - d. Name and address of Contractor.
    - e. Name and address of subcontractor.
    - f. Name and address of supplier.
    - g. Name of manufacturer.
    - h. Submittal number or other unique identifier, including revision identifier.
      - 1) Submittal number shall use Specification Section number followed by a decimal point and then a sequential number (i.e., 06 1000.01). Resubmittals shall include an alphabetic suffix after another decimal point (i.e., 06 1000.01.A).
    - i. Number and title of appropriate Specification Section.
    - j. Drawing number and detail references, as appropriate.
    - k. Location(s) where product is to be installed, as appropriate.
    - l. Other necessary identification.
- F. Deviations: Highlight, encircle, or otherwise specifically identify deviations from the Contract Documents on submittals.
- G. Additional Copies: Unless additional copies are required for final submittal, and unless Architect observes noncompliance with provisions in the Contract Documents, initial submittal may serve as final submittal.
1. Submit one (1) copy of submittal to concurrent reviewer in addition to specified number of copies to Architect.
- H. Transmittal: Package each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Architect will return submittals, without review, received from sources other than Contractor.
1. Transmittal Form: Provide locations on form for the following information:
    - a. Project name.
    - b. Date.
    - c. Destination (To:).
    - d. Source (From:).
    - e. Names of subcontractor, manufacturer, and supplier.
    - f. Category and type of submittal.

- g. Submittal purpose and description.
  - h. Specification Section number and title.
  - i. Drawing number and detail references, as appropriate.
  - j. Transmittal number, numbered consecutively.
  - k. Submittal and transmittal distribution record.
  - l. Remarks.
  - m. Signature of transmitter: On an attached separate sheet, prepared on Contractor's letterhead, record relevant information, requests for data, revisions other than those requested by Architect on previous submittals, and deviations from requirements in the Contract Documents, including minor variations and limitations. Include same label information as related submittal.
- I. Resubmittals: Make resubmittals in same form and number of copies as initial submittal.
    - 1. Note date and content of previous submittal.
    - 2. Note date and content of revision in label or title block and clearly indicate extent of revision.
  - J. Distribution: Furnish copies of final submittals to manufacturers, subcontractors, suppliers, fabricators, installers, authorities having jurisdiction, and others as necessary for performance of construction activities. Show distribution on transmittal forms.

## **PART 2 PRODUCTS**

### **2.01 ACTION SUBMITTALS**

- A. General: Prepare and submit Action Submittals required by individual Specification Sections.
- B. Product Data: Collect information into a single submittal for each element of construction and type of product or equipment.
  - 1. If information must be specially prepared for submittal because standard printed data are not suitable for use, submit as Shop Drawings, not as Product Data.
  - 2. Mark each copy of each submittal to show which products and options are applicable.
  - 3. Include "Accessory Material VOC Content Certification Form" with all Product Data submittals.
  - 4. Include the following information, as applicable:
    - a. Manufacturer's written recommendations
    - b. Manufacturer's product specifications.
    - c. Manufacturer's installation instructions.
    - d. Standard color charts.
    - e. Manufacturer's catalog cuts.
    - f. Wiring diagrams showing factory-installed wiring.
    - g. Printed performance curves.
    - h. Operational range diagrams.
    - i. Mill reports.
    - j. Standard product operation and maintenance manuals.
    - k. Compliance with specified referenced standards.
    - l. Testing by recognized testing agency.
    - m. Application of testing agency labels and seals
    - n. Notation of coordination requirements.
      - 1) Submit Product Data before or concurrent with Samples.
  - 5. Shop Drawings: Prepare Project-specific information, drawn accurately to scale. Do not base Shop Drawings on reproductions of the Contract Documents or standard printed data.
    - a. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:
      - 1) Dimensions.
      - 2) Identification of products.
      - 3) Fabrication and installation drawings.
      - 4) Roughing-in and setting diagrams.

- 5) Wiring diagrams showing field-installed wiring, including power, signal, and control wiring.
  - 6) Shopwork manufacturing instructions.
  - 7) Templates and patterns.
  - 8) Schedules.
  - 9) Design calculations.
  - 10) Compliance with specified standards.
  - 11) Notation of coordination requirements.
  - 12) Notation of dimensions established by field measurement.
  - 13) Relationship to adjoining construction clearly indicated.
  - 14) Seal and signature of professional engineer if specified.
  - 15) Wiring Diagrams: Differentiate between manufacturer-installed and field-installed wiring.
    - (a) Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 inches x 11 inches but no larger than 30 inches x 40 inches.
6. Samples: Submit Samples for review of kind, color, pattern, and texture for a check of these characteristics with other elements and for a comparison of these characteristics between submittal and actual component as delivered and installed.
- a. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.
  - b. Identification: Attach label on unexposed side of Samples that includes the following:
    - 1) Generic description of Sample.
    - 2) Product name and name of manufacturer.
    - 3) Sample source.
    - 4) Number and title of appropriate Specification Section.
      - (a) Disposition: Maintain sets of approved Samples at Project site, available for quality-control comparisons throughout the course of construction activity. Sample sets may be used to determine final acceptance of construction associated with each set.
        - (1) Samples that may be incorporated into the Work are indicated in individual Specification Sections. Such Samples must be in an undamaged condition at time of use.
        - (2) Samples not incorporated into the Work, or otherwise designated as Owner's property, are the property of Contractor.
        - (3) Samples for Initial Selection: Submit manufacturer's color charts consisting of units or sections of units showing the full range of colors, textures, and patterns available.
        - (4) Number of Samples: Submit two full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect will return submittal with options selected.
        - (5) Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.
        - (6) Number of Samples: Submit three (3) sets of Samples. Architect will retain one Sample sets; remainder will be returned. Mark up and retain one returned Sample set as a Project Record Sample.

- (7) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
  - (8) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.
7. Product Schedule or List: As required in individual Specification Sections, prepare a written summary indicating types of products required for the Work and their intended location. Include the following information in tabular form:
  - a. Type of product. Include unique identifier for each product.
  - b. Number and name of room or space.
  - c. Location within room or space.
8. Schedule: Comply with requirements specified in Section 01 3216.
9. Application for Payment: Comply with requirements specified in General and Supplementary Conditions.
10. Schedule of Values: Comply with requirements specified in General and Supplementary Conditions.
11. Subcontract List: Prepare a written summary identifying individuals or firms proposed for each portion of the Work, including those who are to furnish products or equipment fabricated to a special design. Include the following information in tabular form:
  - a. Name, address, and telephone number of entity performing subcontract or supplying products.
  - b. Number and title of related Specification Section(s) covered by subcontract.
  - c. Drawing number and detail references, as appropriate, covered by subcontract.

## 2.02 INFORMATIONAL SUBMITTALS

- A. General: Prepare and submit Informational Submittals required by other Specification Sections.
  1. Number of Copies: Submit one (1) copy of each submittal, unless otherwise indicated. Architect will not return copies.
  2. Certificates and Certifications: Provide a notarized statement that includes signature of entity responsible for preparing certification. Certificates and certifications shall be signed by an officer or other individual authorized to sign documents on behalf of that entity.
  3. Test and Inspection Reports: Comply with requirements specified in Division 01 Section "Quality Requirements."
  4. Coordination Drawings: Comply with requirements specified in Section 01 3000.
  5. Contractor's Construction Schedule: Comply with requirements specified in Section 01 3000.
  6. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, names and addresses of architects and owners, and other information specified.
  7. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification (WPS) and Procedure Qualification Record (PQR) on AWS forms. Include names of firms and personnel certified.
  8. Installer Certificates: Prepare written statements on manufacturer's letterhead certifying that Installer complies with requirements in the Contract Documents and, where required, is authorized by manufacturer for this specific Project.
  9. Manufacturer Certificates: Prepare written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.
  10. Product Certificates: Prepare written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.
  11. Material Certificates: Prepare written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.

12. Material Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting test results of material for compliance with requirements in the Contract Documents.
13. Product Test Reports: Prepare written reports indicating current product produced by manufacturer complies with requirements in the Contract Documents. Base reports on evaluation of tests performed by manufacturer and witnessed by a qualified testing agency, or on comprehensive tests performed by a qualified testing agency.
14. Research/Evaluation Reports: Prepare written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:
  - a. Name of evaluation organization.
  - b. Date of evaluation.
  - c. Time period when report is in effect.
  - d. Product and manufacturers' names.
  - e. Description of product.
  - f. Test procedures and results.
  - g. Limitations of use.
15. Schedule of Tests and Inspections: Comply with requirements specified in Section 01 4000.
16. Preconstruction Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of tests performed before installation of product, for compliance with performance requirements in the Contract Documents.
17. Compatibility Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of compatibility tests performed before installation of product. Include written recommendations for primers and substrate preparation needed for adhesion.
18. Field Test Reports: Prepare reports written by a qualified testing agency, on testing agency's standard form, indicating and interpreting results of field tests performed either during installation of product or after product is installed in its final location, for compliance with requirements in the Contract Documents.
19. Maintenance Data: Prepare written and graphic instructions and procedures for operation and normal maintenance of products and equipment. Comply with requirements specified in Section 01 7800 - Closeout Submittals.
20. Design Data: Prepare written and graphic information, including, but not limited to, performance and design criteria, list of applicable codes and regulations, and calculations. Include list of assumptions and other performance and design criteria and a summary of loads. Include load diagrams if applicable. Provide name and version of software, if any, used for calculations. Include page numbers.
21. Manufacturer's Instructions: Prepare written or published information that documents manufacturer's recommendations, guidelines, and procedures for installing or operating a product or equipment. Include name of product and name, address, and telephone number of manufacturer. Include the following, as applicable:
  - a. Preparation of substrates.
  - b. Required substrate tolerances.
  - c. Sequence of installation or erection.
  - d. Required installation tolerances.
  - e. Required adjustments.
  - f. Recommendations for cleaning and protection.
22. Manufacturer's Field Reports: Prepare written information documenting factory-authorized service representative's tests and inspections. Include the following, as applicable:
  - a. Name, address, and telephone number of factory-authorized service representative making report.
  - b. Statement on condition of substrates and their acceptability for installation of product.
  - c. Statement that products at Project site comply with requirements.



- d. Summary of installation procedures being followed, whether they comply with requirements and, if not, what corrective action was taken.
  - e. Results of operational and other tests and a statement of whether observed performance complies with requirements.
  - f. Statement whether conditions, products, and installation will affect warranty.
  - g. Other required items indicated in individual Specification Sections.
23. Insurance Certificates and Bonds: Prepare written information indicating current status of insurance or bonding coverage. Include name of entity covered by insurance or bond, limits of coverage, amounts of deductibles, if any, and term of the coverage.
24. Material Safety Data Sheets (MSDSs): Submit information directly to Owner; do not submit to Architect.

### 2.03 DELEGATED DESIGN

- A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Contract Documents, provide products and systems complying with specific performance and design criteria indicated.
  - 1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect.
- B. Delegated-Design Submittal: In addition to Shop Drawings, Product Data, and other required submittals, submit three copies of a statement, signed and sealed by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional.
  - 1. Indicate that products and systems comply with performance and design criteria in the Contract Documents. Include list of codes, loads, and other factors used in performing these services.

### 2.04 NUMBER OF COPIES OF SUBMITTALS

- A. Documents for Review:
  - 1. The Contractor shall submit one (1) copy of all required information (as outlined in the Contract Specifications). This information shall be submitted in electronic form (.pdf file capable of being viewed on Adobe Acrobat 6.0 or later.)
  - 2. **Electronic files shall be submitted via e-mail to submittals@thebcgroup.com or through Newforma Project Center - Info Exchange. All successful Contractors will be given instructions on how to utilize Newforma Project Center upon the execution of Agreements.**
  - 3. Should a contractor not have the capabilities of submitting electronically, hard copies will be acceptable. The Contractor shall submit one (1) copy of all required information (as outlined herein). The Architect/Engineer shall scan in the hard copy. The Architect/Engineer shall review, mark-up, and return via e-mail the modified electronic submittal. It will be the contractor's responsibility to print out returned submittals.
  - 4. Procedures:
    - a. Outline Drawings: Drawings of equipment, weights, external forces, anchor details and dimensions.
    - b. Wiring Diagrams: Schematic and full-line wiring diagrams for all equipment furnished. Switch developments and internal connection diagrams for all instruments, relays, and other devices.
    - c. Detail and Erection Drawings: Drawings to demonstrate that all parts will conform to the provisions and intent of the Contract Documents.
    - d. Field Detail Drawings: Concrete lift drawings, reinforcing steel placing drawings and bar lists, piping bills of materials, and electrical conduit layout drawings.
    - e. Drawing Review:
      - 1) Review will not relieve the Contractor of responsibility for conformity to the Contract Documents and correct detail and fit of parts when installed.
      - 2) Prints marked "No Exceptions Taken" or "Exceptions as Noted" authorize the Contractor to proceed with construction or fabrication covered by such drawings with the corrections, if any.

- 3) Prints marked "Revise and Resubmit" shall be corrected and re-submitted.
- 4) Each drawing shall have its latest revision clearly indicated by number and date shown in a revision block.
- 5) Applicable parts of the requirements of the above paragraphs shall apply equally to other submittals.
5. Documents for Information: Submit one (1) copy.
6. Documents for Project Closeout: See Specification Section 01 7800 for Project Closeout requirements.
7. Samples: Submit the number specified in individual specification sections; Samples will not be returned to the contractor.

## **PART 3 EXECUTION**

### **3.01 CONTRACTOR'S REVIEW**

- A. Review each submittal and check for coordination with other Work of the Contract and for compliance with the Contract Documents. Note corrections and field dimensions. Mark with approval stamp before submitting to Architect.
- B. Approval Stamp: Stamp each submittal with a uniform, approval stamp. Include Project name and location, submittal number, Specification Section title and number, name of reviewer, date of Contractor's approval, and statement certifying that submittal has been reviewed, checked, and approved for compliance with the Contract Documents.

### **3.02 ARCHITECT'S / ACTION**

- A. General: Architect will not review submittals that do not bear Contractor's approval stamp and will return them without action.
- B. Action Submittals: Architect will review each submittal, make marks to indicate corrections or modifications required, and return it. Architect will stamp each submittal with an action stamp and will mark stamp appropriately to indicate action taken, as follows:
  1. Final Unrestricted Release: When the Architect marks a submittal "No Exceptions Taken," the Work covered by the submittal may proceed provided it complies with requirements of the Contract Documents. Final payment depends on that compliance.
  2. Final-But-Restricted Release: When the Architect marks a submittal "Exceptions As Noted," the Work covered by the submittal may proceed provided it complies with notations or corrections on the submittal and requirements of the Contract Documents. Final payment depends on that compliance.
  3. Restricted Release, Returned for Resubmittal: When the Architect marks a submittal "For Construction According to Notations, Revise and Resubmit," the Work covered by the submittal may proceed provided it complies with notations or corrections on the submittal and requirements of the Contract Documents. Final payment depends on that compliance. Revise or prepare a new submittal according to the notations; resubmit without delay. Repeat if necessary to obtain different action mark.
  4. Returned for Resubmittal: When the Architect marks a submittal "Resubmit," do not proceed with Work covered by the submittal, including purchasing, fabrication, delivery, or other activity. Revise or prepare a new submittal according to the notations; resubmit without delay. Repeat if necessary to obtain different action mark.
  5. Do not use, or allow others to use, submittals marked "Resubmit" at the Project Site or elsewhere where Work is in progress.
  6. Partial submittals are not acceptable, will be considered nonresponsive, and will be returned without review.
  7. Submittals not required by the Contract Documents may not be reviewed and may be discarded.

## **END OF SECTION**

**SECTION 01 3529.10  
LIFE SAFETY REQUIREMENTS DURING SCHOOL CONSTRUCTION**

**PART 1 GENERAL**

**1.01 BASIC REQUIREMENTS**

- A. All Construction shall comply with the New York State Education Department Commissioner's Regulations, Section 155.5 Uniform Safety Standards for School Construction and Maintenance Projects.
- B. The occupied portion of the school building shall always comply with the minimum requirements necessary to maintain a valid Certificate of Occupancy and shall be monitored during construction for safety violations by School District personnel.
- C. The areas to be disturbed by reconstruction, alteration or demolition have been tested for the presence of asbestos and lead. See Section 02 2600 for additional information.

**1.02 SAFETY AND SECURITY STANDARDS**

- A. General Safety and Security Standards for Construction Projects:
  - 1. All Construction, Reconstruction and Renovation Work shall be performed in a manner to protect the workers and public from injury. Adjoining property and structures shall be protected from damage at all times by all Contractors.
  - 2. The Contractors are to maintain clear and safe passage through the existing corridors throughout the duration of the project.
  - 3. All construction materials shall be stored in a safe and secure manner.
  - 4. Fences around construction supplies or debris shall be maintained. Gates shall always be locked unless a worker is in attendance to prevent unauthorized entry.
  - 5. During exterior renovation Work, overhead protection shall be provided for any entry/exit, sidewalks, or areas immediately beneath the Work Site and such areas shall be fenced off and provided with warning signs to prevent unauthorized entry.
  - 6. Workers shall be required to wear photo-identification badges at all times for identification and security purposes while working at the Project Site.
  - 7. Exterior Protection of Pedestrians:

| Height of Construction | Distance from Construction to Lot Line                                         | Type of Protection          |
|------------------------|--------------------------------------------------------------------------------|-----------------------------|
| 8 feet or less         | Less than 5 feet                                                               | Construct railings          |
| 8 feet or less         | 5 feet or more                                                                 | None                        |
| More than 8 feet       | Less than 5 feet                                                               | Barrier and covered walkway |
| More than 8 feet       | 5 feet or more, but no more than one-fourth the height of construction         | Barrier and covered walkway |
| More than 8 feet       | 5 feet or more, but between one-fourth and one-half the height of construction | Barrier                     |
| More than 8 feet       | 5 feet or more, but exceeding one-half the height of construction              | None                        |

- a. Barrier Design: Barriers shall be designed to resist loads required in Chapter 16 of the Building Code of New York State.
  - 8. Throughout the duration of the project, the E-Contractor (Electrical) is responsible for the maintenance and operation of the existing fire alarm and fire detection system throughout the building including areas occupied by the Owner and areas of renovation.

**1.03 SEPARATION**

- A. Separation of Construction Areas from Occupied Spaces.

1. Construction areas which are under the control of a Contractor and, therefore, not occupied by District staff or students shall be separated from occupied areas by code compliant construction.
2. Provisions shall be made to prevent the passage of dust and contaminants into occupied parts of the building. Periodic inspection and repairs of the containment barriers must be made to prevent exposure to dust or contaminants.
3. Type 'X' gypsum board on metal studs must be used in exit ways and other areas that require fire rated separation.
4. Heavy duty plastic sheeting may be used only for a vapor, fine dust or air infiltration barrier, and shall not be used to separate occupied spaces from construction areas.
5. School buildings occupied during a Construction Project shall maintain required health, safety, and educational capabilities at all times that classes are in session.
6. A specific stairwell and/or elevator shall be assigned for construction worker use during work hours. In general, construction workers may not use corridors, stairs, or elevators designated for students or school staff.
7. Large amounts of debris must be removed by using enclosed chutes or a similar sealed system. There shall be no movement of debris through halls of occupied spaces of the building. No material shall be dropped or thrown outside the walls of the building.
8. All occupied parts of the building affected by renovation activity shall be cleaned at the close of each work day utilizing hepa filtered vacuum system.

#### **1.04 VENTILATION**

- A. The existing ventilation system shall be maintained throughout the Project in occupied areas.
- B. The Contractor shall provide temporary ventilation and/or modification to existing ventilation systems as indicated in the Construction Drawings or as required by the Architect, Resident Project Representative, and Owner.

#### **1.05 EXITING**

- A. Required building exiting shall be maintained at all times so that there are no dead end conditions or corridor pockets greater than 1-1/2 times the corridor or pocket width.
- B. The Contractor shall provide temporary exits and related construction to maintain exiting capacities as required in the Construction Drawings or determined by the Architect, Resident Project Representative, and Owner.

#### **1.06 FIRE AND HAZARD PREVENTION**

- A. Areas of buildings under construction that are to remain occupied shall maintain a Certificate of Occupancy. In addition, all requirements itemized on the Fire Safety Inspection Report shall be in compliance during periods of student or staff occupancy, the following shall be strictly enforced.
  1. NO SMOKING IS ALLOWED ON PUBLIC SCHOOL PROPERTY, INCLUDING CONSTRUCTION AREAS.
  2. During construction daily inspections of District occupied areas shall be conducted by School District personnel to assure that construction materials, equipment, or debris do not block fire exits or emergency egress windows. The Contractor shall promptly move any or all construction debris, materials, and/or equipment as required to maintain exist passages at all times and clear during student or staff occupancy.
  3. Proper operation of fire extinguishers, fire alarm, and smoke/fire detection systems shall be maintained throughout the duration of the Project.

#### **1.07 NOISE ABATEMENT**

- A. Construction activities and operations shall not produce noise in excess of 60 dba in occupied spaces. If noise levels in occupied classroom spaces exceed 60 dba the Contractor shall provide acoustical abatement procedures or schedule activities during unoccupied times. Each Contractor is advised that the School District may schedule "no work" periods during the Project.

## 1.08 HAZARD CONTROL

- A. The Contractor shall take every precaution to eliminate the potential of construction fumes entering the occupied building. The Contractor shall take care to assure fresh air intakes do not draw construction related fumes into the building.
  - 1. The contractor shall be responsible for the control of chemical fumes, gases, and other contaminants produced by welding, gasoline or diesel engines, roofing, paving, painting, etc. to ensure they do not enter occupied portions of the building or air intakes.
- B. The Contractor shall provide for "off-gassing" of volatile organic compounds introduced during construction before occupancy. Specific attention is warranted for activities including glues, paint, furniture, carpeting, wall coverings, and drapery. Manufacturers shall be contacted to obtain information regarding appropriate temperatures and times needed to cure or ventilate the product during use and before safe occupancy of a space can be assured. Building materials or furnishings which "off-gas" chemical fumes, gases, or other contaminants shall be aired out in a well-ventilated heated warehouse before it is brought to the Project Site for installation or the manufacturer's recommended "off-gassing" periods must be scheduled between installation and use of the space. If the Work will generate toxic gases that cannot be contained in an isolated area, the Work must be done when school classes and programs are not in session. The Work Areas must be properly ventilated and the material must be given proper time to cure or "off gas" before re-occupancy.
- C. The Contractor shall maintain the Manufacturer's Material Safety Data Sheets (MSDS) at the site for all products used in the project. MSDS shall be provided to the School District when requested. MSDS indicate chemicals used in the product, product toxicity, typical side effects of exposure to the product, and safe procedures for use of the product.
- D. Asbestos abatement protocols. All asbestos abatement projects shall comply with all applicable federal and State laws including but not limited to the New York State Department of Labor industrial code rule 56(12 NYCRR 56), and the Federal Asbestos Hazard Emergency Response Act(AHERA),40 CFR Part 763 (Code of Federal Regulations, 1998 Edition, Superintendent of Public Documents, U.S. Government Printing Office, Washington, DC 20402; 1998).
  - 1. Large and small asbestos abatement projects as defined by 12NYCRR56 shall not be performed while the building is occupied." Note, It is the State Education Department's current interpretation that the term "building", as referenced in this section, means a wing or major section of a building that can be completely isolated from the rest of the building with sealed non combustible construction. The isolated portion of the building must contain potential contaminants which do not pass through the occupied portion and ventilation systems and must be physically separated and sealed at the isolation barrier.
  - 2. Exterior work such as roofing, flashing, siding, or soffit work may be performed on occupied buildings provided proper variances are in place as required, and complete isolation of ventilation systems and at windows is provided. Care must be taken to schedule work so that classes are not disrupted by noise or visual distraction.
  - 3. Reference Sections 02 6200 Asbestos, Lead and Pcb Assessment and 02 8213 Asbestos Abatement for additional information.
- E. Asbestos Abatement Protocols. If, in the event unknown, unsuspected asbestos containing materials are discovered in a friable state, or disturbed, or required to be removed to safely accommodate required construction, notify the Architect, Resident Project Representative, and Owner immediately.
- F. Lead paint. Any construction or maintenance operations which will disturb lead based paint will require abatement of those areas pursuant to protocols detailed in the "Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing" (June 1995; U.S. Department of Housing and Urban Development, 451 7th Street SW, Washington, D.C. 20410 (202)401-0388; available at the Department of Housing and Urban Renewal web site; [www.hud.gov/lea/leadwnlo.html](http://www.hud.gov/lea/leadwnlo.html)). All areas scheduled for construction as well as areas of flaking and peeling paint shall be tested for the presence of lead and abated or encapsulated in

accordance with the above noted guidelines. EPA Certified Lead Risk Assessor must perform analysis and an EPA Certified Lead Supervisor whom is also a New York State licensed Architect or Engineer shall prepare the Lead Hazard Control Plan.

1. Reference Sections 02 6200 Asbestos, Lead and Pcb Assessment for additional information.

- G. Lead Paint. All existing painted surfaces identified as lead containing will require control and clean-up pursuant to protocols detailed in the "Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing" (June 1995; U.S. Department of Housing and Urban Development, 451 7th Street SW, Washington, D.C. 20410 (202) 401-0388; available at the Department of Housing and Urban Renewal web site; [www.hud.gov/lea/leadwnlo.html](http://www.hud.gov/lea/leadwnlo.html)). All areas scheduled for construction as well as areas of flaking and peeling paint shall be tested for the presence of lead and abated or encapsulated in accordance with the above noted guidelines. EPA Certified Lead Risk Assessor must perform analysis.

#### **1.09 POST CONSTRUCTION INSPECTION**

- A. Each Contractor is advised that the School District shall be provided the opportunity for a walk-through inspection by the School District's Health and Safety Committee members to confirm building safety during construction and that the area is ready to be re-opened for occupancy.

**PART 2 PRODUCTS - NOT USED.**

**PART 3 EXECUTION - NOT USED.**

**END OF SECTION**

**SECTION 01 3553  
SECURITY PROCEDURES**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

**1.02 RELATED REQUIREMENTS**

- A. Section 01 1000 - Summary: use of premises and occupancy.
- B. Section 01 5000 - Temporary Facilities and Controls: Temporary lighting.

**1.03 SECURITY PROGRAM**

- A. Protect Work , existing premises and Owner's operations from theft, vandalism, and unauthorized entry.
- B. Initiate program in coordination with Owner's existing security system at project mobilization.
- C. Maintain program throughout construction period until Owner acceptance precludes the need for Contractor security.

**1.04 ENTRY CONTROL**

- A. Restrict entrance of persons and vehicles into Project site and existing facilities.
- B. Allow entrance only to authorized persons with proper identification.
- C. Maintain log of workers and visitors, make available to Owner on request.

**1.05 PERSONNEL IDENTIFICATION**

- A. Provide identification badge to each person authorized to enter premises.
- B. Badge To Include: Personal photograph, name , expiration date and employer.
- C. Maintain a list of accredited persons, submit copy to Owner on request.
- D. Require return of badges at expiration of their employment on the Work.

**PART 2 PRODUCTS - NOT USED**

**PART 3 EXECUTION - NOT USED**

**END OF SECTION**

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**SECTION 01 4000  
QUALITY REQUIREMENTS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Submittals.
- B. Quality assurance.
- C. Testing and inspection agencies and services.
- D. Contractor's design-related professional design services.
- E. Control of installation.
- F. Mock-ups.
- G. Tolerances.

**1.02 RELATED REQUIREMENTS**

- A. Section 01 3000 - Administrative Requirements: Submittal procedures.
- B. Section 01 6000 - Product Requirements: Requirements for material and product quality.

**1.03 DEFINITIONS**

- A. Contractor's Professional Design Services: Design of some aspect or portion of the project by party other than the design professional of record. Provide these services as part of the Contract for Construction.
  - 1. Design Services Types Required:

**1.04 CONTRACTOR'S DESIGN-RELATED PROFESSIONAL DESIGN SERVICES**

- A. Coordination: Contractor's professional design services are subject to requirements of project's Conditions for Construction Contract.
- B. Base design on performance and/or design criteria indicated in individual specification sections.
- C. Scope of Contractor's Professional Design Services: Provide for the following items of work:
  - 1. Structural Design: Include physical characteristics, engineering calculations, and resulting dimensional limitations as described in Section 08 4313 - Aluminum-Framed Storefronts.
  - 2. Structural Design: Include calculations for resisting wind loads, physical characteristics, resulting dimensional limitations as described in Section 08 4500 - Translucent Wall and Roof Assemblies.
  - 3. Design of Structural Components: As described in Section 14 2400 - Hydraulic Elevators.
  - 4. Sprinkler Layout: Coordinate with ceiling installation, detailed pipe layout, and hydraulic calculations as described in Section 21 1300 - Fire-Suppression Sprinkler Systems.
  - 5. Design of Structural Fill: As described in Section 31 2323 - Fill.
  - 6. Design of Geofoam Fill: As described in Section 31 2323.43 - Geofoam.

**1.05 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Test Reports: After each test/inspection, promptly submit two copies of report to Architect and to Contractor.
  - 1. Include:
    - a. Date issued.
    - b. Project title and number.
    - c. Name of inspector.
    - d. Date and time of sampling or inspection.
    - e. Identification of product and specifications section.
    - f. Location in the Project.
    - g. Type of test/inspection.
    - h. Date of test/inspection.

- i. Results of test/inspection.
  - j. Compliance with Contract Documents.
  - k. When requested by Architect, provide interpretation of results.
- 2. Test report submittals are for Architect's knowledge as contract administrator for the limited purpose of assessing compliance with information given and the design concept expressed in the Contract Documents, or for Owner's information.
- C. Manufacturer's Field Reports: Submit reports for Architect's benefit as contract administrator or for Owner.
  - 1. Submit for information for the limited purpose of assessing compliance with information given and the design concept expressed in the Contract Documents.

## **1.06 QUALITY ASSURANCE**

- A. Designer Qualifications: Where professional engineering design services and design data submittals are specifically required of Contractor by Contract Documents, provide services of a Professional Engineer experienced in design of this type of work and licensed in the State in which the Project is located.

## **1.07 REFERENCES AND STANDARDS**

- A. For products and workmanship specified by reference to a document or documents not included in the Project Manual, also referred to as reference standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- B. Comply with reference standard of date of issue current on date of Contract Documents, except where a specific date is established by applicable code.
- C. Neither the contractual relationships, duties, or responsibilities of the parties in Contract nor those of Architect shall be altered from Contract Documents by mention or inference otherwise in any reference document.

## **1.08 TESTING AND INSPECTION AGENCIES AND SERVICES**

- A. Owner will employ and pay for services of an independent testing agency to perform other specified testing.
- B. Employment of agency in no way relieves Contractor of obligation to perform Work in accordance with requirements of Contract Documents.

## **PART 3 EXECUTION**

### **2.01 CONTROL OF INSTALLATION**

- A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce work of specified quality.
- B. Comply with manufacturers' instructions, including each step in sequence.
- C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Architect before proceeding.
- D. Comply with specified standards as minimum quality for the work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Have work performed by persons qualified to produce required and specified quality.
- F. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.
- G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, and disfigurement.

### **2.02 MOCK-UPS**

- A. Before installing portions of the Work where mock-ups are required, construct mock-ups in location and size indicated for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work. The purpose of

mock-up is to demonstrate the proposed range of aesthetic effects and workmanship.

- B. Accepted mock-ups establish the standard of quality the Architect will use to judge the Work.
- C. Provide supervisory personnel who will oversee mock-up construction. Provide workers that will be employed during the construction at Project.
- D. Tests shall be performed under provisions identified in this section and identified in the respective product specification sections.
- E. Assemble and erect specified items with specified attachment and anchorage devices, flashings, seals, and finishes.
- F. Where mock-up has been accepted by Architect and is specified in product specification sections to be removed, protect mock-up throughout construction, remove mock-up and clear area when directed to do so by Architect.

### **2.03 TOLERANCES**

- A. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.
- B. Comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from Architect before proceeding.
- C. Adjust products to appropriate dimensions; position before securing products in place.

### **2.04 TESTING AND INSPECTION**

- A. See individual specification sections for testing and inspection required.
- B. Testing Agency Duties:
  - 1. Test samples of mixes submitted by Contractor.
  - 2. Provide qualified personnel at site. Cooperate with Architect and Contractor in performance of services.
  - 3. Perform specified sampling and testing of products in accordance with specified standards.
  - 4. Ascertain compliance of materials and mixes with requirements of Contract Documents.
  - 5. Promptly notify Architect and Contractor of observed irregularities or non-compliance of Work or products.
  - 6. Perform additional tests and inspections required by Architect.
  - 7. Submit reports of all tests/inspections specified.
- C. Limits on Testing/Inspection Agency Authority:
  - 1. Agency may not release, revoke, alter, or enlarge on requirements of Contract Documents.
  - 2. Agency may not approve or accept any portion of the Work.
  - 3. Agency may not assume any duties of Contractor.
  - 4. Agency has no authority to stop the Work.
- D. Contractor Responsibilities:
  - 1. Deliver to agency at designated location, adequate samples of materials proposed to be used that require testing, along with proposed mix designs.
  - 2. Cooperate with laboratory personnel, and provide access to the Work and to manufacturers' facilities.
  - 3. Provide incidental labor and facilities:
    - a. To provide access to Work to be tested/inspected.
    - b. To obtain and handle samples at the site or at source of Products to be tested/inspected.
    - c. To facilitate tests/inspections.
    - d. To provide storage and curing of test samples.
  - 4. Notify Architect and laboratory 24 hours prior to expected time for operations requiring testing/inspection services.
  - 5. Employ services of an independent qualified testing laboratory and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.

- 6. Arrange with Owner's agency and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.
- E. Re-testing required because of non-compliance with specified requirements shall be performed by the same agency on instructions by Architect.
- F. Re-testing required because of non-compliance with specified requirements shall be paid for by Contractor.

#### **2.05 DEFECT ASSESSMENT**

- A. Replace Work or portions of the Work not complying with specified requirements.
- B. If, in the opinion of Architect, it is not practical to remove and replace the work, Architect will direct an appropriate remedy or adjust payment.

**END OF SECTION**

**SECTION 01 4533  
CODE-REQUIRED SPECIAL INSPECTIONS AND PROCEDURES**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Code-required special inspections.
- B. Testing services incidental to special inspections.
- C. Submittals.
- D. Manufacturers' field services.
- E. Fabricators' field services.

**1.02 RELATED REQUIREMENTS**

- A. Statement of Special Inspections
- B. Document 00 3100 - Available Project Information: Soil investigation data.
- C. Section 01 3000 - Administrative Requirements: Submittal procedures.
- D. Section 01 4000 - Quality Requirements.

**1.03 DEFINITIONS**

- A. Code or Building Code: 2020 Building Code of New York State (BCNYS) Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements and specifically, Chapter 17 - Special Inspections and Tests.
- B. Authority Having Jurisdiction (AHJ): Agency or individual officially empowered to enforce the building, fire and life safety code requirements of the permitting jurisdiction in which the Project is located.
- C. Special Inspection:
  - 1. Special inspections are inspections and testing of materials, installation, fabrication, erection or placement of components and connections mandated by the AHJ that also require special expertise to ensure compliance with the approved Contract Documents and the referenced standards.
  - 2. Special inspections are separate from and independent of tests and inspections conducted by Owner or Contractor for the purposes of quality assurance and contract administration.

**1.04 REFERENCE STANDARDS**

- A. ACI 318 - Building Code Requirements for Structural Concrete 2019, with Errata (2021).
- B. AISC 360 - Specification for Structural Steel Buildings 2016 (Revised 2021).
- C. ASCE 7 - Minimum Design Loads and Associated Criteria for Buildings and Other Structures Most Recent Edition Cited by Referring Code or Reference Standard.
- D. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement 2020.
- E. ASTM C31/C31M - Standard Practice for Making and Curing Concrete Test Specimens in the Field 2021a.
- F. ASTM C172/C172M - Standard Practice for Sampling Freshly Mixed Concrete 2017.
- G. ASTM D3740 - Standard Practice for Minimum Requirements for Agencies Engaged in Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction 2019.
- H. ASTM E329 - Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection 2021.
- I. ASTM E543 - Standard Specification for Agencies Performing Nondestructive Testing 2021.
- J. ASTM E2174 - Standard Practice for On-Site Inspection of Installed Firestop Systems 2020a.

- K. ASTM E2393 - Standard Practice for On-Site Inspection of Installed Fire Resistive Joint Systems and Perimeter Fire Barriers 2020a.
- L. AWS D1.1/D1.1M - Structural Welding Code - Steel 2020, with Errata (2021).
- M. AWS D1.3/D1.3M - Structural Welding Code - Sheet Steel 2018.
- N. AWS D1.4/D1.4M - Structural Welding Code - Steel Reinforcing Bars 2018, with Amendment.
- O. IAS AC89 - Accreditation Criteria for Testing Laboratories 2020.
- P. IAS AC291 - Accreditation Criteria for Special Inspection Agencies AC291 2019.
- Q. ICC (IBC) - International Building Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- R. SDI (QA/QC) - Standard for Quality Control and Quality Assurance for Installation of Steel Deck 2017.
- S. SJI 100 - Standard Specifications for K-Series, LH-Series, and DLH-Series Open Web Steel Joists, and for Joist Girders 2020.
- T. TMS 402/602 - Building Code Requirements and Specification for Masonry Structures 2016.

#### **1.05 SPECIAL INSPECTOR/TESTING AGENCY QUALIFICATIONS**

- A. The approved Special Inspector/Testing Agency shall be objective and competent to complete the work of this section and shall complete the work in accordance with the Building Code of New York State.
- B. The approved Special Inspector/Testing Agency shall disclose any and all possible conflicts of interest that may affect objectivity.
- C. The approved Special Inspector/Testing Agency shall have adequate equipment to perform the required testing of this section.
- D. The approved Special Inspector/Testing Agency shall employ experienced personnel trained and educated in conducting, supervising and evaluating tests and/or inspections. The Testing Agency shall employ a full time licensed Professional Engineer on staff who shall certify all test reports. The Engineer shall be in responsible charge of the field and laboratory testing operations.
- E. The approved Special Inspector/Testing Agency shall comply with ASTM E-329
- F. The approved Special Inspector/Testing Agency shall submit to the Design Professional in Responsible Charge and Code Enforcement Officer the aforementioned information prior to the commencement of inspection activities. In addition, the Special Inspector shall identify the full time New York State Licensed Professional Engineer who shall be responsible for the Special Inspections and quality assurance testing.
- G. Special Inspections and Structural Testing shall be performed by inspectors who are either licensed Professional Engineers (P.E.), Structural Engineers (S.E.) or Intern Engineers (I.E.)
- H. Key for Minimum Qualifications of Inspection Agents:
  - 1. American Concrete Institute (ACI) Certification
    - a. ACI-CFTT Concrete Field Testing Technician – Grade 1
    - b. ACI-CCI Concrete Construction Inspector
    - c. ACI-LTT Laboratory Testing Technician – Grade 1&2
    - d. ACI-STT Strength Testing Technician
  - 2. American Welding Society (AWS) Certification
    - a. AWS-CWI Certified Welding Inspector
    - b. AWS/AISC-SSI Certified Structural Steel Inspector
  - 3. American Society of Non-Destructive Testing (ASNT) Certification
    - a. ASNT Non-Destructive Testing Technician – Level II or III.
  - 4. International Code Council (ICC) Certification
    - a. ICC-SMSI Structural Masonry Special Inspector

- b. ICC-SWSI Structural Steel and Welding Special Inspector
- c. ICC-SFSI Spray-Applied Fireproofing Special Inspector
- d. ICC-PCSI Prestressed Concrete Special Inspector
- e. ICC-RCSI Reinforced Concrete Special Inspector
- 5. National Institute for Certification in Engineering Technologies (NICET)
  - a. NICET-CT Concrete Technician – Levels I, II, III & IV
  - b. NICET-ST Soils Technician - Levels I, II, III & IV
  - c. NICET-GET Geotechnical Engineering Technician - Levels I, II, III & IV
- 6. Exterior Design Institute (EDI) Certification
  - a. EDI-EIFS EIFS Third Party Inspector

#### **1.06 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Special Inspection Agency Qualifications: Prior to the start of work, the Special Inspection Agency is required to:
  - 1. Submit agency name, address, and telephone number, names of full time registered Engineer and responsible officer.
  - 2. Submit copy of report of laboratory facilities inspection made by NIST Construction Materials Reference Laboratory during most recent inspection, with memorandum of remedies of any deficiencies reported by the inspection.
  - 3. Submit certification that Special Inspection Agency is acceptable to AHJ.
- C. Testing Agency Qualifications: Prior to the start of work, the Testing Agency is required to:
  - 1. Submit agency name, address, and telephone number, and names of full time registered Engineer and responsible officer.
  - 2. Submit copy of report of laboratory facilities inspection made by NIST Construction Materials Reference Laboratory during most recent inspection, with memorandum of remedies of any deficiencies reported by the inspection.
  - 3. Submit certification that Testing Agency is acceptable to AHJ.
- D. Smoke Control Testing Agency Qualifications: Prior to the start of work, the Testing Agency is required to:
  - 1. Submit agency name, address, and telephone number, and names of full time registered Engineer and responsible officer.
  - 2. Submit documentary evidence that agency has appropriate credentials and documented experience in fire protection engineering, mechanical engineering and HVAC air balancing.
  - 3. Submit certification that Testing Agency is acceptable to AHJ.
- E. Manufacturer's Qualification Statement: Manufacturer is required to submit documentation of manufacturing capability and quality control procedures. Include documentation of AHJ approval.
- F. Fabricator's Qualification Statement: Fabricator is required to submit documentation of fabrication facilities and methods as well as quality control procedures. Include documentation of AHJ approval.
- G. Special Inspection Reports: After each special inspection, Special Inspector is required to promptly submit at least two copies of report; one to Architect and one to the AHJ.
  - 1. Include:
    - a. Date issued.
    - b. Project title and number.
    - c. Name of Special Inspector.
    - d. Date and time of special inspection.
    - e. Identification of product and specifications section.
    - f. Location in the Project.
    - g. Type of special inspection.

- h. Date of special inspection.
    - i. Results of special inspection.
    - j. Compliance with Contract Documents.
  - 2. Final Special Inspection Report: Document special inspections and correction of discrepancies prior to the start of the work.
- H. Fabricator Special Inspection Reports: After each special inspection of fabricated items at the Fabricator's facility, Special Inspector is required to promptly submit at least two copies of report; one to Architect and one to AHJ.
  - 1. Include:
    - a. Date issued.
    - b. Project title and number.
    - c. Name of Special Inspector.
    - d. Date and time of special inspection.
    - e. Identification of fabricated item and specification section.
    - f. Location in the Project.
    - g. Results of special inspection.
    - h. Verification of fabrication and quality control procedures.
    - i. Compliance with Contract Documents.
    - j. Compliance with referenced standard(s).
- I. Test Reports: After each test or inspection, promptly submit at least two copies of report; one to Architect and one to AHJ.
  - 1. Include:
    - a. Date issued.
    - b. Project title and number.
    - c. Name of inspector.
    - d. Date and time of sampling or inspection.
    - e. Identification of product and specifications section.
    - f. Location in the Project.
    - g. Type of test or inspection.
    - h. Date of test or inspection.
    - i. Results of test or inspection.
    - j. Compliance with Contract Documents.
- J. Certificates: When specified in individual special inspection requirements, Special Inspector shall submit certification by the manufacturer, fabricator, and installation subcontractor to Architect and AHJ, in quantities specified for Product Data.
  - 1. Indicate material or product complies with or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
  - 2. Certificates may be recent or previous test results on material or product, but must be acceptable to Architect and AHJ.

#### **1.07 SPECIAL INSPECTION AGENCY**

- A. Owner or Architect will employ services of a Special Inspection Agency to perform inspections and associated testing and sampling in accordance with ASTM E329 and required by the building code.
- B. The Special Inspection Agency may employ and pay for services of an independent testing agency to perform testing and sampling associated with special inspections and required by the building code.
- C. Employment of agency in no way relieves Contractor of obligation to perform work in accordance with requirements of Contract Documents.
- D. TESTING AND INSPECTION AGENCIES
- E. QUALITY ASSURANCE
  - 1. Special Inspection Agency Qualifications:



- a. Independent firm specializing in performing testing and inspections of the type specified in this section.
  - b. Accredited by IAS according to IAS AC291.
2. Testing Agency Qualifications:
  - a. Independent firm specializing in performing testing and inspections of the type specified in this section.
  - b. Accredited by IAS according to IAS AC89.
3. Copies of Documents at Project Site: Maintain at the project site a copy of each referenced document.

## **1.08 RESPONSIBILITIES OF PARTIES**

- A. Responsibility of the Owner:
  1. The Owner shall employ and pay the fees for services of the third party Special Inspector and Testing Agency to perform testing and inspections as described herein and in the specification.
  2. If the specific material or installation is determined to be in non-conformance with the Contract Documents, the Contractor shall assume the cost of any and all additional test/inspections required to establish conformance or non-conformance.
- B. Responsibilities of the Design Professional in Responsible Charge:
  1. The Design Professional in Responsible Charge shall prepare the Special Inspections Program. Special Inspections program shall list all items for which a special inspection is required.
  2. The Design Professional in Responsible Charge shall respond to field discrepancies.
- C. Responsibilities of the Contractor:
  1. The Contractor shall submit their steel subcontractor's quality control manual for review and approval.
  2. The Contractor shall be responsible for notifying the Special Inspector regarding individual inspections indicated in the Statement of Special Inspections & Tests. The Contractor shall provide a minimum of 24-hour notice to the Design Professional of Responsible Charge and the Testing Agency.
  3. The Contractor shall cooperate with testing agency/special inspection personnel.
  4. The Contractor shall provide access to testing agency and deliver agency representative to designated location of work.
  5. Provide access to the approved construction documents.
  6. Provide adequate samples of materials proposed to be used.
  7. Provide proposed mix designs.
  8. Provide Mill Certificates and Mill Reports.
  9. Provide incidental labor and facilities to obtain and handle samples at the site or at source of products to be tested/inspected.
  10. Provide incidental labor and facilities to facilitate testing/inspections.
  11. Provide incidental labor and facilities to provide storage and curing of test samples.
  12. Arrange with testing agency and pay for additional testing/inspections required by the contractor beyond the requirements of the Contract Documents.
  13. The same testing agency/special inspector shall perform re-testing/re-inspection required as a result of non-conformance with the Contract Documents. Payment for re-testing/re-inspection shall be charged to the Contractor by deducting testing charges from the Contract Price through a contract change order.
- D. Responsibilities of the Special Inspector/Testing Agency:
  1. The testing agency/special inspector shall notify the Resident Project Representative and the Contractor of their presence and responsibilities on site.
  2. Observe and inspect all work for which they are responsible for special inspection and testing for conformance with the Contract Documents.
  3. Report non-conforming items to the immediate attention of the Contractor, Resident Project Representative and Design Professional in Responsible Charge.

4. If any non-conformance is not resolved in a timely manner or is about to be incorporated into the work, the Design Professional in Responsible Charge and the Code Enforcement Officer shall be notified immediately. Non-conformance shall be noted in the Special Inspector's written report.
5. The Special Inspector shall provide a separate report for noted discrepancies. A copy of this report shall be provided to the Design Professional, the Code Enforcement Officer and shall be posted on the project site. The report shall include:
  - a. Description and exact location of discrepancy.
  - b. Reference to applicable contract drawing, details, and specifications.
  - c. Resolution or corrective action taken and the date.
6. Provide written report for each site visit. Provide reports directly to Code Enforcement Officer and Design Professional in Responsible Charge.
7. Prepare and submit final report. The Special Inspector's final report shall be a signed report to the Code Enforcement Officer with a copy forwarded to the Design Professional in Responsible Charge. The Special Inspector's final report shall state all items requiring Special Inspection and testing. The Special Inspector shall state that Special Inspection and testing was fulfilled and reported and, to the best of the Special Inspector's knowledge, in conformance with the approved plans and specifications. Any items which are not in conformance, unresolved or any discrepancies in inspection coverage shall be specifically itemized in this report.
8. Limits of Authority:
  - a. The Special Inspector/Testing Agency shall not release, revoke, alter or enlarge the scope/requirements of the Contract Documents.
  - b. The Special Inspector/Testing Agency shall not have control over the Contractor's means, methods or sequence of construction.
  - c. The Special Inspector/Testing Agency shall not be responsible for construction site safety.
  - d. The Special Inspector/Testing Agency shall have no authority to stop the work.

## **PART 2 PRODUCTS - NOT USED**

## **PART 3 EXECUTION**

### **3.01 SCHEDULE OF SPECIAL INSPECTIONS, GENERAL**

- A. FREQUENCY
- B. Frequency of Special Inspections: Special Inspections are indicated as continuous or periodic.
  1. Continuous Special Inspection: Special Inspection Agency is required to be present in the area where the work is being performed and observe the work at all times the work is in progress.
  2. Periodic Special Inspection: Special Inspection Agency is required to be present in the area where work is being performed and observe the work part-time or intermittently and at the completion of the work.

### **3.02 SPECIAL INSPECTIONS FOR STEEL CONSTRUCTION**

- A. Structural Steel: Comply with quality assurance inspection requirements of ICC (IBC) BCNYS.
- B. Cold-Formed Steel Deck: Comply with quality assurance inspection requirements of SDI (QA/QC).
- C. Open-Web Joists and Joist Girders: Comply with requirements of BCNYS, Table 1705.2.3.
  1. End Connections - Welding or Bolted: Comply with requirements of SJI 100; periodic.
  2. Bridging - Horizontal or Diagonal:
    - a. Standard Bridging: Comply with requirements of SJI 100; periodic.
    - b. Bridging That Differs From the SJI Specifications: Periodic inspection.
- D. High-Strength Bolt, Nut and Washer Material:
  1. Verify identification markings comply with ASTM standards specified in the approved contract and to AISC 360, Section A3.3; periodic.

2. Submit manufacturer's certificates of compliance; periodic.
- E. High-Strength Bolting Installation: Verify items listed below comply with AISC 360, Section M2.5.
  1. Snug tight joints; periodic.
  2. Pretensioned and slip-critical joints with matchmarking, twist-off bolt or direct tension indicator method of installation; periodic.
  3. Pretensioned and slip-critical joints without matchmarking or calibrated wrench method of installation; continuous.
- F. Structural Steel and Cold Formed Steel Deck Material:
  1. Structural Steel: Verify identification markings comply with AISC 360, Section M3.5; periodic.
  2. Other Steel: Verify identification markings comply with ASTM standards specified in the approved Contract Documents; periodic.
  3. Submit manufacturer's certificates of compliance and test reports; periodic.
- G. Weld Filler Material:
  1. Verify identification markings comply with AWS standards specified in the approved Contract Documents and to AISC 360, Section A3.5; periodic.
  2. Submit manufacturer's certificates of compliance; periodic.
- H. Welding:
  1. Structural Steel and Cold Formed Steel Deck:
    - a. Complete and Partial Joint Penetration Groove Welds: Verify compliance with AWS D1.1/D1.1M; continuous.
    - b. Multi-pass Fillet Welds: Verify compliance with AWS D1.1/D1.1M; continuous.
    - c. Single Pass Fillet Welds Less than 5/16 inch Wide: Verify compliance with AWS D1.1/D1.1M; periodic.
    - d. Plug and Slot Welds: Verify compliance with AWS D1.1/D1.1M; continuous.
    - e. Single Pass Fillet Welds 5/16 inch or Greater: Verify compliance with AWS D1.1/D1.1M; continuous.
    - f. Floor and Roof Deck Welds: Verify compliance with AWS D1.3/D1.3M; continuous.
  2. Reinforcing Steel: Verify items listed below comply with AWS D1.4/D1.4M and ACI 318, Section 3.5.2.
    - a. Verification of weldability; periodic.
    - b. Reinforcing steel resisting flexural and axial forces in intermediate and special moment frames as well as boundary elements of special structural walls of concrete and shear reinforcement; continuous.
    - c. Shear reinforcement; continuous.
    - d. Other reinforcing steel; periodic.
- I. Steel Frame Joint Details: Verify compliance with approved Contract Documents.
  1. Details, bracing and stiffening; periodic.
  2. Member locations; periodic.
  3. Application of joint details at each connection; periodic.

### **3.03 SPECIAL INSPECTIONS FOR CONCRETE CONSTRUCTION**

- A. Reinforcing Steel, Including Prestressing of Tendons and Placement: Verify compliance with approved Contract Documents and ACI 318, Sections 3.5 and 7.1 through 7.7; periodic.
- B. Reinforcing Bar Welding: Verify compliance with AWS D1.4/D1.4M and ACI 318, 26.6.4; periodic.
  1. Verify weldability of reinforcing bars other than those complying with ASTM A706/A706M; periodic.
  2. Inspect all other welds; continuous.
- C. Reinforcing Steel Welding: Verify compliance with AWS D1.4/D1.4M and ACI 318, Section 3.5.2; periodic.

- D. Anchors Cast in Concrete: Verify compliance with ACI 318, 17.8.2; periodic.
- E. Bolts Installed in Concrete: Where allowable loads have been increased or where strength design is used, verify compliance with approved Contract Documents and ACI 318, Sections 8.1.3 and 21.2.8 prior to and during placement of concrete; continuous.
- F. Design Mix: Verify plastic concrete complies with the design mix in approved Contract Documents and with ACI 318, Chapter 4 and 5.2; periodic.
- G. Specified Curing Temperature and Techniques: Verify compliance with approved Contract Documents and ACI 318, Sections 5.11 through 5.13; periodic.
- H. Concrete Strength in Situ: Verify concrete strength complies with approved Contract Documents and ACI 318, Section 6.2, for the following.
- I. Formwork Shape, Location and Dimensions: Verify compliance with approved Contract Documents and ACI 318, Section 6.1.1; periodic.

### **3.04 SPECIAL INSPECTIONS FOR MASONRY CONSTRUCTION**

- A. Verify each item below complies with approved Contract Documents and the applicable articles of TMS 402/602.
  - 1. Inspections and Approvals:
    - a. Verify compliance with the required inspection provisions of the approved Contract Documents; periodic.
    - b. Verify approval of submittals required by Contract Documents; periodic.
  - 2. Compressive Strength of Masonry: Verify compressive strength of masonry units prior to start of construction unless specifically exempted by code; periodic.
  - 3. Slump Flow and Visual Stability Index (VSI): Verify compliance as self consolidating grout arrives on site; continuous.
  - 4. Joints and Accessories: When masonry construction begins, verify:
    - a. Proportions of site prepared mortar; periodic.
    - b. Construction of mortar joints; periodic.
    - c. Location of reinforcement, connectors, prestressing tendons, anchorages, etc; periodic.
  - 5. Structural Elements, Joints, Anchors, Protection: During masonry construction, verify:
    - a. Size and location of structural elements; periodic.
    - b. Type, size and location of anchors, including anchorage of masonry to structural members, frames or other construction; periodic.
    - c. Size, grade and type of reinforcement, anchor bolts and prestressing tendons and anchorages; periodic.
    - d. Welding of reinforcing bars; continuous.
  - 6. Grouting Preparation: Prior to grouting, verify:
    - a. Grout space is clean; periodic.
    - b. Correct placement of reinforcing, connectors, prestressing tendons and anchorages; periodic.
    - c. Correctly proportioned site prepared grouts and prestressing grout for bonded tendons; periodic.
    - d. Correctly constructed mortar joints; periodic.
  - 7. Preparation of Grout Specimens, Mortar Specimens and Prisms: Observe preparation of specimens; periodic.
- B. Engineered Masonry in Buildings Designated as "Essential Facilities": Verify compliance of each item below with approved Contract Documents and the applicable articles of TMS 402/602.
  - 1. Inspections and Approvals:
    - a. Verify compliance with the required inspection provisions of the approved Contract Documents; periodic.
    - b. Verify approval of submittals required by Contract Documents; periodic.

2. Compressive Strength of Masonry: Verify compressive strength of masonry units prior to start of construction and upon completion of each 5,000 square feet increment of masonry erected during construction; periodic.
3. Preblended Mortar and Grout: Verify proportions of materials upon delivery to site; periodic.
4. Slump Flow and Visual Stability Index (VSI): Verify compliance as self consolidating grout arrives on site; continuous.
5. Engineered Elements, Joints, Anchors, Grouting, Protection: Verify compliance of each item below with approved Contract Documents and referenced standards.
  - a. Proportions of site prepared mortar; periodic.
  - b. Placement of masonry units and construction of mortar joints; periodic.
  - c. Placement of reinforcement, connectors, prestressing tendons, anchorages, etc.; periodic.
  - d. Size and location of structural elements; periodic.
  - e. Type, size and location of anchors, including anchorage of masonry to structural members, frames or other construction; continuous.
  - f. Size, grade and type of reinforcement, anchor bolts and prestressing tendons and anchorages; periodic.
  - g. Welding of reinforcing bars; continuous.
6. Preparation of Grout Specimens, Mortar Specimens and Prisms: Observe preparation of specimens; continuous.

### **3.05 SPECIAL INSPECTIONS FOR SOILS**

- A. Materials and Placement: Verify each item below complies with approved construction documents and approved geotechnical report.
  1. Design bearing capacity of material below shallow foundations; periodic.
  2. Design depth of excavations and suitability of material at bottom of excavations; periodic.
  3. Materials, densities, lift thicknesses; placement and compaction of backfill: continuous.
  4. Subgrade, prior to placement of compacted fill verify proper preparation; periodic.
- B. Testing: Classify and test excavated material; periodic.

### **3.06 SPECIAL INSPECTIONS FOR HELICAL PILE FOUNDATIONS**

- A. Materials, Equipment and Placement: Verify each item below complies with approved construction documents and approved geotechnical report.
  1. Type and capacity of installation equipment used; continuous.
  2. Pile dimensions; continuous.
  3. Tip elevation; continuous.
  4. Final depth; continuous.
  5. Final installation torque; continuous.
  6. Other installation data requested in writing by Architect; continuous.

### **3.07 SPECIAL INSPECTIONS FOR VERTICAL MASONRY FOUNDATION ELEMENTS**

- A. Vertical Masonry Foundation Elements are subject to the same special inspection requirements listed in the "Special Inspections for Masonry Construction" Article of this section.

### **3.08 SPECIAL INSPECTIONS FOR FIRE RESISTANT PENETRATIONS AND JOINTS**

- A. Verify penetration firestops in accordance with ASTM E2174.
- B. Verify fire resistant joints in accordance with ASTM E2393.

### **3.09 SPECIAL INSPECTIONS FOR SMOKE CONTROL**

- A. Test smoke control systems as follows:
  1. Record device locations and test system for leakage after erection of ductwork but before starting construction that conceals or blocks access to system.
  2. Test and record pressure difference, flow measurements, detection function and controls after system is complete and before structure is occupied.

### **3.10 OTHER SPECIAL INSPECTIONS**

- A. Provide for special inspection of work for the following:
  - 1. Including mortar
  - 2. Fuel oil tank remediation.

### **3.11 SPECIAL INSPECTION AGENCY DUTIES AND RESPONSIBILITIES**

- A. Special Inspection Agency shall:
  - 1. Verify samples submitted by Contractor comply with the referenced standards and the approved Contract Documents.
  - 2. Provide qualified personnel at site. Cooperate with Architect and Contractor in performance of services.
  - 3. Perform specified sampling and testing of products in accordance with specified reference standards.
  - 4. Ascertain compliance of materials and products with requirements of Contract Documents.
  - 5. Promptly notify Architect and Contractor of observed irregularities or non-compliance of work or products.
  - 6. Perform additional tests and inspections required by Architect.
  - 7. Attend pre-construction meetings and progress meetings.
  - 8. Submit reports of all tests or inspections specified.
- B. Limits on Special Inspection Agency Authority:
  - 1. Agency may not release, revoke, alter, or enlarge on requirements of Contract Documents.
  - 2. Agency may not approve or accept any portion of the work.
  - 3. Agency may not assume any duties of Contractor.
  - 4. Agency has no authority to stop the work.
- C. Re-testing required because of non-compliance with specified requirements shall be performed by the same agency on instructions by Architect.
- D. Re-testing required because of non-compliance with specified requirements shall be paid for by Contractor.

### **3.12 TESTING AGENCY DUTIES AND RESPONSIBILITIES**

- A. Testing Agency Duties:
  - 1. Provide qualified personnel at site. Cooperate with Architect and Contractor in performance of services.
  - 2. Perform specified sampling and testing of products in accordance with specified standards.
  - 3. Ascertain compliance of materials and mixes with requirements of Contract Documents.
  - 4. Promptly notify Architect and Contractor of observed irregularities or non-compliance of work or products.
  - 5. Perform additional tests and inspections required by Architect.
  - 6. Submit reports of all tests or inspections specified.
- B. Limits on Testing or Inspection Agency Authority:
  - 1. Agency may not release, revoke, alter, or enlarge on requirements of Contract Documents.
  - 2. Agency may not approve or accept any portion of the work.
  - 3. Agency may not assume any duties of Contractor.
  - 4. Agency has no authority to stop the work.
- C. On instructions by Architect, perform re-testing required because of non-compliance with specified requirements, using the same agency.
- D. Contractor will pay for re-testing required because of non-compliance with specified requirements.

### **3.13 CONTRACTOR DUTIES AND RESPONSIBILITIES**

- A. Contractor Responsibilities, General:
  - 1. Deliver to agency at designated location, adequate samples of materials for special inspections that require material verification.
  - 2. Cooperate with agency and laboratory personnel; provide access to approved documents at project site, to the work, to manufacturers' facilities, and to fabricators' facilities.
  - 3. Provide incidental labor and facilities:
    - a. To provide access to work to be tested or inspected.
    - b. To obtain and handle samples at the site or at source of Products to be tested or inspected.
    - c. To facilitate tests or inspections.
    - d. To provide storage and curing of test samples.
  - 4. Notify Architect and laboratory 24 hours prior to expected time for operations requiring testing or inspection services.
  - 5. Arrange with Owner's agency and pay for additional samples, tests, and inspections required by Contractor beyond specified requirements.
  - 6. Retain special inspection records.

**END OF SECTION**

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**SECTION 01 50 00 - TEMPORARY FACILITIES & CONTROLS****PART 1 - GENERAL****1.1 SUMMARY**

- A. This Section includes requirements for temporary facilities and controls, including temporary utilities, support facilities, and security and protection.
- B. Temporary utilities include, but are not limited to, the following:
  - 1. Water service and distribution.
  - 2. Temporary electric power and light.
  - 3. Temporary heat.
  - 4. Ventilation.
  - 5. Telephone service.
  - 6. Sanitary facilities, including drinking water.
  - 7. Storm and sanitary sewer.
- C. Support facilities include, but are not limited to, the following:
  - 1. Field offices and storage sheds.
  - 2. Architects/Engineers field office.
  - 3. Temporary roads and paving.
  - 4. Dewatering facilities and drains.
  - 5. Temporary enclosures.
  - 6. Hoists and temporary elevator use.
  - 7. Temporary project identification signs and bulletin boards.
  - 8. Waste disposal services.
  - 9. Rodent and pest control.
  - 10. Construction aids and miscellaneous services and facilities.
- D. Security and protection facilities include, but are not limited to, the following:
  - 1. Temporary fire protection.
  - 2. Barricades, warning signs, and lights.
  - 3. Environmental protection.
  - 4. Tree and plant protection.
  - 5. Pest control.
  - 6. Security enclosure and lockup.
  - 7. Temporary enclosures.
  - 8. Temporary partitions.

**1.2 DIVISION OF RESPONSIBILITIES**

- A. General: Each prime contractor is specifically assigned certain responsibilities for temporary services and facilities to be used by other prime contractors, and other nonprime contractors and separate entities at the site, Owner's workforces, Construction Manager, Architect, testing agencies, personnel of governing authorities, and personnel authorized to be at project site during contract time. The General Construction Work Contractor is responsible for providing temporary facilities and controls that are not normal construction activities of other prime contractors and are not specifically assigned otherwise by the Contract Documents.

### 1.3 USE CHARGES

- A. General: Cost or use charges for temporary facilities are not chargeable to the Owner, Architect or Construction Manager. The Architect will not accept a prime contractor's cost or use charges for temporary services or facilities as a basis of claim for an adjustment in the Contract Sum or the Contract Time.
- B. Water Service: Use water from the Owner's existing water system without metering and without payment of use charges. Access to water shall be coordinated through the Construction Manager and designated by the owner.
- C. Electric Power Service: Temporary electric power including set-up, maintenance and use charges is the responsibility of the Electrical Work Contractor (Contract #4).
  - 1. Use of electric power from the Owner's permanent power system (when operational) will be granted to all prime contractors without payment of use charges.
- D. Temporary Heating, Cooling, and Ventilation for the Building: The General Construction Work Contractor(s) is/are responsible for temporary building heating, cooling, and ventilation, in their contract work area(s) and shall pay for all utility use charges. Electric heat may not be used. See milestone schedule for temporary heat duration to be used for bidding purposes. Any damage to the facility due to lack of heat will be borne by the General Contractor.

### 1.4 SUBMITTALS

- A. Temporary Utilities: The prime contractor shall submit reports of tests, inspections, meter readings, and similar procedures performed on temporary utilities.
- B. Implementation and Termination Schedule: Within 15 days of the date established for submittal of the Contractor's Construction Schedule, each prime contractor shall submit a schedule indicating implementation and termination of each temporary utility for which the Contractor is responsible.
- C. Temporary Signage: Provide shop drawings, indicating the size and layout of the signs, color choices for Owner selection and installation details.

### 1.5 QUALITY ASSURANCE

- A. Regulations: The prime contractor shall comply with industry standards and with applicable laws and regulations of authorities having jurisdiction including, but not limited to, the following:
  - 1. Building code requirements.
  - 2. Health and safety regulations.
  - 3. Utility company regulations.
  - 4. Police, fire department and rescue squad rules.
  - 5. Environmental protection regulations.
- B. Standards: The prime contractor shall comply with NFPA 241 "Standard for Safeguarding Construction, Alterations, and Demolition Operations," ANSI-A10 Series standards for "Safety Requirements for Construction and Demolition," and NECA Electrical Design Library "Temporary Electrical Facilities."
  - 1. Trade Jurisdictions: Assigned responsibilities for installation and operation of temporary utilities are not intended to interfere with the normal application of trade regulations and union jurisdictions.

2. Electrical Service: Comply with NEMA, NECA and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.
- C. Inspections: Arrange for authorities having jurisdiction to inspect and test each temporary utility before use. Obtain required certifications and permits.

## **1.6 PROJECT CONDITIONS**

- A. Temporary Utilities: Each prime contractor shall prepare a schedule indicating dates for implementation and termination of each temporary utility for which the Contractor is responsible. At the earliest feasible time, when acceptable to the Owner and Construction Manager, change over from use of temporary service to use of permanent service.
  1. Temporary Use of Permanent Facilities: The Installer of each permanent service shall assume responsibility for its operation, maintenance, and protection during use as a construction facility prior to the Owner's acceptance, regardless of previously assigned responsibilities.
- B. Conditions of Use: Keep temporary services and facilities clean and neat in appearance. Operate in a safe and efficient manner. Relocate temporary services and facilities as the Work progresses. Do not overload facilities or permit them to interfere with progress. Take necessary fire-prevention measures. Do not allow hazardous, dangerous, or unsanitary conditions, or public nuisances to develop or persist on-site.

## **PART 2 - PRODUCTS**

### **2.1 MATERIALS**

- A. General: The prime contractor shall provide new materials. If acceptable to the Architect, undamaged, previously used materials in serviceable condition may be used. Provide materials suitable for use intended.
- B. Lumber and Plywood: Comply with requirements in Division 6 Section "Rough Carpentry."
  1. For job-built temporary offices, shops, and sheds within the construction area, provide UL-labeled, fire-treated lumber and plywood for framing, sheathing, and siding.
  2. For signs and directory boards, provide exterior-type, Grade B-B high-density concrete form overlay plywood of sizes and thicknesses indicated.
  3. For fences and vision barriers, provide minimum 3/8-inch-thick exterior plywood.
  4. For safety barriers, sidewalk bridges, and similar uses, provide minimum 5/8-inch-thick exterior plywood.
- C. Pavement: Comply with Division 32 Pavement Sections
- D. Insulation: Unfaced mineral-fiber blanket manufactured from glass, slag wool, or rock wool; with maximum flame spread and smoke developed indices of 25 and 50, respectively.
- E. Gypsum Wallboard: Provide gypsum wallboard on interior walls of temporary offices.
- F. Roofing Materials: Provide UL Class A standard-weight asphalt shingles or UL Class C mineral-surfaced roll roofing on roofs of job-built temporary offices, shops, and sheds.
- G. Paint: Comply with requirements of Division 9 Section "Painting."
  1. For job-built temporary offices, shops, sheds, fences, and other exposed lumber and plywood, provide exterior-grade acrylic-latex emulsion over exterior primer.

2. For sign panels and applied graphics, provide exterior-grade alkyd gloss enamel over exterior primer.
  3. For interior walls of temporary offices, provide 2 coats interior latex-flat wall paint.
- H. Tarpaulins: Provide waterproof, fire-resistant, UL-labeled tarpaulins with flame-spread rating of 15 or less. For temporary enclosures, provide translucent, nylon-reinforced, laminated polyethylene or polyvinyl chloride, fire-retardant tarpaulins.
- I. Water: Provide potable water approved by local health authorities.
- J. Open-Mesh Fencing: Provide 0.12-inch- thick, galvanized 2-inch chainlink fabric fencing 8 feet high with galvanized steel pipe posts, 1-1/2 inches I.D. for line posts and 2-1/2 inches I.D. for corner posts.

## 2.2 EQUIPMENT

- A. General: Each prime contractor shall provide new equipment. If acceptable to the Architect, undamaged, previously used equipment in serviceable condition may be used. Provide equipment suitable for use intended.
- B. Water Hoses: Provide 3/4-inch heavy-duty, abrasion-resistant, flexible rubber hoses 100 feet long, with pressure rating greater than the maximum pressure of the water distribution system. Provide adjustable shutoff nozzles at hose discharge.
- C. Electrical Outlets: Provide properly configured, NEMA-polarized outlets to prevent insertion of 110- to 120-V plugs into higher voltage outlets. Provide receptacle outlets equipped with ground-fault circuit interrupters, reset button, and pilot light for connection of power tools and equipment.
- D. Electrical Power Cords: Provide grounded extension cords. Use hard-service cords where exposed to abrasion and traffic. Provide waterproof connectors to connect separate lengths of electric cords if single lengths will not reach areas where construction activities are in progress. Do not exceed safe length-voltage ratio.
- E. Lamps and Light Fixtures: Provide general service incandescent lamps of wattage required for adequate illumination. Provide guard cages or tempered-glass enclosures, where exposed to breakage. Provide exterior fixtures where exposed to moisture.
- F. Heating Units: Provide temporary heating units that have been tested and labeled by UL, FM, or another recognized trade association related to the type of fuel being consumed.
- G. Temporary Offices: Each prime contractor shall provide its own prefabricated or mobile units or similar job-built construction with lockable entrances, operable windows, and serviceable finishes. Provide heated and air-conditioned units on foundations adequate for normal loading.
- H. Temporary Toilet Units: Provide self-contained, single-occupant toilet units of the chemical, aerated recirculation, or combustion type. Provide units properly vented and fully enclosed with a glass-fiber-reinforced polyester shell or similar nonabsorbent material.
- I. Fire Extinguishers: Provide hand-carried, portable, UL-rated, Class A fire extinguishers for temporary offices and similar spaces. In other locations, provide hand-carried, portable, UL-rated, Class ABC, dry-chemical extinguishers, or a combination of extinguishers of NFPA-recommended classes for the exposures.
1. Comply with NFPA 10 and NFPA 241 for classification, extinguishing agent, and size required by location and class of fire exposure.

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## PART 3 - EXECUTION

### 3.1 TEMPORARY UTILITY INSTALLATION

- A. General: Engage the appropriate local utility company to install temporary service or connect to existing service. Where the company provides only part of the service, provide the remainder with matching, compatible materials and equipment. Comply with company recommendations.
1. Arrange with the company and existing users for a time when service can be interrupted, if necessary, to make connections for temporary services.
  2. Provide adequate capacity at each stage of construction. Prior to temporary utility availability, provide trucked-in services.
  3. Obtain easements to bring temporary utilities to the site where the Owner's easements cannot be used for that purpose.
- B. Water Service: The Plumbing Work Contractor (Contract #5) shall provide and maintain temporary water service and distribution piping of sizes and pressures adequate for construction and hose bibs on site as to provide service to all areas of construction activities as directed by the Architect, as required throughout the construction period.
1. Water service shall be potable and modified as required or as directed by the Construction Manager and Architect, as Work progressed.
    - a. Sterilization: Sterilize temporary water piping prior to use.
  2. Wash Facilities: Install wash facilities supplied with potable water at convenient locations for personnel who handle materials that require wash up. Dispose of drainage properly. Supply cleaning compounds appropriate for each type of material handled.
  3. Drinking Water Facilities: Provide bottled water drinking water units.
    - a. The Prime Contractor shall provide containerized, tap-dispenser, bottled-water drinking-water units, including paper cup supply.
  4. Provide safety showers, eyewash fountains, and similar facilities for convenience, safety, and sanitation of personnel.
  5. Users shall provide their own hoses to points of need but shall practice prudent conservation.
- C. Temporary Electric Power Service: The Electrical Work Contractor (Contract #4) shall provide and maintain temporary electric service consisting of main power hook-up and panel board and temporary lighting for site and existing building. Temporary service shall be maintained during all workdays and shall comply with all codes and regulations. System shall be modified as required or as directed by the Construction Manager as work progresses. Each Prime shall provide power distribution for its own use from EC's panel.
- Electrical service:
1. Obtain temporary service from existing building service or local power pole. If practical, power to each location shall be tapped at transformer vault or main distribution panel, ahead of main breakers to minimize demand on service equipment from operations. Over current protection shall be installed as required.
  2. Provide disconnect at connection to service.
  3. Provide service conductors and equipment.
  4. Minimum power characteristics: 240/120-volt, single phase.
  5. Provide distribution equipment, feeders, and branch circuit panelboards to serve:
    - a. Temporary lighting.

- b. Temporary convenience receptacles. (4 gang outlet boxes to allow for 50' extension cord; enough to accommodate requirements of the entire building)
    - c. To accommodate construction operations requiring power, use of power tools, electric heating and start up testing of permanent electric powered equipment prior to its permanent connection to electrical system.
  6. Each Contractor shall provide his own extension lines, and other special equipment; welding equipment shall run from generator trucks.
  7. The Electrical Work Contract (Contract #4) shall be responsible for initial connections and final demolition of all temporary fixtures and wiring at direction of the Construction Manager.
  8. Security lighting for building exteriors shall be continuously operational and maintained. Electrical Work Contract (Contract #4) to provide three (3) @ 500 Watt exterior halogen lights each **location to be determined by CM and Owner**
  9. The Electrical Work Contract (Contract #4) Contractor shall maintain OSHA standards for power and foot candle levels in all areas while workers occupy the space. The temporary lighting shall be energized daily at 6:50 A.M. to 4:35 P.M. as a minimum duration until permanent fixtures are installed.
  10. Not unlike other equipment in this contract, upon installation, the temporary electric system becomes the property of the Owner and shall not be controlled by any one contractor.
  11. Temporary Site Lighting: Electrical Work Contract (Contract #4) to maintain existing exterior Lighting to adequately light the entrances and exits of project site. Temporary lighting shall be controlled by time clocks and lighting contactors; settings to be coordinated by the Construction Manager.
  12. Each Prime Contractor will be responsible for hookup of their own project trailers to temporary electric pedestal. If abused, power from temporary service will be disconnected. The Electric Contractor shall erect poles safely sufficient for site power and telephone service. All installations shall conform to strictest standards. The Electrical Contractor shall disconnect all items upon project completion. The Electrical Contractor (Contract #4) shall provide power to the Construction Manager's project trailer as per Section 01 5213, power is to be provided within 48 hours of the project trailer being set.
- D. Temporary Lighting: When an overhead floor or roof deck has been installed, the Electrical Work Contract (Contract #4) shall provide temporary lighting with local switching.
  1. Install and operate temporary lighting that will fulfill security and protection requirements without operating the entire system. Provide temporary lighting that will provide adequate illumination for construction operations and traffic conditions.
    - a. Temporary lighting shall be maintained in accordance with OSHA standards for power and foot candle levels in all areas while workers occupy the space.
  2. Temporary lighting shall be controlled by time clocks and lighting contactors; settings to be coordinated by the Architect.
- E. Temporary Heat:

1. Upon erection of the new addition or as provided by Section 01 5100 Heat During Construction, whichever is sooner, the General Work Contractor shall provide temporary heating equipment and all fuel necessary to continue construction work at proper heated conditions in their contract work area. The means and methods shall be as field determined for specific buildings and/or areas. In no case shall temperature be less than 55°F.
  2. The General Construction Work Contractor(s) shall provide manpower for maintenance, operation and supervision for the temporary heating system, first and second shifts where applicable.
  3. The Owner will not accept utilization of permanent HVAC system for temporary heat until project acceptance.
  4. Temporary heating plants utilizing electric power as energy source, shall not be used on this project.
  5. Temporary Heating and Cooling for Isolated work area: Each prime contractor shall provide temporary heating and cooling required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of low temperatures or high humidity. Select safe equipment that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce the ambient condition required and minimize energy consumption.
  6. Use of gasoline-burning space heaters, open flame, or salamander-type heating units is prohibited.
- F. Temporary Telephones/Internet: Each Prime Contractor shall provide temporary telephone service throughout the construction period for all personnel engaged in construction activities. Each Prime Contractor shall provide internet service at their field office.
1. Contractors are required to lease or purchase a cellular telephone – to be used by their site superintendents for communication with the other primes and the Construction Manager.
  2. Provide telephone lines for the following:
    - a. Provide a dedicated telephone line for each prime contractor's field office.
    - b. At each telephone, post a list of important telephone numbers, to be shared with the Construction Manager.
- G. Sanitary Facilities: The Plumbing Work Contractor (Contract #5) shall provide temporary portable chemical toilet facilities for all construction personnel. Comply with regulations and health codes for the type, number, location, operation, and maintenance of fixtures and facilities. Install where facilities will best serve the Project's needs.
1. Provide toilet tissue, paper towels, and similar disposable materials for each facility. Provide covered waste containers for used material.
  2. Toilets: Install self-contained toilet units. Shield toilets to ensure privacy. Use of pit-type privies will not be permitted.
    - a. Provide separate facilities for male and female personnel.
    - b. Provide the Construction Managers office with facilities as per Sec, 015213
- H. Temporary Construction:
1. Temporary bridging, decks, hoists, lifts, scaffolding, and cranes shall be the responsibility of Contractor requiring same.

2. Provide temporary partitions to separate construction area from adjacent occupied student areas. Construct partitions with non-combustible materials or fire-retardant plywood and seal seams and gaps to control transmission of dust to occupied areas. After completion of work, remove partitions and restore surfaces damaged by temporary provisions. This work is the responsibility of the General Work Contractor(s).
    - a. Temporary partitions are to be constructed with 6" metal track runners, with 2.5" metal studs on alternating sides. Fill with 6" fiberglass insulation and sheathed and finished as shown in the drawings.
  3. Temporary perimeter and stairwell barricades at grade changes and multiple levels, shall be installed and maintained under the General Work Contractor; if a Contractor should need to temporarily relocate barrier, same Contractor shall protect personnel in the area and replace barrier to original location. This clause does not void any Contractor's liability to maintain a safe work site, but merely to assign temporary work to one contract.
  4. Temporary entrances and exits to the building, shall be furnished, installed, and maintained under the General Work Contractor contract work area, or as directed by the Construction Manager. Exits shall be maintained for exiting in emergency conditions until permanent structures are in place.
- I. Daily cleanup
1. Dumpsters are to be provided by the General Work Contractor. Dumpsters will be inspected to assure they are not misused and removed and hauled to a recycling center off site for processing. The General Work Contractor will not be responsible for the removal of any hazardous materials, this will be the responsibility of the prime contractor doing the same.
  2. The maintenance of a clean work site shall be the responsibility of each Contractor.
  3. Each Contractor shall remove own debris daily from work area to waste disposal containers (dumpsters), time lapse not acceptable. All items are to be broken down or flattened before being placed in the dumpsters.
  4. The condition of cleanliness in which an area is found, is the condition each Contractor shall leave.
  5. Each Contractor working on site shall submit manpower on Friday at 8 A.M. to work as a team to remove debris to dumpsters until complete. At discretion of Construction Manager, a Contractor not complying may be back charged for work performed by others. The responsibility of broom cleaning and debris disposal remains with General Construction Contractor and shall include use of sweeping compound.
  6. Final cleaning shall be the responsibility of each Prime Contractor for his/her own work.
  7. Protection of Work: Each Prime Contractor is reminded to temporarily protect work in place until accepted by the Owner per Article 10 of the General Conditions of the Contract.
  8. Collection and Disposal of Waste: Collect waste from construction areas and elsewhere daily. Comply with requirements of NFPA 241 for removal of combustible waste material and debris. Enforce requirements strictly. Do not hold materials more than 3 days during normal weather or 1 day when the temperature is expected to rise above 80°F (27°C). Handle hazardous, dangerous, or unsanitary waste materials separately from other waste by containerizing properly. Dispose of material lawfully. First aid requirements are the responsibility of each Contractor.



### 3.2 INSTALLATION

- A. Use qualified personnel for installation of temporary facilities. Locate facilities where they will serve the Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required.
- B. The prime contractor shall provide each facility ready for use when needed to avoid delay. Maintain and modify as required. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

### 3.3 SUPPORT FACILITIES INSTALLATION

- A. Locate field offices, storage sheds, sanitary facilities, and other temporary construction and support facilities for easy access as directed by the Construction Manager.
  - 1. Maintain support facilities until near Substantial Completion. Remove prior to Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to the Owner.
- B. Provide incombustible construction for offices, shops, and sheds located within the construction area or within 30 feet of building lines. Comply with requirements of NFPA 241.
- C. Field Offices: Each prime contractor shall provide an insulated, weathertight temporary office of sufficient size to accommodate required office personnel at the Project Site. Keep the office clean and orderly for use for small meetings.
  - 1. The prime Contractor will be responsible for hookup of their own project trailers. Use of energy, including heat (shall be set back at night) if practical from electric service will be available. If abused, power from temporary service will be disconnected. All installations shall conform to strictest standards.
- D. Storage and Fabrication Sheds: Install storage and fabrication sheds sized, furnished, and equipped to accommodate materials and equipment involved, including temporary utility service. Sheds may be open shelters or fully enclosed spaces within the building or elsewhere on-site.
- E. Temporary Parking/Staging and Access Roads
  - 1. Temporary roads are installed and/or maintained by the Site Work Contractor (Contract SC2) where designated on the site logistics plans.
  - 2. Contractors will be permitted to utilize existing roads, as designated (as segregated by the Owner - if required).
  - 3. Road Cleaning: Maintain roads and walkways in an acceptably clean condition. This includes the removal of debris daily, if required, and/or a minimum of once a week due to all project traffic. Road cleaning equipment to be wet/vacuum type. Site Work Contractor (Contract SC2) will clean the roads affected by all contract work. The Site Work Contractor will maintain roads until project completion.
  - 4. Snow Plowing: Site Work Contractor will provide snow plowing of temporary road, parking area, access route, and a 5' walkway to all office trailers.
  - 5. Snow Removal: Site Work Contract will provide snow removal at sidewalk areas adjacent to building and will provide snow removal at existing and new roofing areas and provide access to these work areas.
  - 6. Contractor Parking/ Staging Area: Site Work Contractor shall maintain access for suitable parking areas as indicated on Logistics plans. Re-grade, re-seed and restore any areas disturbed by parking/ staging.
    - a. Parking Areas: Includes contractors' employees and construction vehicle parking.

- b. Access Roads: Includes access roads for delivery through staging area to building work areas, and to equipment and storage areas and sheds.
  7. Temporary parking by construction personnel shall be allowed only in areas so designated.
  8. Traffic Regulations:
    - a. Utilize only entrances/temporary roads as designated
    - b. Construction parking will not be allowed adjacent to residential buildings, additions, or monuments.
  9. Traffic Controls: Site Work Contractor shall provide temporary traffic controls at junction of temporary roads with public roads. Include warning signs for public traffic and “STOP” signs for entrance onto public roads. Comply with requirements of authorities having jurisdiction.
- F. De-watering Facilities and Drains:
1. For temporary drainage and dewatering facilities and operations not directly associated with construction activities included under individual Sections, comply with dewatering requirements of applicable Division 2 Sections. Where feasible, use the same facilities. Maintain the site, excavations, and construction free of water.
  2. For temporary drainage and de-watering facilities and operations directly associated with the building and other construction activities, comply with Division 2; General Work Contractor is directly responsible for de-watering of all building excavations. Site Work Contractor is responsible for dewatering their own work.
- G. Temporary Enclosures / Signage: General Work Contractor shall provide temporary enclosure for protection of construction in progress and completed in new and existing facility, from exposure, foul weather, other construction operations, and similar activities as follows unless otherwise noted:
1. Install tarpaulins securely, with incombustible wood framing and other materials. Close openings of 25 sq. ft. (2.3 sq. m) or less with plywood of similar materials.
  2. Close openings through floor decks and horizontal surfaces with load-bearing, wood-framed construction.
  3. Where temporary wood or plywood enclosure exceeds 100 sq. ft. (9.2 sq. m) in area, use UL-labeled, fire-retardant treated material for framing and main sheathing.
  4. Generally, temporary closures for specific openings for a prime contractor to perform their work openings are the responsibility of Contractor creating the opening and shall be installed to protect building from exterior elements.
  5. Temporary partitions shall be installed at all openings where additions connect to existing buildings, and where required to protect areas, spaces, property, personnel, students, and faculty; to separate and control dust, debris, noise, access, sight, fire areas, safety, and security and to separate phased construction areas per the phasing plan. Temporary partitions shall be installed per section 01 5000 H.2 and maintained. Construction material and methods to suit need as determined by Construction Manager.
  6. Temporary Lifts and Hoists: Provide facilities for hoisting materials and employees. Truck cranes and similar devices used for hoisting materials are considered “tools and equipment” and not temporary facilities.
  7. Temporary Signs: The Site Work Contractor shall furnish and install construction signage. Prepare signs to provide directional information to construction personnel and visitors as follows:
    - a. Engage an experienced sign painter to apply graphics. Comply with details indicated.

- b. For construction traffic control/flow at entrances/exits, as designated by the Construction Manager & Owner (3 required)
- c. To direct visitors (1 required)
- d. For construction parking (1 required)
- e. To direct deliveries (2 required)
- f. Construction Area, Hard Hat Required, No Tobacco Use,
- g. Per OSHA standards as necessary
- h. For trailer identification
- i. Temporary exit signs

### **3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION**

- A. Operations of the Contractor may not block, hinder, impede, or otherwise inhibit the safe and expeditious exiting of the building's occupants during an emergency.
- B. In the event of an emergency, (designated by the sounding of the fire alarm system) all construction activities must immediately cease. Contractor's work force will evacuate themselves from work areas and remain outside of work areas until the "all clear" is given. No work operations will be tolerated during the evacuation of the building or during an emergency.
- C. Temporary Facility Changeover: Except for using permanent fire protection as soon as available, do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion, or longer, as requested by the Architect.
- D. Temporary Fire Protection: General Work Contractor shall provide, until fire-protection needs are supplied by permanent facilities, install and maintain temporary fire-protection facilities of the types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 10, "Standard for Portable Fire Extinguishers," and NFPA 241, "Standard for Safeguarding Construction, Alterations, and Demolition Operations."
  - 1. Locate fire extinguishers where convenient and effective for their intended purpose, but not less than one extinguisher on each floor at or near each usable stairwell.
  - 2. Store combustible materials in containers in fire-safe locations.
  - 3. Maintain unobstructed access to fire extinguishers, fire hydrants, temporary fire-protection facilities, stairways, and other access routes for fighting fires. Prohibit smoking in hazardous fire-exposure areas.
  - 4. Provide supervision of welding operations, combustion-type temporary heating units, and similar sources of fire ignition.
  - 5. Permanent Fire Protection: At the earliest feasible date in each area of the Project, complete installation of the permanent fire-protection facility, including connected services, and place into operation and use. Instruct key personnel on use of facilities.
- E. Fall Protection:

1. The General Work Contractor shall provide temporary cable top & mid railings per OSHA regulations around mechanical floor openings in their contract work area. Most of the exterior can be done by running cables from column to column, but some areas may require you to install posts as well. Include toe boards around perimeter and openings where required. The Prime Contractor must provide their own means for providing OSHA approved fall protection for his work persons. Temporary railings removed by a Prime Contractor for some reason other than constructing the permanent wall, must be immediately replaced by that Prime Contractor.
  2. The General Work Contractor shall rope off all roof openings in an OSHA approved manner in their contract work area. Include fluorescent ribbons or flags to accent the ropes
- F. Barricades, Warning Signs, and Lights: Comply with standards and code requirements for erecting structurally adequate barricades. Paint with appropriate colors, graphics, and warning signs to inform personnel and the public of the hazard being protected against. Where appropriate and needed, provide lighting, including flashing red or amber lights.
- G. Enclosure Fence: Site Work Contractor (Contract SC2) shall before, excavation begins, install an enclosure fence with lockable entrance gates. Locate where indicated or enclose the entire site or the portion determined sufficient to accommodate construction operations. Install in a manner that will prevent people, dogs, and other animals from easily entering the site, except by the entrance gates. Fence will be relocated as per the Phasing Plan.
1. Provide open-mesh, 6-foot high chainlink fencing with posts at 8-feet on center, set in a compacted mixture of gravel and earth.
  2. Provide min. 3 double swing access gates and man gates. Each gate is to have a chain and padlock.
    - a. Provide (2) keys for each lock to the Construction Manager.
  3. Remove fence upon completion of all exterior activities or sooner if directed by Construction Manager.
- H. Security Enclosure and Lockup: General Construction Work Contractor shall install substantial temporary enclosure of partially completed areas of construction. Provide locking entrances to prevent unauthorized entrance, vandalism, theft and similar violations of security.
1. Storage: Where materials and equipment must be stored, and are of value or attractive for theft, provide a secure lockup. Enforce discipline in connection with the installation and release of material to minimize the opportunity for theft and vandalism.
- I. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations, and minimize the possibility that air, waterways, and subsoil might be contaminated or polluted or that other undesirable effects might result. Avoid using tools and equipment that produce harmful noise. Restrict use of noise-making tools and equipment to hours that will minimize complaints from persons or firms near the site.

### **3.5 OPERATION, TERMINATION, AND REMOVAL**

- A. Supervision: Enforce strict discipline in use of temporary facilities. Limit availability of temporary facilities to essential and intended uses to minimize waste and abuse.
- B. Maintenance: Maintain facilities and good operating condition until removal. Protect from damage by freezing temperatures and similar elements.

1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.
  2. Protection: Prevent water-filled piping from freezing. Maintain markers for underground lines. Protect from damage during excavation operations.
- C. Termination and Removal: Unless the Construction Manager requests that it be maintained longer, remove each temporary facility when the need has ended, when replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with the temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.
1. Materials and facilities that constitute temporary facilities are the property of each prime contractor. The Owner reserves the right to take possession of project identification signs.
  2. Remove temporary paving not intended for or acceptable for integration into permanent paving. Where the area is intended for landscape development, remove soil and aggregate fill that do not comply with requirements for fill or subsoil in the area. Remove materials contaminated with road oil, asphalt and other petrochemical compounds, and other substances that might impair growth of plant materials or lawns. Repair or replace street paving, curbs, and sidewalks at the temporary entrances, as required by the governing authority.
  3. At Substantial Completion, clean and renovate permanent facilities used during the construction period including, but not limited to, the following:
    - a. Replace air filters and clean inside of ductwork and housings.
    - b. Replace significantly worn parts and parts subject to unusual operating conditions.
    - c. Replace lamps burned out or noticeably dimmed by hours of use.

END OF SECTION 01 50 00

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**SECTION 01 5100  
HEAT DURING CONSTRUCTION**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Heat during construction for new construction and existing buildings.

**1.02 RELATED SECTIONS**

- A. Section 01 0000 - General Requirements.  
B. Section 01 3000 - Administrative Requirements.  
C. Section 01 5000 - Temporary Facilities and Controls.

**1.03 HEAT DURING CONSTRUCTION - NEW CONSTRUCTION; PHASE 1 - BUILDING NOT ENCLOSED**

- A. Prior to the time the building is enclosed, heat shall be provided by each Prime Contractor, as required to accomplish the following:
1. Protect his completed Work or Work in progress.
  2. Protect material and equipment being installed.
  3. Enable his workmen to accomplish their Work in a satisfactory manner.
  4. Maintain the approved Progress Schedule.
  5. During Phase 1 all costs associated with heat for construction shall be paid for by the Contractors, the cost of which shall be included in their Base Bid cost.
  6. The building shall be considered enclosed when the exterior surfaces are completed sufficiently to exclude the elements and retain heat. The General Contractor shall make all permanent or, at his option, temporary enclosures of the exterior surfaces of the building to exclude the elements and retain heat as soon as practical, in accordance with the approved progress schedule. At a minimum, enclosure shall include, but not be limited to, roof installation, exterior building envelope including wall insulation, windows and doors or material equal in R-value. It shall be the responsibility of the General Contractor to notify the Resident Project Representative and the other Prime Contractors involved with the Project in writing that the building is enclosed. Upon receipt of the General Contractor's notification, the Resident Project Representative shall verify that the building is sufficiently enclosed to enact the provisions of the Specifications.

**1.04 HEAT DURING CONSTRUCTION - NEW CONSTRUCTION; PHASE 2 - BUILDING ENCLOSED, PERMANENT HEATING SYSTEM NOT READY FOR OPERATION:**

- A. When the building is enclosed as defined in Article 1.03, A, 6, heat shall be provided and paid for by the General Contractor as hereinafter defined in Article 1.04, PHASE 2, and as required to accomplish the following:
1. Protect completed Work.
  2. Protect material and equipment being installed.
  3. Enable workmen to accomplish their work in a satisfactory manner.
  4. Maintain the approved progress schedule.
- B. Once the New Building is "enclosed" and reviewed and approved by the Architect/Engineer/Resident Project Representative, the General Contractor shall provide all temporary heat to accommodate Article 1.04, A. Fuel for temporary heat will be provided by the General Contractor and paid for by the Owner. Approval of fuel type shall be made by the Architect/Engineer/Resident Project Representative prior to installation. RESISTIVE ELECTRIC HEAT shall not be permitted to be used at anytime.
- C. The Electrical Contractor shall provide any and all temporary power requirements for the temporary heating units. The Electrical Contractor shall disconnect and remove temporary power from temporary heating units when temporary heat is no longer required.
- D. The Mechanical Contractor shall provide any and all temporary service piping required to fuel temporary heating units and shall remove all temporary service piping once temporary heat is no longer required.

- E. Within 30 calendar days of notification of enclosure, the General Contractor, Plumbing Contractor, and Electrical Contractor shall have sufficiently completed all Work, including required tests for which he is responsible to enable the Mechanical Contractor to utilize the existing boilers for temporary heat.
- F. Within 90 calendar days of notification of enclosure, the Mechanical Contractor shall provide temporary heat which may utilize the existing boilers. This system may include, but not be limited to, temporary hot water piping to hot water coil units. At no time will the new HVAC systems be utilized for temporary heat during construction. Temporary heat provided by the Mechanical Contractor must be controlled to sustain atmospheric conditions described in Article 1.03, 7. The cost of the gas utilized for temporary heat described in Article 1.04, C., shall be borne by the Owner.
- G. It shall be the responsibility of the Mechanical Contractor to notify the Resident Project Representative and the other Prime Contractors that the temporary heating system is complete as required in Article 1.04, D.
- H. Any Prime Contractor who fails to progress his Work as required in Articles 1.04, B; 1.04, C; and 1.04, D, and who thereby delays the completion of the Work as required in Article 1.04, PHASE 2, shall pay all cost of continuing heat as required under Article 1.04, PHASE 2. Should two (2) or more Prime Contractors fail to progress their Work as required in 1Articles.04, B. and 1.04, C., they shall jointly be held liable to pay all cost of continuing heat as required under Article 1.04 PHASE 2.
- I. The method of temporary heat shall meet all applicable codes and ordinances. Heat provided by the General Contractor under Article 1.04, PHASE 2 shall be maintained at not less than 50 degrees F unless lower temperature are sufficient to meet the requirements of Article 1.04, A. At no time will the temporary heating system be allowed to be connected to the temporary or permanent electric system. Payment for installation and maintenance of temporary heat shall be the complete responsibility of the Contractor as described in applicable Sections of these Specifications.
- J. Failure of any Prime Contractor to guard against unnecessary heat loss during Article 1.05, PHASE 3 shall render him liable for the resultant fuel cost.

**1.05 HEAT DURING CONSTRUCTION - NEW CONSTRUCTION; PHASE 3 - BUILDING ENCLOSED, PERMANENT HEATING SYSTEM OPERABLE**

- A. When those portions of the General Construction, Plumbing, Electrical, and Mechanical Work are complete, the Owner shall accept those portions of the Work including related controls and safety devices and use, operate, and maintain them to provide heat.
- B. By accepting the permanent heating system and related controls and safety devices, the Owner agrees to:
  - 1. Begin the guarantee period for the Work completed and accepted as of the date of acceptance.
  - 2. Assume full responsibility for the proper operation and maintenance of all accepted portions of the heating system.
  - 3. Provide sufficient heat continuously to:
    - a. Protect completed Work.
    - b. Protect material and equipment being installed.
    - c. Enable workmen to accomplish their Work in a satisfactory manner.
    - d. Maintain the approved progress schedule.
- C. Failure of any Prime Contractor to guard against unnecessary heat loss during Article 1.05, PHASE 3 shall render him liable for the resultant fuel cost.
- D. Acceptance of the permanent system relates only to responsibility for damage caused by the Owner's neglect and normal wear and tear. No Prime Contractor is relieved of any contractual requirement for furnishing a complete and operating system in perfect condition at the completion of the Work.



#### **1.06 HEAT DURING CONSTRUCTION - EXISTING BUILDINGS**

- A. During such periods where scheduled Interior Renovation Work is to be performed during periods when heat is required, the General Contractor that is holding the contract for the given work areas shall be completely responsible for providing temporary heat.
- B. The method of temporary heat shall meet all applicable codes and ordinances. Heat provided by the General Contractor under Article 1.04, PHASE 2, shall be maintained at not less than 50 degrees F unless lower temperatures are sufficient to meet the requirements of Article 1.04, A., or unless higher temperatures are required to maintain the environment required to perform specific construction activities including, but not limited to, finishes, etc. At no time shall the temporary heating system be allowed to be connected to the temporary or existing electric system. Payment for installation and maintenance of temporary heat shall be the complete responsibility of the General Contractor as described in applicable Sections of these Specifications.
- C. In the event that a Prime Contractor removes equipment or otherwise compromises the existing building envelope, that Contractor shall be completely responsible for providing for and maintaining temporary enclosures acceptable to the Resident Project Representative to maintain temporary heat within the space protected from outside elements. This will apply, but shall not be limited to, the removal of heating units, louvers, vents, windows and doors, and portions of roof and wall systems.

#### **1.07 TEMPORARY HEATING EQUIPMENT**

- A. Reference Fire Code of New York State, Chapter 14 - Fire Safety during Construction and Demolition Section 1403.
  - 1. LP-gas heaters: Fuel supplies for liquefied-petroleum gas-fired heaters shall comply with NFPA 58 and the Fuel Gas Code of New York State.
  - 2. Oil-fired heaters: Oil-fired heaters shall comply with Section 603 of the Fire Code of New York State.
  - 3. Supervision: The use of temporary heating devices shall be supervised and maintained only by competent personnel.
  - 4. Installation: Clearance to combustibles from temporary heating devices shall be maintained in accordance with the labeled equipment. When in operation, temporary heating devices shall be fixed in place and protected from damage, dislodgement, or overturning in accordance with the manufacturer's instructions.

#### **PART 2 PRODUCTS - NOT USED**

#### **PART 3 EXECUTION - NOT USED**

**END OF SECTION**

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**SECTION 01 5213  
FIELD OFFICES**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Temporary field offices for use of Construction Manager.
- B. Maintenance and removal.

**1.02 RELATED REQUIREMENTS**

- A. Section 01 5000 - Temporary Facilities and Controls:
  - 1. Temporary telecommunications services for administrative purposes.
  - 2. Temporary sanitary facilities required by law.
  - 3. Temporary electrical service for power.

**PART 2 PRODUCTS**

**2.01 MATERIALS, EQUIPMENT, FURNISHINGS**

- A. The General Contractor shall supply for the Construction Manager use a building or mobile trailer which shall be erected at a location selected by the Construction Manager and shall be separate from any building used by the Contractor.
- B. Materials, Equipment, Furnishings: Serviceable, new or used, adequate for required purpose.

**2.02 CONSTRUCTION**

- A. Portable or mobile buildings, or trailers constructed with floors raised above ground, securely fixed to foundations, with steps and landings at entrance doors. Field office building shall be provided with "skirting" to enclose underside of building to surrounding ground.
- B. Construction: Structurally sound, secure, weather tight enclosures for office. Maintain during progress of Work; remove when no longer needed.
- C. Temperature Transmission Resistance of Floors, Walls, and Ceilings: Compatible with occupancy requirements.
- D. Interior Materials in Offices: Sheet type materials for walls and ceilings, prefinished or painted; resilient floors and bases.
- E. Lighting for Offices: 100 foot candles at desk top height, exterior lighting at entrance doors.
- F. Fire Extinguishers: Appropriate type fire extinguisher at each office.

**2.03 ENVIRONMENTAL CONTROL**

- A. Heating, Cooling, and Ventilating: Automatic equipment to maintain comfort conditions (ambient air temperature of 70 degrees F +/- 5 degrees.

**2.04 CONSTRUCTION MANAGER OFFICE**

- A. Separate space for sole use of the Construction Manager with separate entrance door with new lock and two (2) keys.
- B. Area: At least 400 square feet with minimum dimension of 8 feet.
- C. Windows: At least six (6), with minimum total area equivalent to 10 percent of floor area, with an operable sash and insect screen. Locate to provide views of construction area.
- D. Electrical Distribution Panel: 200 amp minimum, 240 volt, single phase, 60 hz service.
  - 1. Electrical service to be provided by Electrical Contractor in accordance with Section 01 5000 - Temporary Facilities and Controls or by the General Contractor if there is no Electrical Contract.
- E. Minimum eight (8) 110 volt duplex convenience outlets, two (2) on each wall.
- F. High Speed Internet Service: The General Contractor shall provide wireless, high speed internet service to the Construction Manager's field office. Initial hook-up costs and monthly high speed internet cost shall be the General Contractors responsibility.

- G. First Aid Kit: The General Contractor shall keep the kit properly stocked with appropriate first aid supplies at all times.
- H. Sanitary Facilities: private lavatory toilet facilities.
- I. Drinking Fountain: The General Contractor shall provide a water cooler for the Construction Manager's office. Provide adequate supply of water and cups throughout the duration of the Project.
- J. Furnishings:
  - 1. Two (2) desks 54 x 30 inch, with three (3) drawers.
  - 2. One (1) drafting table 36 by 72 inch with one (1) equipment drawer and a 48 inch wide parallel straight edge.
  - 3. One 11 by 17 inch printer.
  - 4. One (1) metal, double-door storage cabinet under table.
  - 5. Plan rack to hold working Drawings, Shop Drawings, and record documents.
  - 6. One (1) fire resistant standard four (4) drawer legal size metal filing cabinet with locks and two (2) keys per lock. Fire resistant file cabinet shall meet the requirements for "Insulating Filing Devices, Class 350-1 Hour (D)" of ANSI/UL 72.
  - 7. 6 linear ft of metal bookshelves.
  - 8. Two (2) swivel arm chairs.
  - 9. Two (2) straight chairs.
  - 10. Two (2) drafting table stool.
  - 11. One (1) tackboard 36 by 30 inch.
  - 12. One (1) waste basket per desk and table.
  - 13. Scanner/copier/printer machine with a regular supply of 8-1/2 inch x 11 inch paper, 11 inch x 17 inch paper, and toner.
  - 14. At the completion of the Construction Project, the field office and its contents provided by the General Contractor, with the exception of the Architect/Engineers/Resident Project Representative project files, shall be returned to the General Contractor.

## **PART 3 EXECUTION**

### **3.01 PREPARATION**

- A. Fill and grade sites for temporary structures to provide drainage away from buildings.

### **3.02 INSTALLATION**

- A. Install office spaces ready for occupancy 15 days after date fixed in Notice to Proceed.
- B. The buildings shall be fully equipped and made available for use and occupancy by the Construction Manager prior to the start of any Contract Work. Such use and occupancy shall be made available after the Work has been accepted by the Construction Manager.
- C. Parking: Five (5) parking spaces for use by Construction Manager and Architect/Engineer, connected to office by appropriate walk.

### **3.03 MAINTENANCE AND CLEANING**

- A. The General Contractor shall provide Weekly janitorial services for the Construction Manager's field office. Each Contractor is responsible for periodic cleaning and maintenance of their project field offices.
- B. All buildings shall be maintained in good condition and appearance by the Contractor for the designated period after which all portable buildings or trailers, fencing, surfacing, and utilities shall be removed from the location, the areas cleaned, loamed, and seeded, if required, and left in a neat and acceptable condition.
- C. The Contractor shall be responsible, until use and occupancy of the office and building is relinquished by the Owner, for any and all damage, direct or indirect, of whatever nature, occurring to the property of the Owner's Construction Manager which is kept in any office building that the Contractor is required to furnish as an item(s) of the Contract. Such damages would include any loss caused by, but not limited to, fire, theft, vandalism, or malicious mischief.

- D. Maintain approach walks free of mud, water, and snow.

#### **3.04 REMOVAL**

- A. At completion of Work remove buildings, foundations, utility services, and debris. Restore areas.
- B. Construction Manager's office and all associated services shall not be removed from the site until the time of final acceptance of the Contract Work.

**END OF SECTION**

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**SECTION 01 5500  
VEHICULAR ACCESS AND PARKING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Access roads.
- B. Parking.
- C. Existing pavements and parking areas.
- D. Permanent pavements and parking facilities.
- E. Construction parking controls.
- F. Flag persons.
- G. Maintenance.
- H. Removal, repair.
- I. Mud from site vehicles.

**1.02 RELATED REQUIREMENTS**

- A. Section 31 2200 - Grading: Specifications for earthwork and paving bases.

**PART 2 PRODUCTS**

**2.01 MATERIALS**

- A. Materials for Permanent Construction: As specified in product specification sections, including earthwork, paving base, and topping.

**PART 3 EXECUTION**

**3.01 PREPARATION**

**3.02 ACCESS ROADS**

- A. Use of existing on-site streets and driveways for construction traffic is permitted.
- B. Tracked vehicles not allowed on paved areas.
- C. Provide unimpeded access for emergency vehicles. Maintain 20 foot width driveways with turning space between and around combustible materials.
- D. Provide and maintain access to fire hydrants free of obstructions.

**3.03 PARKING**

- A. Use of designated areas of existing parking facilities by construction personnel is permitted.
- B. Locate as indicated.
- C. Locate as approved by Construction Manager and Architect.

**3.04 PERMANENT PAVEMENTS AND PARKING FACILITIES**

- A. Prior to Substantial Completion the base for permanent roads and parking areas may be used for construction traffic.
- B. Avoid traffic loading beyond paving design capacity. Tracked vehicles not allowed.

**3.05 CONSTRUCTION PARKING CONTROL**

- A. Control vehicular parking to prevent interference with public traffic and parking, access by emergency vehicles, and Owner's operations.
- B. Monitor parking of construction personnel's vehicles in existing facilities. Maintain vehicular access to and through parking areas.
- C. Prevent parking on or adjacent to access roads or in non-designated areas.

### **3.06 FLAG PERSONS**

- A. Provide trained and equipped flag persons to regulate traffic when construction operations or traffic encroach on public traffic lanes.

### **3.07 MAINTENANCE**

- A. Maintain traffic and parking areas in a sound condition free of excavated material, construction equipment, products, mud, snow, and ice.
- B. Maintain existing paved areas used for construction; promptly repair breaks, potholes, low areas, standing water, and other deficiencies, to maintain paving and drainage in original, or specified, condition.

### **3.08 REMOVAL, REPAIR**

- A. Repair existing facilities damaged by use, to original condition.
- B. Repair damage caused by installation.

### **3.09 MUD FROM SITE VEHICLES**

- A. Provide means of removing mud from vehicle wheels before entering streets.

**END OF SECTION**



**SECTION 01 5713  
EROSION AND SEDIMENT CONTROL**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Prevention of erosion due to construction activities.
- B. Prevention of sedimentation of waterways, open drainage ways, and storm and sanitary sewers due to construction activities.
- C. Measures used for erosion and sediment control, including temporary mulching, permanent restoration, berms, dikes, silt fences, straw wattles, erosion control blankets, inlet protection measures, check dams and other erosion and sediment control methods.
- D. Restoration of areas eroded due to insufficient preventive measures.
- E. Compensation of Owner for fines levied by authorities having jurisdiction due to non-compliance by Contractor.

**1.02 RELATED REQUIREMENTS**

- A. Section 31 2200 - Grading.
- B. Section 31 2316 - Excavation.
- C. Section 32 9200 - Lawns and Grasses.

**1.03 REFERENCE STANDARDS**

- A. New York Standards and Specifications for Erosion and Sediment Control (The Blue Book).
- B. New York State Stormwater Management Design Manual.
- C. New York State Department of Transportation, Standard Specifications.

**1.04 PERFORMANCE REQUIREMENTS**

- A. Also comply with all more stringent requirements of State of New York Erosion and Sedimentation Control Manual.
- B. Do not begin clearing, grading, or other work involving disturbance of ground surface cover until applicable permits have been obtained; furnish all documentation required to obtain applicable permits.
- C. Timing: Put preventive measures in place as soon as possible after disturbance of surface cover and before precipitation occurs.
- D. Storm Water Runoff: Control increased storm water runoff due to disturbance of surface cover due to construction activities for this project.
  - 1. Prevent runoff into storm and sanitary sewer systems, including open drainage channels, in excess of actual capacity or amount allowed by authorities having jurisdiction, whichever is less.
- E. Erosion On Site: Minimize wind, water, and vehicular erosion of soil on project site due to construction activities for this project.
  - 1. Control movement of sediment and soil from temporary stockpiles of soil.
  - 2. Prevent development of ruts due to equipment and vehicular traffic.
  - 3. If erosion occurs due to non-compliance with these requirements, restore eroded areas at no cost to Owner.
- F. Erosion Off Site: Prevent erosion of soil and deposition of sediment on other properties caused by water leaving the project site due to construction activities for this project.
  - 1. Prevent windblown soil from leaving the project site.
  - 2. Prevent tracking of mud onto public roads outside site.
  - 3. Prevent mud and sediment from flowing onto sidewalks and pavements.
  - 4. If erosion occurs due to non-compliance with these requirements, restore eroded areas at no cost to Owner.

- G. Sedimentation of Waterways On Site: Prevent sedimentation of waterways on the project site, including rivers, streams, lakes, ponds, open drainage ways, storm sewers, and sanitary sewers.
  - 1. If sedimentation occurs, install or correct preventive measures immediately at no cost to Owner; remove deposited sediments; comply with requirements of authorities having jurisdiction.
  - 2. If sediment basins are used as temporary preventive measures, pump dry and remove deposited sediment after each storm.
- H. Sedimentation of Waterways Off Site: Prevent sedimentation of waterways off the project site, including rivers, streams, lakes, ponds, open drainage ways, storm sewers, and sanitary sewers.
  - 1. If sedimentation occurs, install or correct preventive measures immediately at no cost to Owner; remove deposited sediments; comply with requirements of authorities having jurisdiction.
- I. Maintenance: Maintain temporary preventive measures until permanent measures have been established.

## 1.05 SUBMITTALS

- A. See Section 01 3300 - Submittal Procedures for submittal process.
- B. Certificate: Mill certificate for silt fence fabric attesting that fabric and factory seams comply with specified requirements, signed by legally authorized official of manufacturer; indicate actual minimum average roll values; identify fabric by roll identification numbers.

## PART 2 PRODUCTS

### 2.01 FENCING

- A. Silt fence fabric shall meet the following:

| <b>Fabric Properties</b>            | <b>Minimum Acceptable Value</b> | <b>Test Method</b>   |
|-------------------------------------|---------------------------------|----------------------|
| Grab Tensile Strength (lbs)         | 90                              | ASTM D1682           |
| Elongation at Failure (%)           | 50                              | ASTM D1682           |
| Mullen Burst Strength (psi)         | 190                             | ASTM D3786           |
| Puncture Strength (lbs)             | 40                              | ASTM D751 (modified) |
| Slurry Flow Rate (gal/min/sf)       | 0.3                             |                      |
| Equivalent Opening Size             | 40-80                           | US - Standard Sieve  |
| Ultraviolet Radiation Stability (%) | 90                              | ASTM G26             |

- B. Fence Posts: The length shall be a minimum of 36 inch long. Wood posts shall be of sound quality hardwood with a minimum cross sectional area of 3 square inches. Steel posts shall be standard "T" or "U" section weighing not less than 1.0 pounds per linear foot.
- C. Wire Fence: Wire fencing shall be a minimum 14-1/2 gage with a maximum 6 inch mesh opening.

### 2.02 EROSION CONTROL BLANKET

- A. Erosion control blanket shall be composed of degradable material, composed primarily of processed natural organic material, manufactured or fabricated into rolls designed to reduce soil erosion.
- B. Anchoring and adjacent roll overlap shall be in accordance with the manufacturer's recommendations.
- C. Rough and final grading shall be completed prior to erosion control blanket installation.
- D. Erosion control blanket shall be installed on steep slopes or in concentrated flow paths.

### 2.03 TEMPORARY MULCHING

- A. Mulch shall consist of straw, free of undesirable seeds and course materials.
- B. Mulch shall be applied at 100 pound per 1,000 square feet.

## **2.04 STRAW WATTLES**

- A. Wrapped straw logs with hardwood stakes as manufactured by North American Green or approved equal.
- B. All materials within wattles shall be fully biodegradable.

## **2.05 STABILIZED CONSTRUCTION ENTRANCE**

- A. Constructed of geotextile fabric and stone of appropriate length and width at the entrance/exit point to the construction site.

## **2.06 CATCH BASIN INLET PROTECTION**

- A. Where required, constructed with perimeter sedimentation pool.
- B. With permission of Engineer, may be constructed with silt fence, wattles or other approved techniques.
- C. Stone shall be replaced as required or as directed by Engineer.

## **2.07 CULVERT INLET PROTECTION**

- A. Stone shall be replaced as required or as directed by Engineer.

## **2.08 SOIL STOCKPILE**

- A. Topsoil and subsoil stockpiles surrounded and protected with perimeter silt fencing, straw wattles, or other approved technique.
- B. Engineer may order mulching and seeding of stockpiles.

# **PART 3 EXECUTION**

## **3.01 INSTALLATION**

- A. Finish grading of all areas disturbed by trenching operations shall be completed within 14 days of pipe installation unless otherwise approved. No soil disturbed or exposed by this project shall be left unprotected for more than 14 days. Protection measures would include one or more of the erosion and sediment control measures described in this specification.
- B. Schedule work to minimize soil erosion.
- C. Construct erosion control features concurrently with other work to minimize area exposed to erosion.
- D. In the event of conflict between these specifications and laws, rules, or regulations of Federal, State, or local agencies, the more restrictive shall apply.
- E. The Engineer has the authority to limit the surface area of erodible earth material exposed and to direct the Contractor to provide immediate control measures to minimize damage to adjacent property and to minimize contamination of water resources.
- F. Traffic-Bearing Aggregate Surface:
  - 1. Excavate minimum of 6 inches.
  - 2. Place geotextile fabric full width and length, with minimum 12 inch overlap at joints.
  - 3. Place and compact at least 6 inches of 1 1/2 to 3 1/2 inch diameter stone.
- G. Silt Fences:
  - 1. Store and handle fabric in accordance with ASTM D4873/D4873M.
  - 2. Where slope gradient is less than 3:1 or barriers will be in place less than 6 months, use nominal 16 inch high barriers with minimum 36 inch long posts spaced at 6 feet maximum, with fabric embedded at least 4 inches in ground.
  - 3. Install with top of fabric at nominal height and embedment as specified.
  - 4. Do not splice fabric width; minimize splices in fabric length; splice at post only, overlapping at least 18 inches, with extra post.
  - 5. Fasten fabric to wood posts using one of the following:
    - a. Four nails per post with 3/4 inch diameter flat or button head, 1 inch long, and 14 gage, 0.083 inch shank diameter.

- b. Five staples per post with at least 17 gage, 0.0453 inch wire, 3/4 inch crown width and 1/2 inch long legs.
- H. Straw Bale Rows:
  - 1. Install bales in continuous rows with ends butting tightly, with one bale at each end of row turned uphill.
  - 2. Install bales so that bindings are not in contact with the ground.
  - 3. Embed bales at least 4 inches in the ground.
  - 4. Anchor bales with at least two stakes per bale, driven at least 18 inches into the ground; drive first stake in each bale toward the previously placed bale to force bales together.
  - 5. Fill gaps between ends of bales with loose straw wedged tightly.
  - 6. Place soil excavated for trench against bales on the upslope side of the row, compacted.

### **3.02 MAINTENANCE**

- A. Erosion and sediment control measures shall remain in place until the successful establishment of vegetation or other restoration on disturbed surfaces.
- B. Inspect preventive measures weekly, within 24 hours after the end of any storm that produces 0.5 inches or more rainfall at the project site, and daily during prolonged rainfall.
- C. Repair deficiencies immediately.
- D. Silt Fences:
  - 1. Promptly replace fabric that deteriorates unless need for fence has passed.
  - 2. Remove silt deposits that exceed one-third of the height of the fence.
  - 3. Repair fences that are undercut by runoff or otherwise damaged, whether by runoff or other causes.
- E. Straw Bale Rows:
  - 1. Promptly replace bales that fall apart or otherwise deteriorate unless need has passed.
  - 2. Remove silt deposits that exceed one-half of the height of the bales.
  - 3. Repair bale rows that are undercut by runoff or otherwise damaged, whether by runoff or other causes.
- F. Clean out temporary sediment control structures weekly and relocate soil on site.

### **3.03 CLEAN UP**

- A. Remove temporary measures after permanent measures have been installed, unless permitted to remain by Architect or Engineer.
- B. Clean out temporary sediment control structures that are to remain as permanent measures.
- C. Where removal of temporary measures would leave exposed soil, shape surface to an acceptable grade and finish to match adjacent ground surfaces.

**END OF SECTION**

**SECTION 01 5721  
INDOOR AIR QUALITY CONTROLS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Construction procedures to promote adequate indoor air quality after construction.
- B. Building flush-out after construction and before occupancy.
- C. Testing indoor air quality before commencement of construction; existing building areas only.
- D. Testing indoor air quality after completion of construction.

**1.02 PROJECT GOALS**

- A. Dust and Airborne Particulates: Prevent deposition of dust and other particulates in HVAC ducts and equipment.
  - 1. Cleaning of ductwork is not contemplated under this Contract.
  - 2. Contractor shall bear the cost of cleaning required due to failure to protect ducts and equipment from construction dust.
  - 3. Establish condition of existing ducts and equipment prior to start of alterations.
- B. Airborne Contaminants: Procedures and products have been specified to minimize indoor air pollutants.
  - 1. Furnish products meeting the Specifications.
  - 2. Avoid construction practices that could result in contamination of installed products leading to indoor air pollution.

**1.03 RELATED REQUIREMENTS**

- A. Section 01 3529.10 - Life Safety Requirements During School Construction.
- B. Section 01 4000 - Quality Requirements: Testing and inspection services.
- C. Section 23 0593 - Testing, Adjusting, and Balancing for HVAC.: Testing HVAC systems for proper air flow rates, adjustment of dampers and registers, and setting for equipment.

**1.04 REFERENCE STANDARDS**

- A. ASHRAE Std 52.2 - Method of Testing General Ventilation Air-Cleaning Devices for Removal Efficiency by Particle Size; 2012, with 2015 amendments.
- B. ASTM D5197 - Standard Test Method for Determination of Formaldehyde and Other Carbonyl Compounds in Air (Active Sampler Methodology); 2009.
- C. CAL (CDPH SM) - Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions from Indoor Sources Using Environmental Chambers; California Department of Public Health; v1.1, 2010.
- D. EPA 625/R-96/010b - Compendium of Methods for Determination of Toxic Organic Compounds in Ambient Air; Jan-99.
- E. SMACNA (OCC) - IAQ Guidelines for Occupied Buildings Under Construction; 2007.

**1.05 DEFINITIONS**

- A. Adsorptive Materials: Gypsum board, acoustical ceiling tile and panels, carpet and carpet tile, fabrics, fibrous insulation, and other similar products.
- B. Contaminants: Gases, vapors, regulated pollutants, airborne mold and mildew, and the like, as Specified.
- C. Particulates: Dust, dirt, and other airborne solid matter.
- D. Wet Work: Concrete plaster, coatings, and other products that emit water vapor or volatile organic compounds during installation, drying, or curing.

**1.06 SUBMITTALS**

- A. See Section 01 3300 - Submittal Procedures, for submittal process.

- B. Indoor Air Quality Management Plan: Describe in detail measures to be taken to promote adequate indoor air quality upon completion; use SMACNA (OCC) as a guide.
  - 1. Submit not less than sixty (60) days before enclosure of building.
  - 2. Identify potential sources of odor and dust.
  - 3. Identify construction activities likely to produce odor or dust.
  - 4. Identify areas of project potentially affected, especially occupied areas.
  - 5. Evaluate potential problems by severity and describe methods of control.
  - 6. Describe construction ventilation to be provided, including type and duration of ventilation, use of permanent HVAC systems, types of filters and schedule for replacement of filters.
  - 7. Describe cleaning and dust control procedures.
- C. Interior Finishes Installation Schedule: Identify each interior finish that either generates odors, moisture, or vapors or is susceptible to adsorption of odors and vapors, and indicate air handling zone, sequence of application, and curing times.
- D. Duct and Terminal Unit Inspection Report.
- E. Air Contaminant Test Plan: Identify the following:
  - 1. Testing agency qualifications.
  - 2. Locations and scheduling of air sampling.
  - 3. Test procedures, in detail.
  - 4. Test Instruments and apparatus.
  - 5. Sampling Methods.
- F. Air Contaminant Test Reports: Show the following:
  - 1. Location where each sample was taken, and time.
  - 2. Test values for each air sample; average the values of each set of three (3).
  - 3. HVAC operating conditions.
  - 4. Certification of test equipment calibration.
  - 5. Other conditions or discrepancies that might have influenced results.

## **1.07 QUALITY ASSURANCE**

- A. Testing and Inspection Agency Qualifications: Independent testing agency having a minimum of five (5) years experience in performing the types of testing Specified.

## **PART 2 PRODUCTS**

### **2.01 MATERIALS**

- A. Auxiliary Air Filters: MERV of 8, minimum, when tested in accordance with ASHRAE Std 52.2.

## **PART 3 EXECUTION**

### **3.01 CONSTRUCTION PROCEDURES**

- A. Prevent the absorption of moisture and humidity by adsorptive materials by:
  - 1. Sequencing the delivery of such materials so that they are not present in the building until Wet Work is completed and dry.
  - 2. Delivery and storage of such materials in fully sealed moisture-impermeable packaging.
  - 3. Provide sufficient ventilation for drying within reasonable time frame.
- B. Begin construction ventilation when building is substantially enclosed.
- C. If extremely dusty or dirty work must be conducted inside the building, isolate HVAC system from the Work Area for the duration; remove dust and dirt completely before restoring systems.
- D. When working in a portion of an occupied building, prevent movement of air from construction area to occupied area.
- E. HVAC equipment and ductwork may NOT be used for ventilation during construction:
  - 1. Provide temporary ventilation equivalent to 1-1/2 air changes per hour, minimum.
  - 2. Exhaust directly to outside.
  - 3. Seal HVAC air inlets and outlets immediately after duct installation.
- F. Do not store construction materials or waste in mechanical or electrical rooms.

- G. Prior to use of return air ductwork without intake filters, cleanup and remove dust and debris generated by construction activities.
  - 1. Inspect duct intakes, return air grilles, and terminal units for dust.
  - 2. Clean plenum spaces, including top sides of lay-in ceilings, outsides of ducts, tops of pipes, and conduit.
  - 3. Clean tops of doors and frames.
  - 4. Clean mechanical and electrical rooms, including tops of pipes, ducts, conduit, equipment, and supports.
  - 5. Clean return plenums of air handling units.
  - 6. Remove intake filters last, after cleaning is complete.
- H. Do not perform DUSTY or DIRTY WORK after starting use of return air ducts without intake filters.
- I. Use other relevant recommendations of SMACNA (OCC) for avoiding unnecessary contamination due to construction procedures.

### **3.02 BUILDING FLUSH-OUT**

- A. Contractor's Option: Either full continuous flush-out OR satisfactory air contaminant testing is required, not both.
- B. Perform building flush-out before occupancy.
- C. Do not start flush-out until:
  - 1. All construction is complete.
  - 2. HVAC systems have been tested, adjusted, and balanced for proper operation.
  - 3. Inspection of inside of return air ducts and terminal units confirms that cleaning is not necessary.
  - 4. New HVAC filtration media have been installed.
- D. Building Flush-Out: Operate all ventilation systems at normal flow rates with 100 percent outside air until a total air volume of 14,000 cubic feet per square foot of floor area has been supplied.
  - 1. Obtain Owner's concurrence that construction is complete enough before beginning flush-out.
  - 2. Maintain interior temperature of at least 60 degrees F and interior relative humidity no higher than 60 percent.
  - 3. If additional construction involving materials that produce particulates or any of the Specified contaminants is conducted during flush-out, start flush-out over.
- E. Install new HVAC filtration media after completion of flush-out and before occupancy or further testing.

**END OF SECTION**

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**SECTION 01 5813  
TEMPORARY PROJECT SIGNAGE**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Project identification sign.

**1.02 QUALITY ASSURANCE**

- A. Design sign and structure to withstand 50 miles/hr wind velocity.
- B. Sign Painter: Experienced as a professional sign painter for minimum three years.
- C. Finishes, Painting: Adequate to withstand weathering, fading, and chipping for duration of construction.

**1.03 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Shop Drawing: Show content, layout, lettering, color, foundation, structure, sizes and grades of members.

**PART 2 PRODUCTS**

**2.01 SIGN MATERIALS**

- A. Structure and Framing: New, wood, structurally adequate.
- B. Sign Surfaces: Exterior grade plywood with medium density overlay, minimum 3/4 inch thick, standard large sizes to minimize joints.
- C. Rough Hardware: Galvanized.
- D. Paint and Primers: Exterior quality, two coats; sign background of white color.
- E. Lettering: Exterior quality paint, contrasting colors.
- F. Lettering: Pre-cut vinyl self-adhesive products, white.

**2.02 PROJECT IDENTIFICATION SIGN**

- A. One painted sign of construction, design, and content indicated on drawings, location designated.

**PART 3 EXECUTION**

**3.01 INSTALLATION**

- A. Install project identification sign within 30 days after date fixed by Notice to Proceed.
- B. Erect at designated location.
- C. Erect supports and framing on secure foundation, rigidly braced and framed to resist wind loadings.
- D. Install sign surface plumb and level, with butt joints. Anchor securely.

**3.02 MAINTENANCE**

- A. Maintain signs and supports clean, repair deterioration and damage.

**3.03 REMOVAL**

- A. Remove signs, framing, supports, and foundations at completion of Project and restore the area.

**END OF SECTION**

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**SECTION 01 6000  
PRODUCT REQUIREMENTS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Re-use of existing products.
- B. Transportation, handling, storage and protection.
- C. Product option requirements.
- D. Substitution limitations.
- E. Maintenance materials, including extra materials, spare parts, tools, and software.

**1.02 RELATED REQUIREMENTS**

- A. Section 01 4000 - Quality Requirements: Product quality monitoring.

**PART 2 PRODUCTS**

**2.01 EXISTING PRODUCTS**

- A. Do not use materials and equipment removed from existing premises unless specifically required or permitted by Contract Documents.
- B. Unforeseen historic items encountered remain the property of the Owner; notify Owner promptly upon discovery; protect, remove, handle, and store as directed by Owner.
- C. Existing materials and equipment indicated to be removed, but not to be re-used, relocated, reinstalled, delivered to the Owner, or otherwise indicated as to remain the property of the Owner, become the property of the Contractor; remove from site.

**2.02 NEW PRODUCTS**

- A. Provide new products unless specifically required or permitted by Contract Documents.
- B. See Section 01 4000 - Quality Requirements, for additional source quality control requirements.
- C. Use of products having any of the following characteristics is not permitted:
  - 1. Made outside the United States, its territories, Canada, or Mexico.
  - 2. Made using or containing CFC's or HCFC's.
  - 3. Made of wood from newly cut old growth timber.
  - 4. Containing lead, cadmium, or asbestos.

**2.03 PRODUCT OPTIONS**

- A. Products Specified by Reference Standards or by Description Only: Use any product meeting those standards or description.
- B. Products Specified by Naming One or More Manufacturers: Use a product of one of the manufacturers named and meeting specifications, no options or substitutions allowed.
- C. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named.

**2.04 MAINTENANCE MATERIALS**

- A. Furnish extra materials, spare parts, tools, and software of types and in quantities specified in individual specification sections.
- B. Deliver to Project site; obtain receipt prior to final payment.

**PART 3 EXECUTION**

**3.01 TRANSPORTATION AND HANDLING**

- A. Package products for shipment in manner to prevent damage; for equipment, package to avoid loss of factory calibration.
- B. If special precautions are required, attach instructions prominently and legibly on outside of packaging.

- C. Coordinate schedule of product delivery to designated prepared areas in order to minimize site storage time and potential damage to stored materials.
- D. Transport and handle products in accordance with manufacturer's instructions.
- E. Transport materials in covered trucks to prevent contamination of product and littering of surrounding areas.
- F. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.
- G. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage, and to minimize handling.
- H. Arrange for the return of packing materials, such as wood pallets, where economically feasible.

### **3.02 STORAGE AND PROTECTION**

- A. Provide protection of stored materials and products against theft, casualty, or deterioration.
- B. Designate receiving/storage areas for incoming products so that they are delivered according to installation schedule and placed convenient to work area in order to minimize waste due to excessive materials handling and misapplication. See Section 01 7419.
- C. Store and protect products in accordance with manufacturers' instructions.
- D. Store with seals and labels intact and legible.
- E. Arrange storage of materials and products to allow for visual inspection for the purpose of determination of quantities, amounts, and unit counts.
- F. Store sensitive products in weathertight, climate-controlled enclosures in an environment favorable to product.
- G. For exterior storage of fabricated products, place on sloped supports above ground.
- H. Protect products from damage or deterioration due to construction operations, weather, precipitation, humidity, temperature, sunlight and ultraviolet light, dirt, dust, and other contaminants.
- I. Comply with manufacturer's warranty conditions, if any.
- J. Do not store products directly on the ground.
- K. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.
- L. Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.
- M. Prevent contact with material that may cause corrosion, discoloration, or staining.
- N. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.
- O. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

### **END OF SECTION**

**SECTION 01 6116.01  
MATERIAL VOC CONTENT CERTIFICATION FORM**

**1.01 CERTIFIED BY: (INSTALLER/MANUFACTURER/SUPPLIER FIRM)**

- A. Firm Name: \_\_\_\_\_
- B. Print Name: \_\_\_\_\_
- C. Signature: \_\_\_\_\_
- D. Title: \_\_\_\_\_ (officer of company)
- E. Date: \_\_\_\_\_

**END OF SECTION**

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**SECTION 01 6116  
VOLATILE ORGANIC COMPOUND (VOC) CONTENT RESTRICTIONS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Requirements for VOC-Content-Restricted products.
- B. Requirement for installer certification that they did not use any non-compliant products.

**1.02 RELATED REQUIREMENTS**

- A. Section 01 3000 - Administrative Requirements: Submittal procedures.

**1.03 DEFINITIONS**

- A. VOC-Content-Restricted Products: All products in the following product categories, whether specified or not:
  - 1. Interior paints and coatings applied on site.
  - 2. Interior adhesives and sealants applied on site, including flooring adhesives.
- B. Interior of Building: Anywhere inside the exterior weather barrier.
- C. Adhesives: All gunnable, trowelable, liquid-applied, and aerosol adhesives, whether specified or not; including flooring adhesives, resilient base adhesives, and pipe jointing adhesives.
- D. Sealants: All gunnable, trowelable, and liquid-applied joint sealants and sealant primers, whether specified or not; including firestopping sealants and duct joint sealers.

**1.04 REFERENCE STANDARDS**

- A. 40 CFR 59, Subpart D - National Volatile Organic Compound Emission Standards for Architectural Coatings; U.S. Environmental Protection Agency current edition.
- B. ASTM D3960 - Standard Practice for Determining Volatile Organic Compound (VOC) Content of Paints and Related Coatings 2005 (Reapproved 2018).
- C. CARB (SCM) - Suggested Control Measure for Architectural Coatings; California Air Resources Board 2019.
- D. SCAQMD 1113 - Architectural Coatings 1977 (Amended 2016).
- E. SCAQMD 1168 - Adhesive and Sealant Applications 1989 (Amended 2017).

**1.05 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: For each VOC-restricted product used in the project, submit evidence of compliance.
- C. Installer Certifications Regarding Prohibited Content: Require each installer of any type of product (not just the products for which VOC restrictions are specified) to certify that either 1) no adhesives, joint sealants, paints, coatings, or composite wood or agrifiber products have been used in the installation of installer's products, or 2) that such products used comply with these requirements.

**1.06 QUALITY ASSURANCE**

- A. VOC Content Test Method: 40 CFR 59, Subpart D (EPA Method 24), or ASTM D3960, unless otherwise indicated.
  - 1. Evidence of Compliance: Acceptable types of evidence are:
    - a. Report of laboratory testing performed in accordance with requirements.
- B. Testing Agency Qualifications: Independent firm specializing in performing testing and inspections of the type specified in this section.

## **PART 2 PRODUCTS**

### **2.01 MATERIALS**

- A. VOC-Content-Restricted Products: VOC content not greater than required by the following:
  - 1. Adhesives, Including Flooring Adhesives: SCAQMD 1168 Rule.
  - 2. Joint Sealants: SCAQMD 1168 Rule.
  - 3. Paints and Coatings: Each color; most stringent of the following:
    - a. 40 CFR 59, Subpart D.
    - b. SCAQMD 1113 Rule.
    - c. CARB (SCM).

## **PART 3 EXECUTION**

### **3.01 FIELD QUALITY CONTROL**

- A. Owner reserves the right to reject non-compliant products, whether installed or not, and require their removal and replacement with compliant products at no extra cost to Owner.
- B. Additional costs to restore indoor air quality due to installation of non-compliant products will be borne by Contractor.

**END OF SECTION**



**SECTION 01 7000  
EXECUTION AND CLOSEOUT REQUIREMENTS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Examination, preparation, and general installation procedures.
- B. Requirements for alterations work, including selective demolition, [\_\_\_\_\_].
- C. Cutting and patching.
- D. Surveying for laying out the work.
- E. Cleaning and protection.
- F. Starting of systems and equipment.
- G. Demonstration and instruction of Owner personnel.
- H. Closeout procedures, including Contractor's Correction Punch List, except payment procedures.
- I. General requirements for maintenance service.

**1.02 RELATED REQUIREMENTS**

- A. Section 01 1000 - Summary: Limitations on working in existing building; continued occupancy; work sequence; identification of salvaged and relocated materials.
- B. Section 01 4000 - Quality Requirements: Testing and inspection procedures.
- C. Section 01 5000 - Temporary Facilities and Controls: Temporary exterior enclosures.
- D. Section 01 5000 - Temporary Facilities and Controls: Temporary interior partitions.
- E. Section 01 7800 - Closeout Submittals: Project record documents, operation and maintenance data, warranties, and bonds.
- F. Section 01 7900 - Demonstration and Training: Demonstration of products and systems to be commissioned and where indicated in specific specification sections
- G. Section 07 8400 - Firestopping.

**1.03 REFERENCE STANDARDS**

- A. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations 2022.

**1.04 QUALIFICATIONS**

**1.05 PROJECT CONDITIONS**

- A. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.
- B. Dust Control: Execute work by methods to minimize raising dust from construction operations. Provide positive means to prevent air-borne dust from dispersing into atmosphere and over adjacent property.
- C. Noise Control: Provide methods, means, and facilities to minimize noise produced by construction operations.
- D. Pest and Rodent Control: Provide methods, means, and facilities to prevent pests and insects from damaging the work.
- E. Pollution Control: Provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations. Comply with federal, state, and local regulations.

## **1.06 COORDINATION**

- A. Coordinate scheduling, submittals, and work of the various sections of the Project Manual to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.
- B. Notify affected utility companies and comply with their requirements.
- C. Verify that utility requirements and characteristics of new operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.
- D. Coordinate space requirements, supports, and installation of mechanical and electrical work that are indicated diagrammatically on drawings. Follow routing indicated for pipes, ducts, and conduit, as closely as practicable; place runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
- E. In finished areas except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.
- F. Coordinate completion and clean-up of work of separate sections.
- G. After Owner occupancy of premises, coordinate access to site for correction of defective work and work not in accordance with Contract Documents, to minimize disruption of Owner's activities.

## **PART 2 PRODUCTS**

### **2.01 PATCHING MATERIALS**

- A. New Materials: As specified in product sections; match existing products and work for patching and extending work.
- B. Type and Quality of Existing Products: Determine by inspecting and testing products where necessary, referring to existing work as a standard.
- C. Product Substitution: For any proposed change in materials, submit request for substitution described in Section 01 6000 - Product Requirements.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that existing site conditions and substrate surfaces are acceptable for subsequent work. Start of work means acceptance of existing conditions.
- B. Verify that existing substrate is capable of structural support or attachment of new work being applied or attached.
- C. Examine and verify specific conditions described in individual specification sections.
- D. Take field measurements before confirming product orders or beginning fabrication, to minimize waste due to over-ordering or misfabrication.
- E. Verify that utility services are available, of the correct characteristics, and in the correct locations.
- F. Prior to Cutting: Examine existing conditions prior to commencing work, including elements subject to damage or movement during cutting and patching. After uncovering existing work, assess conditions affecting performance of work. Beginning of cutting or patching means acceptance of existing conditions.

### **3.02 PREPARATION**

- A. Clean substrate surfaces prior to applying next material or substance.
- B. Seal cracks or openings of substrate prior to applying next material or substance.
- C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

### **3.03 LAYING OUT THE WORK**

### **3.04 GENERAL INSTALLATION REQUIREMENTS**

- A. Install products as specified in individual sections, in accordance with manufacturer's instructions and recommendations, and so as to avoid waste due to necessity for replacement.
- B. Make vertical elements plumb and horizontal elements level, unless otherwise indicated.
- C. Install equipment and fittings plumb and level, neatly aligned with adjacent vertical and horizontal lines, unless otherwise indicated.
- D. Make consistent texture on surfaces, with seamless transitions, unless otherwise indicated.
- E. Make neat transitions between different surfaces, maintaining texture and appearance.

### **3.05 ALTERATIONS**

- A. Drawings showing existing construction and utilities are based on casual field observation and existing record documents only.
  - 1. Verify that construction and utility arrangements are as indicated.
  - 2. Report discrepancies to Architect before disturbing existing installation.
  - 3. Beginning of alterations work constitutes acceptance of existing conditions.
- B. Remove existing work as indicated and as required to accomplish new work.
  - 1. Remove items indicated on drawings.
  - 2. Relocate items indicated on drawings.
  - 3. Where new surface finishes are to be applied to existing work, perform removals, patch, and prepare existing surfaces as required to receive new finish; remove existing finish if necessary for successful application of new finish.
  - 4. Where new surface finishes are not specified or indicated, patch holes and damaged surfaces to match adjacent finished surfaces as closely as possible.
- C. Services (Including but not limited to ): Remove, relocate, and extend existing systems to accommodate new construction.
  - 1. Maintain existing active systems that are to remain in operation; maintain access to equipment and operational components; if necessary, modify installation to allow access or provide access panel.
  - 2. Where existing systems or equipment are not active and Contract Documents require reactivation, put back into operational condition; repair supply, distribution, and equipment as required.
  - 3. Where existing active systems serve occupied facilities but are to be replaced with new services, maintain existing systems in service until new systems are complete and ready for service.
    - a. Disable existing systems only to make switchovers and connections; minimize duration of outages.
    - b. Provide temporary connections as required to maintain existing systems in service.
  - 4. Verify that abandoned services serve only abandoned facilities.
  - 5. Remove abandoned pipe, ducts, conduits, and equipment , including those above accessible ceilings; remove back to source of supply where possible, otherwise cap stub and tag with identification; patch holes left by removal using materials specified for new construction.
- D. Protect existing work to remain.
  - 1. Prevent movement of structure; provide shoring and bracing if necessary.
  - 2. Perform cutting to accomplish removals neatly and as specified for cutting new work.
  - 3. Repair adjacent construction and finishes damaged during removal work.
- E. Adapt existing work to fit new work: Make as neat and smooth transition as possible.
- F. Patching: Where the existing surface is not indicated to be refinished, patch to match the surface finish that existed prior to cutting. Where the surface is indicated to be refinished, patch so that the substrate is ready for the new finish.

- G. Refinish existing surfaces as indicated:
  - 1. Where rooms or spaces are indicated to be refinished, refinish all visible existing surfaces to remain to the specified condition for each material, with a neat transition to adjacent finishes.
  - 2. If mechanical or electrical work is exposed accidentally during the work, re-cover and refinish to match.
- H. Clean existing systems and equipment.
- I. Remove demolition debris and abandoned items from alterations areas and dispose of off-site; do not burn or bury.
- J. Do not begin new construction in alterations areas before demolition is complete.
- K. Comply with all other applicable requirements of this section.

### **3.06 CUTTING AND PATCHING**

- A. Whenever possible, execute the work by methods that avoid cutting or patching.
- B. See Alterations article above for additional requirements.
- C. Perform whatever cutting and patching is necessary to:
  - 1. Complete the work.
  - 2. Fit products together to integrate with other work.
  - 3. Provide openings for penetration of mechanical, electrical, and other services.
  - 4. Match work that has been cut to adjacent work.
  - 5. Repair areas adjacent to cuts to required condition.
  - 6. Repair new work damaged by subsequent work.
  - 7. Remove samples of installed work for testing when requested.
  - 8. Remove and replace defective and non-complying work.
- D. Execute work by methods that avoid damage to other work and that will provide appropriate surfaces to receive patching and finishing. In existing work, minimize damage and restore to original condition.
- E. Employ original installer to perform cutting for weather exposed and moisture resistant elements, and sight exposed surfaces.
- F. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval.
- G. Restore work with new products in accordance with requirements of Contract Documents.
- H. Fit work air tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- I. At penetrations of fire rated walls, partitions, ceiling, or floor construction, completely seal voids with fire rated material in accordance with Section 07 8400, to full thickness of the penetrated element.
- J. Patching:
  - 1. Finish patched surfaces to match finish that existed prior to patching. On continuous surfaces, refinish to nearest intersection or natural break. For an assembly, refinish entire unit.
  - 2. Match color, texture, and appearance.
  - 3. Repair patched surfaces that are damaged, lifted, discolored, or showing other imperfections due to patching work. If defects are due to condition of substrate, repair substrate prior to repairing finish.

### **3.07 PROGRESS CLEANING**

- A. Maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.
- B. Remove debris and rubbish from pipe chases, plenums, attics, crawl spaces, and other closed or remote spaces, prior to enclosing the space.

- C. Broom and vacuum clean interior areas prior to start of surface finishing, and continue cleaning to eliminate dust.
- D. Collect and remove waste materials, debris, and trash/rubbish from site periodically and dispose off-site; do not burn or bury.

### **3.08 PROTECTION OF INSTALLED WORK**

- A. Protect installed work from damage by construction operations.
- B. Provide special protection where specified in individual specification sections.
- C. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.
- D. Provide protective coverings at walls, projections, jambs, sills, and soffits of openings.
- E. Protect finished floors, stairs, and other surfaces from traffic, dirt, wear, damage, or movement of heavy objects, by protecting with durable sheet materials.
- F. Prohibit traffic or storage upon waterproofed or roofed surfaces. If traffic or activity is necessary, obtain recommendations for protection from waterproofing or roofing material manufacturer.
- G. Remove protective coverings when no longer needed; reuse or recycle coverings if possible.

### **3.09 SYSTEM STARTUP**

- A. Coordinate schedule for start-up of various equipment and systems.
- B. Verify that each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, and for conditions that may cause damage.
- C. Verify tests, meter readings, and specified electrical characteristics agree with those required by the equipment or system manufacturer.
- D. Verify that wiring and support components for equipment are complete and tested.
- E. Execute start-up under supervision of applicable Contractor personnel and manufacturer's representative in accordance with manufacturers' instructions.
- F. When specified in individual specification Sections, require manufacturer to provide authorized representative to be present at site to inspect, check, and approve equipment or system installation prior to start-up, and to supervise placing equipment or system in operation.
- G. Submit a written report that equipment or system has been properly installed and is functioning correctly.

### **3.10 DEMONSTRATION AND INSTRUCTION**

- A. See Section 01 7900 - Demonstration and Training.

### **3.11 ADJUSTING**

- A. Adjust operating products and equipment to ensure smooth and unhindered operation.

### **3.12 FINAL CLEANING**

- A. Use cleaning materials that are nonhazardous.
- B. Clean interior and exterior glass, surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.
- C. Remove all labels that are not permanent. Do not paint or otherwise cover fire test labels or nameplates on mechanical and electrical equipment.
- D. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.
- E. Clean filters of operating equipment.
- F. Clean site; sweep paved areas, rake clean landscaped surfaces.

- G. Remove waste, surplus materials, trash/rubbish, and construction facilities from the site; dispose of in legal manner; do not burn or bury.

### **3.13 CLOSEOUT PROCEDURES**

- A. Make submittals that are required by governing or other authorities.
- B. Accompany Project Coordinator on preliminary inspection to determine items to be listed for completion or correction in the Contractor's Correction Punch List for Contractor's Notice of Substantial Completion.
- C. Notify Architect when work is considered ready for Architect's Substantial Completion inspection.
- D. Submit written certification containing Contractor's Correction Punch List, that Contract Documents have been reviewed, work has been inspected, and that work is complete in accordance with Contract Documents and ready for Architect's Substantial Completion inspection.
- E. Conduct Substantial Completion inspection and create Final Correction Punch List containing Architect's and Contractor's comprehensive list of items identified to be completed or corrected and submit to Architect.
- F. Correct items of work listed in Final Correction Punch List and comply with requirements for access to Owner-occupied areas.
- G. Notify Architect when work is considered finally complete and ready for Architect's Substantial Completion final inspection.
- H. Complete items of work determined by Architect listed in executed Certificate of Substantial Completion.

### **3.14 MAINTENANCE**

- A. Provide service and maintenance of components indicated in specification sections.
- B. Maintenance Period: As indicated in specification sections or, if not indicated, not less than one year from the Date of Substantial Completion or the length of the specified warranty, whichever is longer.
- C. Examine system components at a frequency consistent with reliable operation. Clean, adjust, and lubricate as required.
- D. Maintenance service shall not be assigned or transferred to any agent or subcontractor without prior written consent of the Owner.

**END OF SECTION**

**SECTION 01 7329  
CUTTING AND PATCHING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Requirements of this Section apply to each Prime Contractor and their subcontractors to perform all cutting, patching, matching, trenching, excavating, and backfilling as indicated on the Contract Drawings or as required for the installation of Work of their Contract where this Work is not specifically indicated to be performed by others.
- B. Work included, but not necessarily limited to:
  - 1. Make the parts fit properly.
  - 2. Uncover Work to provide for installation, inspection, or of ill-timed Work.
  - 3. Remove and replace Work not conforming to requirements of the Contract Documents.
  - 4. Remove and replace Defective Work.
  - 5. Provide all required cutting, patching, matching, trenching, excavating, and backfilling as required to perform the Work of their Contract, except specifically noted otherwise on the Contract Drawings.
  - 6. All cutting and patching required to incorporate existing Work or equipment with installation of new Work.
  - 7. General Contractor shall review all Contract Drawings for all penetrations they are required to provide, as outlined in Article 1.05, A., 2., of this Section, for other Prime Contractors and their subcontractors and provide penetrations where not shown on Architectural Drawings.
  - 8. In addition to other requirements specified, upon the Architect/Engineer's request, uncover Work to provide for inspection by the Architect/Engineer of covered Work and remove samples of installed materials for testing.
  - 9. Do not cut or alter Work performed under separate contract without the Architect/Engineer's written permission.

**1.02 RELATED SECTIONS**

- A. Section 02 4119 - Minor Demolition.
- B. Section 31 2200 - Grading.
- C. Section 31 2316 - Excavation.
- D. Section 31 2323 - Fill.

**1.03 DEFINITIONS**

- A. Cutting: Remove portions of the construction, its equipment, or site elements with extreme care to preserve the finish or the function of that portion which remains, because the cutting is done with the knowledge and intention that this remaining portion will be patched or restored to approximately its previous condition.
- B. Patching: Replacement, Fitting, and Repair Work required to restore substrates and surfaces to original conditions after installation of Work of the Contract.
- C. Demolition: The complete wrecking or removal of existing elements of the building and subsequent alteration or change in that which remains.

**1.04 SUBMITTALS**

- A. See Section 01 3300 - Submittal Procedures for submittal process.

**1.05 CUTTING, PATCHING AND DEMOLITION**

- A. Coordination:
  - 1. Prime Contractors and their Subcontractors shall be responsible for the timely and accurate layout of their Work that involves cutting of raised floors or roof systems of either the existing or new building by the General Contractor as described in Article 1.05, A., 2., and shall provide the General Contractor with this information.

2. The General Contractor shall be responsible for cutting and patching operations of surfaces including raised floors and roof systems as noted on the drawings or as required to complete the Work to be provided by the other Prime Contractors and their subcontractors for openings requiring drilling of holes 10 inches or greater in diameter or cutting openings of 100 square inches or greater for piping, conduit, ductwork, and other openings required for the installation of new Work by other Prime Contractors and their Subcontractors.
3. Prime Contractors and their subcontractors shall be responsible for cutting and patching of holes or openings of lesser dimensions as noted in Article 1.05, A., 2., above unless otherwise noted on the Contract Drawings.
4. Any openings required to be cut through the roof system shall be performed by a certified roofing installer. These openings shall include the installation of headers and blocking to support remaining deck and other material above.
5. All openings in walls shall include installation of headers or lintels as required to support wall material and masonry above opening.
6. All openings in floors shall include the installation of headers and bracing to support the remaining floor and other materials above.
7. All Prime Contractors and their subcontractors shall be responsible for all patching of areas of cutting, except as noted in Article 1.05, A., 2., above or otherwise specifically noted on the Contract Drawings.
8. Patching shall be done in a manner that disturbed surfaces are restored to their original condition.
  - a. Brick, CMU, and glazed tile unit walls shall be repaired by replacing whole masonry units in area of cutting to match surrounding walls.
  - b. Lay-in acoustic ceiling tiles and tee grid removed to execute the Work of this Contract shall be replaced upon the completion of the Work. All acoustic tiles and tee grid members damaged by the Work of this Contract shall be replaced by the General Contractor. Tile units replaced shall match existing tile units in color and texture.
  - c. Plaster and gypsum wallboard walls and ceilings shall be patched or replaced to the closest stud and painted to restore to original condition.
  - d. Wall finishes such as ceramic tile and wall paper shall be patched or replaced to the nearest tile and the wallpaper shall be patched to the nearest seam.
  - e. Finished flooring surfaces including sheet vinyl, VCT, terrazzo, ceramic or quarry tile, and underlying concrete shall be patched or replaced by replacing whole units to the nearest joint or divider strip.

#### **1.06 QUALITY ASSURANCE**

- A. Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio.
- B. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that result in increased maintenance or decreased operational life or safety.
- C. Fire Rated Elements: Do not cut and patch fire rated elements (i.e., floors, walls, roofs, shafts, etc.) in a manner that results in reducing their capacity to perform as intended or that results in decreased fire rating.
- D. Miscellaneous Elements: Do not cut and patch miscellaneous elements or related components in a manner that could change their load-carrying capacity, which results in reducing their capacity to perform as intended, or that result in increased maintenance or decreased operational life or safety.
- E. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in the Design Professional's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.



- F. Cutting and Patching Conference: Before proceeding, meet at Project Site with parties involved in cutting and patching, including other Trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

## **1.07 WARRANTY**

- A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during cutting and patching operations, by methods and with materials so as not to void existing warranties.

## **PART 2 PRODUCTS**

### **2.01 MANUFACTURERS**

- A. General: For replacement of Work removed, use materials to match new or existing adjacent surfaces which comply with the pertinent sections of these specifications.
- B. In-Place Materials: Use materials identical to in-place materials. For exposed surfaces, use materials that visually match in-place adjacent surfaces to the fullest extent possible.
  - 1. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of in-place materials, unless specified otherwise in other Sections.
- C. Fire Rated Elements: Provide firestopping products/systems specified in system design listings by approved testing agencies that conform to the construction type, penetrating item, annular space requirements and fire rating involved in each separate assembly. Refer to applicable Individual Specification Sections.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Inspection:
  - 1. Inspect existing conditions, including elements subject to movement or damage during cutting, excavating, backfilling, and patching.
  - 2. After uncovering the Work, inspect conditions affecting installation of new Work.
- B. Compatibility:
  - 1. Before patching, verify compatibility with and suitability of substrates, including compatibility with in-place finishes or primers.
- C. Discrepancies:
  - 1. If uncovered conditions are not as anticipated, immediately notify the Architect/Engineer and secure needed directions.
  - 2. Do not proceed in areas of discrepancy until all such discrepancies have been fully resolved.

### **3.02 PREPARATION PRIOR TO CUTTING**

- A. Temporary Support: Provide temporary support of Work to be cut.
- B. Protection: Protect in-place construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.
- C. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.
- D. Existing Utility Services and Mechanical/Electrical/Plumbing Systems: Where existing services/systems are required to be removed, relocated, or abandoned, bypass such services/systems before cutting or patching to minimize interruption to occupied areas.

### **3.03 PERFORMANCE**

- A. Perform all required trenching, excavating and backfilling as required for all Work unless otherwise indicated in pertinent Sections of these Specifications. Perform cutting and demolition by methods which will prevent damage to other portions of the Work and will provide proper surfaces to receive installation of repair and new Work.

- B. Cut rigid materials using masonry saw or core drill. Pneumatic tools not allowed without prior approval to avoid marring or damaging existing finishes. Cut or drill from the exposed or finished side into concealed surfaces.
- C. Cut through concrete and masonry using a cutting machine such as a carborundum saw or diamond core drill. Dampen as required to minimize dust.
- D. Bypass utility services such as pipe or conduit before cutting where services are shown or required to be removed, relocated, or abandoned. Cut-off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal the remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after bypassing and cutting.
- E. Restore Work with new products in accordance with requirements of Contract Documents.
- F. Cutting: Cut in-place construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction.
  - 1. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.
  - 2. In fire rated assemblies cut opening only to the size required to provide the annular spacing for the required fire stopping system.
  - 3. Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.
  - 4. Concrete or Masonry: Cut using a cutting machine (i.e., an abrasive saw or a diamond-core drill).
  - 5. Mechanical and Electrical Services: Cut off pipe or conduit in walls or partitions to be removed. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting.
  - 6. Proceed with patching after construction operations requiring cutting are complete.
- G. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections.
  - 1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.
  - 2. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate evidence of patching and refinishing.
    - a. Clean piping, conduit, and similar features before applying paint or other finishing materials.
    - b. Restore damaged pipe covering to its original condition.
  - 3. Floors and Walls: Where walls or partitions that are removed extend one (1) finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove in-place floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
    - a. Where patching occurs in a painted surface, apply primer and intermediate paint coats over the patch and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.
  - 4. Ceilings: Patch, repair, or rehang in-place ceilings as necessary to provide an even-plane surface of uniform appearance.
  - 5. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition.
  - 6. Fire Rated Elements: Install firestopping systems to comply with applicable Individual Specification Sections and firestopping manufacturer's written installation instructions and published Drawings for products and applications.

- H. Refinish surfaces to match adjacent finish. For continuous surfaces, refinish to nearest corner, intersection or natural break. For an assembly, refinish entire unit.
- I. Perform fitting and adjustment of products to provide finished installation complying with the specified tolerances and finishes.
- J. Where no detail is provided, the Prime Contractor shall patch areas disturbed, as required by the execution of their Contract, with systems and materials of similar composition to match existing adjacent systems and materials, subject to approval by Architect/Engineer.

#### **3.04 INTERFACE WITH OTHER WORK**

- A. Coordinate as required with other Trades to assure proper and adequate provision in the Work for those Trades that interface with the Work of this Section.

#### **3.05 CLEANING**

- A. Each Contractor shall be responsible for thoroughly cleaning area upon the completion of cutting and patching operations. Thoroughly clean adjacent surrounding surfaces of all dust debris, oil residue, moisture, and patching materials prior to new finishes being installed and upon completion of final finishing.

**END OF SECTION**

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**SECTION 01 7800  
CLOSEOUT SUBMITTALS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Project Record Documents.
- B. Operation and Maintenance Data.
- C. Warranties and bonds.

**1.02 RELATED REQUIREMENTS**

- A. Section 01 3000 - Administrative Requirements: Submittals procedures, shop drawings, product data, and samples.
- B. Section 01 7000 - Execution and Closeout Requirements: Contract closeout procedures.
- C. Individual Product Sections: Specific requirements for operation and maintenance data.
- D. Individual Product Sections: Warranties required for specific products or Work.

**1.03 SUBMITTALS**

- A. Project Record Documents: Submit documents to Architect with claim for final Application for Payment.
- B. Operation and Maintenance Data:
  - 1. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit completed documents within ten days after acceptance.
  - 2. Submit one copy of completed documents 15 days prior to final inspection. This copy will be reviewed and returned after final inspection, with Architect comments. Revise content of all document sets as required prior to final submission.
  - 3. Submit two sets of revised final documents in final form within 10 days after final inspection.
- C. Warranties and Bonds:
  - 1. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within 10 days after acceptance.
  - 2. Make other submittals within 10 days after Date of Substantial Completion, prior to final Application for Payment.
  - 3. For items of Work for which acceptance is delayed beyond Date of Substantial Completion, submit within 10 days after acceptance, listing the date of acceptance as the beginning of the warranty period.

**PART 2 PRODUCTS - NOT USED**

**PART 3 EXECUTION**

**3.01 PROJECT RECORD DOCUMENTS**

- A. Maintain on site one set of the following record documents; record actual revisions to the Work:
  - 1. Drawings.
  - 2. Specifications.
  - 3. Addenda.
  - 4. Change Orders and other modifications to the Contract.
  - 5. Reviewed shop drawings, product data, and samples.
  - 6. Manufacturer's instruction for assembly, installation, and adjusting.
- B. Ensure entries are complete and accurate, enabling future reference by Owner.
- C. Store record documents separate from documents used for construction.
- D. Record information concurrent with construction progress.
- E. Specifications: Legibly mark and record at each product section description of actual products installed, including the following:
  - 1. Manufacturer's name and product model and number.

2. Product substitutions or alternates utilized.
  3. Changes made by Addenda and modifications.
- F. Record Drawings and Shop Drawings: Legibly mark each item to record actual construction including:
1. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
  2. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
  3. Field changes of dimension and detail.
  4. Details not on original Contract drawings.

### **3.02 OPERATION AND MAINTENANCE DATA**

- A. Source Data: For each product or system, list names, addresses and telephone numbers of Subcontractors and suppliers, including local source of supplies and replacement parts.
- B. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.
- C. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Do not use Project Record Documents as maintenance drawings.
- D. Typed Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions.

### **3.03 OPERATION AND MAINTENANCE DATA FOR MATERIALS AND FINISHES**

- A. For Each Product, Applied Material, and Finish:
  1. Product data, with catalog number, size, composition, and color and texture designations.
- B. Instructions for Care and Maintenance: Manufacturer's recommendations for cleaning agents and methods, precautions against detrimental cleaning agents and methods, and recommended schedule for cleaning and maintenance.
- C. Additional information as specified in individual product specification sections.
- D. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.

### **3.04 OPERATION AND MAINTENANCE DATA FOR EQUIPMENT AND SYSTEMS**

- A. For Each Item of Equipment and Each System:
  1. Description of unit or system, and component parts.
  2. Identify function, normal operating characteristics, and limiting conditions.
  3. Include performance curves, with engineering data and tests.
  4. Complete nomenclature and model number of replaceable parts.
- B. Where additional instructions are required, beyond the manufacturer's standard printed instructions, have instructions prepared by personnel experienced in the operation and maintenance of the specific products.
- C. Panelboard Circuit Directories: Provide electrical service characteristics, controls, and communications; typed.
- D. Include color coded wiring diagrams as installed.
- E. Operating Procedures: Include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and any special operating instructions.
- F. Maintenance Requirements: Include routine procedures and guide for preventative maintenance and trouble shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
- G. Provide servicing and lubrication schedule, and list of lubricants required.

- H. Include manufacturer's printed operation and maintenance instructions.
- I. Include sequence of operation by controls manufacturer.
- J. Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
- K. Provide control diagrams by controls manufacturer as installed.
- L. Provide Contractor's coordination drawings, with color coded piping diagrams as installed.
- M. Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.
- N. Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.
- O. Include test and balancing reports.
- P. Additional Requirements: As specified in individual product specification sections.

### **3.05 ASSEMBLY OF OPERATION AND MAINTENANCE MANUALS**

- A. Assemble operation and maintenance data into durable manuals for Owner's personnel use, with data arranged in the same sequence as, and identified by, the specification sections.
- B. Where systems involve more than one specification section, provide separate tabbed divider for each system.
- C. Binders: Commercial quality, 8-1/2 by 11 inch three D side ring binders with durable plastic covers; 2 inch maximum ring size. When multiple binders are used, correlate data into related consistent groupings.
- D. Cover: Identify each binder with typed or printed title OPERATION AND MAINTENANCE INSTRUCTIONS; identify title of Project; identify subject matter of contents.
- E. Project Directory: Title and address of Project; names, addresses, and telephone numbers of Architect, Consultants, Contractor and subcontractors, with names of responsible parties.
- F. Tables of Contents: List every item separated by a divider, using the same identification as on the divider tab; where multiple volumes are required, include all volumes Tables of Contents in each volume, with the current volume clearly identified.
- G. Dividers: Provide tabbed dividers for each separate product and system; identify the contents on the divider tab; immediately following the divider tab include a description of product and major component parts of equipment.
- H. Text: Manufacturer's printed data, or typewritten data on 20 pound paper.
- I. Drawings: Provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.
- J. Arrangement of Contents: Organize each volume in parts as follows:
  - 1. Project Directory.
  - 2. Table of Contents, of all volumes, and of this volume.
  - 3. Operation and Maintenance Data: Arranged by system, then by product category.
    - a. Source data.
    - b. Product data, shop drawings, and other submittals.
    - c. Operation and maintenance data.
    - d. Field quality control data.
    - e. Photocopies of warranties and bonds.
  - 4. Design Data: To allow for addition of design data furnished by Architect or others, provide a tab labeled "Design Data" and provide a binder large enough to allow for insertion of at least 20 pages of typed text.

### **3.06 WARRANTIES AND BONDS**

- A. Obtain warranties and bonds, executed in duplicate by responsible Subcontractors, suppliers, and manufacturers, within 10 days after completion of the applicable item of work. Except for

items put into use with Owner's permission, leave date of beginning of time of warranty until Date of Substantial completion is determined.

- B. Verify that documents are in proper form, contain full information, and are notarized.
- C. Co-execute submittals when required.
- D. Retain warranties and bonds until time specified for submittal.
- E. Manual: Bind in commercial quality 8-1/2 by 11 inch three D side ring binders with durable plastic covers.
- F. Cover: Identify each binder with typed or printed title WARRANTIES AND BONDS, with title of Project; name, address and telephone number of Contractor and equipment supplier; and name of responsible company principal.
- G. Table of Contents: Neatly typed, in the sequence of the Table of Contents of the Project Manual, with each item identified with the number and title of the specification section in which specified, and the name of product or work item.
- H. Separate each warranty or bond with index tab sheets keyed to the Table of Contents listing. Provide full information, using separate typed sheets as necessary. List Subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.

**END OF SECTION**



**PROJECT CLOSEOUT  
CHECK LIST**

Project: Port Jervis City School District  
Additions & Alterations to PJMS Project No. 2019-011 PH1

Contract: \_\_\_\_\_ Contract Date: \_\_\_\_\_

Contractor: \_\_\_\_\_  
Name Telephone

\_\_\_\_\_  
Address

\_\_\_\_\_

=====

After the Contractor has met all of his obligation of the Contract and is ready to submit the "Final Application for Payment" (as defined in the General and Supplementary Conditions), he is responsible for providing the following items along with the Final Payment to the Engineer (Please note that these shall be provided in one full package, partial submissions of these items will be not be allowed):

- 1) Consent of Surety to Reduction in or Partial Release of Retainage, AIA Document G707A.
- 2) Consent of Surety to Final Payment, AIA Document G707.
- 3) Contractor's Affidavit of Release of Liens, AIA Document G706A (one copy required from all subcontractors).
- 4) Contractor's Affidavit of Payment of Debts and Claims. AIA Document G706. (one copy required from all subcontractors).
- 5) Warranty of Title: (sample letter enclosed).
- 6) Certification: Signed and notarized certification that no asbestos containing materials have been used in the construction (enclosed).
- 7) Insurance:
  - a) All policies of insurance required at the commencement of the project shall remain in effect at all times after final payment, when the Contractor is completing, correcting, removing, replacing work and/or completing items enumerated in engineer's Certificate of Substantial Completion. (Certificates of Insurance shall be evidence thereof.)
  - b) Completed Operation Insurance: shall be maintained for at least two years after final payment. Furnish owner with evidence of continuation at time of final payment and continuation one year thereafter.

- 8) Provide the owner with construction Master-Key System. \*\*

Per Specifications

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- 9) Provide the owner with all product warranties and/or guarantees, including the following; \*\*

Per Specifications

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- 10) Provide the Owner with all Maintenance and Operating Manuals, indicating operating instructions and maintenance schedules for all equipment, systems, operating devices and specialties including the following; \*\*

Per Specifications

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- 11) Record Documents (Per Section 01 7800 of Specifications)

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**\*\* If previously provided, please indicate date of submission.**

## CERTIFICATION

I, \_\_\_\_\_, being an officer of \_\_\_\_\_  
do hereby certify that \_\_\_\_\_ was the Contractor  
for the work for the **Port Jervis City School District's Addition & Alterations to PJMS  
Project** (Architect/Engineer Project No. 2019-011 PH1) and that pursuant to and in  
compliance with the Contract Documents, Information to bidders, Paragraph 20, Hazardous  
Wastes, and Bid Description for Contract No. \_\_\_\_\_, no asbestos  
containing materials were used in the construction of this project and all materials were  
provided in accordance with the Federal Asbestos Hazard Emergency Response Act  
(AHERA) and the New York State Asbestos Safety Act (SASA).

\_\_\_\_\_  
\_\_\_\_\_  
By:

State of \_\_\_\_\_ )  
County of \_\_\_\_\_ )

Subscribed and sworn to before me  
this \_\_\_\_\_ day of \_\_\_\_\_, 20\_\_.

\_\_\_\_\_  
Notary Public

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## CONTRACTOR'S WARRANTY OF TITLE

### TO (Owner):

Port Jervis City School District

Date:

9 Thompson Street

Contract: No. -

Port Jervis, New York 12771

Project No.: 2019-011 PH1

Project \_\_\_\_\_ Additions & Alterations to PJMS  
(Name)

I, the undersigned, pursuant to Article 9.3.3 of the General Conditions of the Contract for Construction, warrants and guarantees that the title to all work, material and equipment, whether incorporated in the project or not, will pass to the Owner no later than the time of Final Payment, free and clear of all liens.

\_\_\_\_\_  
Contractor

\_\_\_\_\_  
By

\_\_\_\_\_  
Date

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**SECTION 01 7900  
DEMONSTRATION AND TRAINING**

**PART 1 GENERAL**

**1.01 SUMMARY**

- A. Demonstration of products and systems to be commissioned and where indicated in specific Specification Sections.
- B. Training of Owner personnel in operation and maintenance is required for:
  - 1. All software-operated systems.
  - 2. HVAC systems and equipment.
  - 3. Plumbing equipment.
  - 4. Electrical systems and equipment.
  - 5. Items specified in individual product Sections.
- C. Training of Owner personnel in care, cleaning, maintenance, and repair is required for:
  - 1. Roofing, waterproofing, and other weather-exposed or moisture protection products.
  - 2. Finishes, including flooring, wall finishes, ceiling finishes.
  - 3. Fixtures and fittings.
  - 4. Items specified in individual product Sections.

**1.02 RELATED REQUIREMENTS**

- A. Section 01 7800 - Closeout Submittals: Operation and maintenance manuals.
- B. **Section 01 9113 - General Commissioning Requirements: Additional requirements applicable to demonstration and training. DELETE IF NOT IN PROJECT OR UNBOLD/DELETE UNDERLINE**
- C. Other Specification Sections: Additional requirements for demonstration and training.

**1.03 SUBMITTALS**

- A. See Section 01 3300 - Submittal Procedures for submittal process.
- B. Draft Training Plans: Owner will designate personnel to be trained; tailor training to needs and skill-level of attendees.
  - 1. Submit to Architect for transmittal to Owner.
  - 2. Submit not less than 4 weeks prior to start of training.
  - 3. Revise and resubmit until acceptable.
  - 4. Provide an overall schedule showing all training sessions.
  - 5. Include at least the following for each training session:
    - a. Identification, date, time, and duration.
    - b. Description of products and/or systems to be covered.
    - c. Name of firm and person conducting training; include qualifications.
    - d. Intended audience, such as job description.
    - e. Objectives of training and suggested methods of ensuring adequate training.
    - f. Methods to be used, such as classroom lecture, live demonstrations, hands-on, etc.
    - g. Media to be used, such as slides, hand-outs, etc.
    - h. Training equipment required, such as projector, projection screen, etc., to be provided by Contractor.
- C. Training Manuals: Provide training manual for each attendee; allow for minimum of two (2) attendees per training session.
  - 1. Include applicable portion of Operation and Maintenance Manuals.
  - 2. Include copies of all hand-outs, slides, overheads, video presentations, etc., that are not included in Operation and Maintenance Manuals.
  - 3. Provide one (1) extra copy of each training manual to be included with operation and maintenance data.
  - 4. Training Reports:
    - a. Identification of each training session, date, time, and duration.

- b. Sign-in sheet showing names and job titles of attendees.
- c. List of attendee questions and written answers given, including copies of and references to supporting documentation required for clarification; include answers to questions that could not be answered in original training session.

#### **1.04 QUALITY ASSURANCE**

- A. Instructor Qualifications: Familiar with design, operation, maintenance and troubleshooting of the relevant products and systems.
  - 1. Provide as instructors the most qualified trainer of those Contractors and/or installers who actually supplied and installed the systems and equipment.

### **PART 2 PRODUCTS - NOT USED**

### **PART 3 EXECUTION**

#### **3.01 DEMONSTRATION - GENERAL**

- A. Demonstrations conducted during system start-up do not qualify as demonstrations for the purposes of this section, unless approved in advance by Owner.
- B. Demonstrations conducted during functional testing need not be repeated unless Owner personnel training is specified.
- C. Demonstration may be combined with Owner personnel training, if applicable.
- D. Operating Equipment and Systems: Demonstrate operation in all modes, including start-up, shut-down, seasonal changeover, emergency conditions, and troubleshooting, and maintenance procedures, including scheduled and preventive maintenance.
  - 1. Perform demonstrations not less than 2 weeks prior to Substantial Completion.
  - 2. For equipment or systems requiring seasonal operation, perform demonstration for other season within 6 months.
- E. Non-Operating Products: Demonstrate cleaning, scheduled and preventive maintenance, and repair procedures.
  - 1. Perform demonstrations not less than 2 weeks prior to Substantial Completion.

#### **3.02 TRAINING - GENERAL**

- A. Conduct training on-site unless otherwise indicated.
- B. Owner will provide classroom and seating at no cost to Contractor.
- C. Do not start training until Functional Testing is complete, unless otherwise specified or approved by the Architect.
- D. Provide training in minimum 2 hour segments.
- E. Training schedule will be subject to availability of Owner's personnel to be trained; re-schedule training sessions as required by Owner; once schedule has been approved by Owner failure to conduct sessions according to schedule will be cause for Owner to charge Contractor for personnel "show-up" time.
- F. Product- and System-Specific Training:
  - 1. Review the applicable Operation and Maintenance Manuals.
  - 2. For systems, provide an overview of system operation, design parameters and constraints, and operational strategies.
  - 3. Review instructions for proper operation in all modes, including start-up, shut-down, seasonal changeover and emergency procedures, and for maintenance, including preventative maintenance.
  - 4. Provide hands-on training on all operational modes possible and preventive maintenance.
  - 5. Discuss common troubleshooting problems and solutions.
  - 6. Discuss any peculiarities of equipment installation or operation.
  - 7. Discuss warranties and guarantees, including procedures necessary to avoid voiding coverage.
  - 8. Review recommended tools and spare parts inventory suggestions of manufacturers.
  - 9. Review spare parts and tools required to be furnished by Contractor.



- G. Be prepared to answer questions raised by training attendees; if unable to answer during training session, provide written response within 3 days.

**END OF SECTION**

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**SECTION 01 9113  
GENERAL COMMISSIONING REQUIREMENTS**

**PART 1 GENERAL**

**1.01 SUMMARY**

- A. Commissioning is intended to achieve the following specific objectives; this Section specifies the Contractor's responsibilities for commissioning:
  - 1. Verify and document that functional performance is in accordance with the Contract Documents: Functional tests executed by Contractor and witnessed by the Owner's Representative are utilized to achieve this.
  - 2. Verify that operation and maintenance manuals submitted to Owner are complete: Detailed operation and maintenance (O&M) data submittals by Contractor are utilized to achieve this.
  - 3. Verify that the Owner's operating personnel are adequately trained: Formal training conducted by Contractor is utilized to achieve this.
- B. Commissioning, including Functional tests, O&M documentation review, and training, is to occur after start-up and initial checkout and be completed before Substantial Completion.

**1.02 SCOPE OF COMMISSIONING**

- A. The following are to be commissioned:
  - 1. Plumbing Systems:
    - a. Water heaters.
    - b. Booster pumps.
  - 2. HVAC System, including:
    - a. Major and minor equipment items.
    - b. Piping systems and equipment.
    - c. Ductwork and accessories.
    - d. Terminal units.
    - e. Control system.
    - f. Sound control devices.
    - g. Vibration control devices.
    - h. Variable frequency drives.
  - 3. Special Ventilation:
    - a. Fume hoods.
  - 4. Electrical Systems:
    - a. Power quality.
    - b. Emergency power systems.
    - c. Lighting controls other than manual switches.
  - 5. Electronic Safety and Security:
    - a. Security system, including doors and hardware.
    - b. Fire and smoke alarms.
  - 6. Communications:
    - a. Voice and data systems.
    - b. Public address/paging.
- B. Other equipment and systems explicitly identified elsewhere in Contract Documents as requiring commissioning.
- C. Indoor Air Quality Procedures: The Owner's Representative will coordinate; Contractor will execute; see Section 01 5721 - Indoor Air Quality Controls.

**1.03 RELATED REQUIREMENTS**

- A. Section 01 5719 - Temporary Environmental Controls: Precautions and procedures; smoking room testing; building flush-out.
- B. Section 01 7000 - Execution Requirements: General start-up requirements.

Port Jervis City School District

Additions & Alterations to PJMS

Project No. 2019-011 PH1

RE-BID 02.04.2022

01 9113  
General Commissioning  
Requirements  
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- C. Section 01 7800 - Closeout Submittals: Scope and procedures for operation and maintenance manuals and project record documents.
- D. Section 01 7900 - Demonstration and Training: Scope and procedures for Owner personnel training.

#### **1.04 SUBMITTALS**

- A. See Section 01 3300 - Submittal Requirements for submittal process; except:
  - 1. Make all submittals specified in this Section and elsewhere where indicated for commissioning purposes, to the Architect.
- B. Manufacturers' Instructions: Submit copies of all manufacturer-provided instructions that are shipped with the equipment as soon as the equipment is delivered.
- C. Product Data:
  - 1. Manufacturer's product data, cut sheets, and shop drawings.
  - 2. Manufacturer's installation instructions.
  - 3. Start-up, operating, and troubleshooting procedures.
  - 4. Fan and pump curves.
  - 5. Factory test reports.
  - 6. Warranty information, including details of Owner's responsibilities in regard to keeping warranties in force.
- D. Start-up Plans and Reports.
- E. Completed Pre-functional Checklists.

### **PART 2 PRODUCTS**

#### **2.01 TEST EQUIPMENT**

- A. Provide all standard testing equipment required to perform start-up and initial checkout and required Functional Testing; unless otherwise noted such testing equipment will NOT become the property of Owner.
- B. Calibration Tolerances: Provide testing equipment of sufficient quality and accuracy to test and/or measure system performance with the tolerances specified. If not otherwise noted, the following minimum requirements apply:
  - 1. Temperature Sensors and Digital Thermometers: Certified calibration within past year to accuracy of 0.5 degree F and resolution of plus/minus 0.1 degree F.
  - 2. Pressure Sensors: Accuracy of plus/minus 2 percent of the value range being measured (not full range of meter), calibrated within the last year.
  - 3. Calibration: According to the manufacturer's recommended intervals and when dropped or damaged; affix calibration tags or keep certificates readily available for inspection.

### **PART 3 EXECUTION**

#### **3.01 START-UP PLANS AND REPORTS**

- A. Start-up Plans: For each item of equipment and system for which the manufacturer provides a start-up plan, submit the plan not less than 8 weeks prior to start-up.
- B. Start-up Reports: For each item of equipment and system for which the manufacturer provides a start-up checklist (or start-up plan or field checkout sheet), document compliance by submitting the completed start-up checklist prior to start-up, signed and dated by responsible entity.

#### **3.02 PRE-FUNCTIONAL CHECKLISTS**

- A. A Pre-functional Checklist is required to be filled out for each item of equipment or other assembly specified to be commissioned.
  - 1. No sampling of identical or near-identical items is allowed.
  - 2. These checklists do not replace manufacturers' recommended start-up checklists, regardless of apparent redundancy.

3. Pre-functional Checklist forms will not be complete until after award of the Contract; the following types of information will be gathered via the completed Checklist forms:
  - a. Certification by installing Contractor that the unit is properly installed, started up, and operating and ready for Functional Testing.
  - b. Manufacturer, model number, and relevant capacity information; list information "as specified," "as submitted," and "as installed."
  - c. Serial number of installed unit.
  - d. List of inspections to be conducted to document proper installation prior to start-up and Functional Testing; these will be primarily static inspections and procedures; for equipment and systems may include normal manufacturer's start-up checklist items and minor testing.
  - e. Sensor and actuator calibration information.
- B. Contractor is responsible for filling out Pre-functional Checklists, after completion of installation and before start-up; witnessing by the Owner's Representative is not required unless otherwise specified.
  1. Each line item without deficiency is to be witnessed, initialed, and dated by the actual witness; checklists are not complete until all line items are initialed and dated complete without deficiencies.
  2. Checklists with incomplete items may be submitted for approval provided the Contractor attests that incomplete items do not preclude the performance of safe and reliable Functional Testing; re-submission of the Checklist is required upon completion of remaining items.
  3. Individual Checklists may contain line items that are the responsibility of more than one (1) installer; Contractor shall assign responsibility to appropriate installers or subcontractors, with identification recorded on the form.
  4. If any Checklist line item is not relevant, record reasons on the form.
  5. Regardless of these reporting requirements, Contractor is responsible for correct start-up and operation.
  6. Submit completed Checklists to Owner's Representative within 2 days of completion.
- C. Deficiencies: Correct deficiencies and re-inspect or re-test, as applicable, at no extra cost to Owner.
  1. If difficulty in correction would delay progress, report deficiency to the Owner's Representative immediately.

### **3.03 FUNCTIONAL TESTS**

- A. A Functional Test is required for each item of equipment, system, or other assembly specified to be commissioned, unless sampling of multiple identical or near-identical units is allowed by the final test procedures.
- B. Contractor is responsible for execution of required Functional Tests, after completion of Pre-functional Checklist and before closeout.
- C. Contractor is responsible for correction of deficiencies and re-testing at no extra cost to Owner; if a deficiency is not corrected and re-tested immediately, the Owner's Representative will document the deficiency and the Contractor's stated intentions regarding correction.
  1. Deficiencies are any condition in the installation or function of a component, piece of equipment or system that is not in compliance with the Contract Documents or does not perform properly.
  2. When the deficiency has been corrected, the Contractor completes the form certifying that the item is ready to be re-tested and returns the form to the Owner's Representative; the Owner's Representative will reschedule the test and the Contractor shall re-test.
  3. Identical or Near-Identical Items: If 10 percent, or three, whichever is greater, of identical or near-identical items fail to perform due to material or manufacturing defect, all items will be considered defective; provide a proposal for correction within 2 weeks after notification of defect, including provision for testing sample installations prior to replacement of all items.

4. Contractor shall bear the cost of Owner and Owner's Representative personnel time witnessing re-testing if the test failed due to failure to execute the relevant Pre-functional Checklist correctly; if the test failed for reasons that would not have been identified in the Pre-functional Checklist process, Contractor shall bear the cost of the second and subsequent re-tests.
- D. Functional Test Procedures:
1. Some test procedures are included in the Contract Documents; where Functional Test procedures are not included in the Contract Documents, test procedures will be determined by the Contractor.
  2. Examples of Functional Testing:
    - a. Test the dynamic function and operation of equipment and systems (rather than just components) using manual (direct observation) or monitoring methods under full operation (i.e., the chiller pump is tested interactively with the chiller functions to see if the pump ramps up and down to maintain the differential pressure setpoint).
    - b. Systems are tested under various modes, such as during low cooling or heating loads, high loads, component failures, unoccupied, varying outside air temperatures, fire alarm, power failure, etc.
    - c. Systems are run through all the HVAC control system's sequences of operation and components are verified to be responding as the sequence's state.
    - d. Traditional air or water test and balancing (TAB) is not Functional Testing; spot checking of TAB by demonstration to the Owner's Representative is Functional Testing.
- E. Deferred Functional Tests: Some tests may need to be performed later, after substantial completion, due to partial occupancy, equipment, seasonal requirements, design or other site conditions; performance of these tests remains the Contractor's responsibility regardless of timing.
- F. Field Tests By Others: Where Functional Tests are indicated as to be performed by others not subject to the Contract Documents, those tests are not subject to these commissioning requirements.

### **3.04 SENSOR AND ACTUATOR CALIBRATION**

- A. Calibrate all field-installed temperature, relative humidity, carbon monoxide, carbon dioxide, and pressure sensors and gages, and all actuators (dampers and valves) on this piece of equipment shall be calibrated. Sensors installed in the unit at the factory with calibration certification provided need not be field calibrated.
- B. Calibrate using the methods described below; alternate methods may be used, if approved by Commissioning Authority and Owner beforehand. See PART 2 for test instrument requirements. Record methods used on the relevant Pre-functional Checklist or other suitable forms, documenting initial, intermediate and final results.
- C. All Sensors:
1. Verify that sensor location is appropriate and away from potential causes of erratic operation.
  2. Verify that sensors with shielded cable are grounded only at one end.
  3. For sensor pairs that are used to determine a temperature or pressure difference, for temperature make sure they are reading within 0.2 degree F of each other, and for pressure, within tolerance equal to 2 percent of the reading, of each other.
- D. Sensors Without Transmitters - Standard Application:
1. Make a reading with a calibrated test instrument within 6 inches of the site sensor.
  2. Verify that the sensor reading, via the permanent thermostat, gage or building automation system, is within the tolerances in the table below of the instrument-measured value.
  3. If not, install offset, calibrate or replace sensor.
- E. Sensors With Transmitters - Standard Application.
1. Disconnect sensor.

2. Connect a signal generator in place of sensor.
  3. Connect ammeter in series between transmitter and building automation system control panel.
  4. Using manufacturer's resistance-temperature data, simulate minimum desired temperature.
  5. Adjust transmitter potentiometer zero until 4 mA is read by the ammeter.
  6. Repeat for the maximum temperature matching 20 mA to the potentiometer span or maximum and verify at the building automation system.
  7. Record all values and recalibrate controller as necessary to conform with specified control ramps, reset schedules, proportional relationship, reset relationship and P/I reaction.
  8. Reconnect sensor.
  9. Make a reading with a calibrated test instrument within 6 inches of the site sensor.
  10. Verify that the sensor reading, via the permanent thermostat, gage or building automation system, is within the tolerances in the table below of the instrument-measured value.
  11. If not, replace sensor and repeat.
  12. For pressure sensors, perform a similar process with a suitable signal generator.
- F. Sensor Tolerances for Standard Applications: Plus/minus the following maximums:
1. Watthour, Voltage, Amperage: 1 percent of design.
  2. Pressure, Air, Water, Gas: 3 percent of design.
  3. Air Temperatures (Outside Air, Space Air, Duct Air): 0.4 degrees F.
  4. Relative Humidity: 4 percent of design.
  5. Barometric Pressure: 0.1 inch of Hg.
  6. Flow Rate, Air: 10 percent of design.
  7. Flow Rate, Water: 4 percent of design.
  8. AHU Wet Bulb and Dew Point: 2.0 degrees F.
  9. Hot Water Coil and Boiler Water Temperature: 1.5 degrees F.
  10. Cooling Coil, Chilled and Condenser Water Temperatures: 0.4 degrees F.
  11. Combustion Flue Temperature: 5.0 degrees F.
  12. Oxygen and CO2 Monitors: 0.1 percentage points.
  13. CO Monitor: 0.01 percentage points.
- G. Valve/Damper Stroke Set-up and Check:
1. For all valve/damper actuator positions checked, verify the actual position against the control system readout.
  2. Set pump/fan to normal operating mode.
  3. Command valve/damper closed; visually verify that valve/damper is closed and adjust output zero signal as required.
  4. Command valve/damper to open; verify position is full open and adjust output signal as required.
  5. Command valve/damper to a few intermediate positions.
  6. If actual valve/damper position does not reasonably correspond, replace actuator or add pilot positioner (for pneumatics).
- H. Isolation Valve or System Valve Leak Check: For valves not associated with coils.
1. With full pressure in the system, command valve closed.
  2. Use an ultra-sonic flow meter to detect flow or leakage.

### **3.05 TEST PROCEDURES - GENERAL**

- A. Provide skilled technicians to execute starting of equipment and to execute the Functional Tests. Ensure that they are available and present during the agreed upon schedules and for sufficient duration to complete the necessary tests, adjustments and problem-solving.
- B. Provide all necessary materials and system modifications required to produce the flows, pressures, temperatures, and conditions necessary to execute the test according to the specified conditions. At completion of the test, return all affected equipment and systems to their pre-test condition.

- C. Sampling: Where Functional Testing of fewer than the total number of multiple identical or near-identical items is explicitly permitted, perform sampling as follows:
  - 1. Identical Units: Defined as units with same application and sequence of operation; only minor size or capacity difference.
  - 2. Sampling is not allowed for:
    - a. Major equipment.
    - b. Life-safety-critical equipment.
  - 3. Randomly test at least 50 percent of each group of identical equipment, but not less than three units. This constitutes the "first sample."
  - 4. If 10 percent of the units in the first sample fail, test another 30 percent of the remaining identical units.
  - 5. If 10 percent of the units in the second sample fail, test all remaining identical units.
  - 6. If frequent failures occur, resulting in more troubleshooting than testing, the Owner's Representative may stop the testing and require Contractor to perform and document a checkout of the remaining units prior to continuing testing.
- D. Manual Testing: Use hand-held instruments, immediate control system readouts, or direct observation to verify performance (contrasted to analyzing monitored data taken over time to make the "observation").
- E. Simulating Conditions: Artificially create the necessary condition for the purpose of testing the response of a system; for example apply hot air to a space sensor using a hair dryer to see the response in a VAV box.
- F. Simulating Signals: Disconnect the sensor and use a signal generator to send an amperage, resistance or pressure to the transducer and control system to simulate the sensor value.
- G. Over-Writing Values: Change the sensor value known to the control system in the control system to see the response of the system; for example, change the outside air temperature value from 50 degrees F to 75 degrees F to verify economizer operation.
- H. Indirect Indicators: Remote indicators of a response or condition, such as a reading from a control system screen reporting a damper to be 100 percent closed, are considered indirect indicators.

**END OF SECTION**



## **SECTION 02 2600**

### **ASBESTOS, LEAD, AND PCB ASSESSMENT**

#### **PART 1 GENERAL**

##### **1.01 SECTION INCLUDES**

- A. Asbestos, Lead, and PCB Investigation Report:
  - 1. An asbestos, lead, and PCB investigation report (limited hazardous materials survey report) has been prepared for the site of this Work and excerpts are included herein for information only and are not part of the Contract Documents.
- B. Use of data:
  - 1. Locations of samples are indicated on the building floor plan, which is included in the Report.
  - 2. Results of tests are included hereafter for examination by the Contractor. This data is offered in good faith for the purpose of advising the Contractor of all information that is available.
  - 3. The limited hazardous materials survey report is not, however, part of the Contract Documents, and the Owner does not guarantee the continuity of conditions indicated in the test report.
  - 4. Each Bidder, and the successful Bidder who will be awarded the Contract, will be responsible for any conclusions, and/or interpretations, drawn from those test data.
  - 5. The report is available for Bidders' information, but is not a warranty of surface conditions.
  - 6. Bidders should visit the site and acquaint themselves with existing conditions.
  - 7. Bidders who wish to conduct their own investigation, and employ their own experts to assess the existing conditions are encouraged to do so. To secure permission for entering the project site to conduct such exploration, Bidders shall contact the Architect at least five (5) working days in advance.

#### **PART 2 PRODUCTS – NOT USED**

#### **PART 3 EXECUTION – NOT USED**

### **END OF SECTION**

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**SECTION 02 8213**  
**ASBESTOS ABATEMENT**

**PART 1 GENERAL**

**1.01 RELATED DOCUMENTS**

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 specification sections shall apply to work of this section.

**1.02 SUMMARY**

- A. This Section describes procedures for abatement of asbestos-containing materials (ACM) from the areas of scheduled work.
  - 1. ACM and assumed ACM that are located within the areas of scheduled work will require abatement prior to, or in coordination with, the scheduled demolition and renovation activities. Reference the "AA" drawings for additional details pertaining to abatement of identified or assumed ACM.
  - 2. Materials with trace asbestos have been identified within the areas of scheduled work. Although not considered regulated ACM, work activities affecting materials with trace asbestos are subject to criteria specified in OSHA 29 CFR 1926.1101.
  - 3. Verify the locations and quantities of materials to be removed as the basis for the bid. Contract Drawings depict the areas in which the work will be conducted, and show the general location of identified or assumed ACM, as determined from the hazardous materials assessment performed for the site.
  - 4. Suspect ACM that have not been tested must be assumed to contain asbestos, unless proved otherwise through sampling and analysis.
- B. The Contractor is responsible for all work related to the abatement of identified ACM, including, but not limited to, the following:
  - 1. Submission and approval of required notification prior to commencement of work.
  - 2. Coordination with the Owner or Owner's designated representative for removal of movable furnishings and equipment, including miscellaneous small items such as tools, stored materials, files, and records, prior to asbestos abatement work commencing.
  - 3. Protection of Work to Remain: Preserve and protect building materials and finishes, electrical equipment, and heating and ventilation equipment present within each work area that is not removed or abated. Perform work without damage to or contamination of adjacent areas. The Contractor and Owner shall agree in writing on the condition of the building and fixtures and background level, prior to commencement of the work.
  - 4. Removal of all ACM within the areas of work, as designated on the Contract Drawings.
  - 5. Inspection of areas of work to ensure that all ACM has been removed in accordance with the Contract Documents.
  - 6. Furnish all labor, materials, services, insurance, and equipment necessary to complete the abatement work in accordance with applicable regulations and codes.
  - 7. Be responsible for obtaining approval for a waste disposal site and transportation of waste to waste disposal facility. Waste disposal facility must have a valid NYSDEC or Regulatory Waste Authority permit. Waste transporter shall have a valid NYSDEC, Division of Solid & Hazardous Materials, Part 364 Waste Transporter Permit.
  - 8. Post all applicable regulations at the project site.
  - 9. Maintain the required log of all persons entering work area.
  - 10. Provide Owner with close-out report and record drawings containing all information pertaining to the removal and disposal of ACM (quantity and location).
  - 11. Provide Owner with record drawing of asbestos removal including location, quantity and type of asbestos removed.
- C. Perform all work in such a manner as to minimize the risk of exposure to personnel, to prevent exposure to occupants, and to minimize the risk of release of asbestos or asbestos-containing debris to the environment.

- D. Take notice, and make employees aware, of occupational safety hazards associated with the abatement work and other work being performed on-site.
- E. Perform all work in strict accordance with the Contract Documents and all governing codes, rules, and regulations. Where conflicts occur between the Contract Documents and applicable codes, rules, and regulations, the more stringent procedure(s) shall apply. Interpretation of regulations or differences in interpretation of applicable regulations between any parties associated with the project shall be settled in a manner consistent with the administrative and contractual procedures specified in other applicable sections of the Contract Documents. If a resolution cannot be readily obtained, the applicable regulatory authority will be contacted for interpretation. The interpretation of the regulatory authority will be final.

### 1.03 REGULATIONS AND CODES

- A. Comply with the codes and standards listed below, except where more stringent requirements are shown and/or specified. Specific regulations, standards, and guidance documents are listed for informational purposes due to relevance to the work described herein. Specific regulations, standards, and guidance documents that are not listed may also be applicable to the work.
  - 1. Federal Regulations:
    - a. American National Standard Institute (ANSI)
      - 1) ANSI Z88.2-80, Practices for Respiratory Protection
      - 2) ANSI Z9.2-79, Fundamentals Governing the Design and Operation of Local Exhaust Systems
    - b. Code of Federal Regulations (CFR)
      - 1) 29 CFR 1910.1001, "Asbestos" (OSHA)
      - 2) 29 CFR 1910.1200, "Hazard Communication" (OSHA)
      - 3) 29 CFR 1910.134, "Respiratory Protection" (OSHA)
      - 4) 29 CFR 1910.145, "Specification for Accident Prevention Signs and Tags" (OSHA)
      - 5) 29 CFR 1926, "Construction Industry" (OSHA)
      - 6) 29 CFR 1926.1101, "Asbestos" (OSHA)
      - 7) 29 CFR 1926.500, "Guardrails, Handrails and Covers" (OSHA)
      - 8) 40 CFR 61, Subpart A, "General Provisions" (EPA)
      - 9) 40 CFR 61, Subpart M, "National Emission Standard for Asbestos" (USEPA)
      - 10) 49 CFR 171-172, "Transportation Standards" (USDOT)
      - 11) 40 CFR 763, Subpart E, "Asbestos-Containing Materials in Schools" (USEPA)
    - c. Occupational Safety and Health Administration (OSHA)
    - d. United States Department of Transportation (USDOT)
    - e. United States Environmental Protection Agency (USEPA)
      - 1) USEPA 560/585-024, Guidance for Controlling Asbestos-Containing Materials in Buildings (Purple Book)
      - 2) USEPA 530-SW-85-007, Asbestos Waste Management Guidance
  - 2. New York State:
    - a. Compilation of the Rules and Regulations of the State of New York (NYCRR)
      - 1) 6 NYCRR, Parts 360 and 364, "Disposal and Transportation" (NYSDEC)
      - 2) 10 NYCRR, Part 73, "Asbestos Safety Program Requirements" (NYSDOH)
      - 3) 12 NYCRR, Part 56, "Asbestos", Industrial Code Rule 56 (NYSDOL)
      - 4) Guidance Document (AGD-v2.0) on 12 NYCRR, Part 56
    - b. Fire Code of New York, 2010 including Technical Bulletins issued by the New York State Department of State
    - c. Existing Building Code of New York State 2010, Including Technical Bulletins issued by New York State Department of State.
    - d. New York State Department of Environmental Conservation (NYSDEC)
    - e. New York State Department of Health (NYSDOH)
    - f. New York State Department of Labor (NYSDOL)
    - g. New York State Department of State (NYSDOS)
    - h. New York State Department of Transportation (NYSDOT)

#### **1.04 DEFINITIONS**

- A. See NYSDOL Industrial Code Rule No. 56.
- B. See Chapter 2 of the Fire Code, Existing Building Code & Building Code of New York State for other definitions.

#### **1.05 CONTRACTOR LIABILITY**

- A. It is understood and agreed that the handling, removal and disposition of asbestos or asbestos products involves certain health risks which require specific safety measures. Owner and Consultant (Architect/Engineer) shall not be responsible for safety measures on the job, including measures for the protection of employees or other contractors or subcontractors, nor for the protection of the general public. Such responsibility for safety is and shall remain that of Contractor. Therefore, except for claims and damages arising for negligent acts, errors or omissions of Consultant, Contractor agrees to hold harmless, defend and indemnify Owner and Consultant from all claims, suits, expenses, or damages arising from or alleged to arise from exposure to or inhalation of asbestos or asbestos fibers.

#### **1.06 ENVIRONMENTAL CONSULTANT**

- A. An Environmental Consultant will be retained by the Owner under separate contract, to represent the Owner in matters pertaining to the work performed in accordance with these specifications and requirements.
- B. The Environmental Consultant is authorized by the Owner to provide monitoring during removal work, to interpret procedures and to enforce provisions of the contract documents and NYS Code Rule 56 pertaining to the removal of ACM.
- C. If, in the opinion of the Environmental Consultant, there is a substantial non-conformance with the contract documents and NYS Code Rule 56 and/or a situation presenting a health hazard to workers or to the Owner's employees, the Environmental Consultant will be authorized to stop work.
- D. The Environmental Consultant's role in health and safety matters does not alleviate the Contractor's obligation to comply with all applicable health and safety regulations promulgated by the local state or federal government.
- E. The Environmental Consultant will provide Air Monitoring, Project Monitoring, and work area clearance pursuant to requirements of 12 NYCRR Part 56 and 40 CFR 763, Subpart E.
  - 1. Should any visual clearance or clearance air sample(s) fail to meet clearance criteria, the Contractor will be directed to re-clean the work area and new clearance air samples will be collected. The Contractor will be responsible for any and all costs incurred due to clearance sample failures.

#### **1.07 SUBMITTALS**

- A. Submit in accordance with applicable provisions of the Contract Documents. See Section 01 3300 - Submittal Procedures, for submittal process.
- B. "Submit" means to forward an electronic copy to the Designer of Record and the Environmental Consultant for review.
- C. Pre-Work Submittals: Submit a minimum of 10 days prior to the anticipated commencement of the asbestos abatement work and expedite any resubmissions.
  - 1. Work Plan: Provide a Work Plan that describes the abatement methods to be used, schedule of removal, the type of decontamination units, worker protection plan, and Material Safety Data Sheets (MSDS) or Safety Data Sheets (SDS) for any chemicals or products to be used to facilitate the work. The Work Plan shall also show the limits of the work area(s), locations of decontamination units, entrance and exit to the work area(s), and exhaust locations.
  - 2. Submit satisfactory proof to Asbestos Designer of Record and Environmental Consultant that all required permits, licenses and certifications have been obtained, notifications have been issued, and arrangements made for transport and disposal of ACM, including:

- a. Copy of project notifications for the asbestos abatement work, as applicable and required by federal and state regulatory agencies, together with proof of transmittal (i.e., certified mail return receipt).
  - b. Copy of building occupant notification, as applicable and as required by regulatory agencies.
  - c. One current copy of each Contractor's asbestos handler's license and one copy of each employee's asbestos handler's certificate. In addition to the asbestos handler's licenses, the Contractor shall submit each employee's "OSHA 10" card. Should Handlers' or Supervisor's documentation expire during the duration of the project, the Contractor shall submit replacement documents.
  - d. Copy of waste hauler's NYSDEC permit and one copy of NYSDEC Certificate of Approval for the ACM waste disposal site.
  - e. Submit documentation indicating that all employees have had instruction on the hazards of asbestos exposure, on use of fitting of respirators, on protective dress, on use of showers, on entry and exit from work areas, and on all aspects of work procedures and protective measures.
  - f. Submit documentation certifying that all workers employed in asbestos related aspects of the job have had medical examinations as prescribed by the OSHA regulations and have been found fit to perform work while wearing a respirator. This certification is to be signed by a physician indicating that he has reviewed the relevant medical records and that they support the certification. Medical records are not to be submitted and will not be accepted.
  - g. Submit manufacturer's certification that vacuums, ventilation equipment and other equipment required to contain airborne fibers, conform to ANSI Z9.2.
  - h. Establish a manifest system that accounts for all asbestos waste. The manifest system shall be described in writing and will be subject to the approval of the Environmental Consultant. Copies of the written description and any receipts generated during the handling and disposal process shall be provided to the Owner. The Contractor must be able to demonstrate custody over all asbestos waste from the time it is removed from the work area until it is deposited at the landfill.
- D. Project Close-out Submittals: Within 30 days of project completion, and prior to final payment, submit a closeout package to include:
1. Copy of final project notifications.
  2. Copy of Contractor asbestos license and certifications for employees involved in the project.
  3. Copy of Haulers Permit.
  4. Copy of daily work area entry logs.
  5. Copy of laboratory reports for personal air monitoring.
  6. Copy of asbestos disposal manifests completed by all parties, for each phase of work as applicable.
  7. Copy of record drawing indicating locations type, and quantities of ACM removed.

## **PART 2 PRODUCTS**

### **2.01 PROJECT LOG BOOK**

- A. Provide a permanently bound project log book. The log book shall contain, on the title page, the project name; name, address, and telephone number of Owner; name, address, and telephone number of Consultant; name, address, and telephone number of the Contractor; and emergency numbers, including, but not limited to, local Fire/Rescue Department.
- B. Record all entries into the log with non-washable, permanent ink. Under no circumstances shall pencil entries be permitted.
- C. Ensure that all persons entering and exiting the work area sign the log and include name, employer, NYSDOL certification number, and time of entrance and exiting.

- D. Ensure that the Project Supervisor documents all work performed daily and notes all visual assessments required by 12 NYCRR Part 56 (e.g., testing and inspection of barriers and enclosure by smoke testing, negative air systems, and manometer readings).

## **2.02 PERSONAL PROTECTIVE EQUIPMENT**

- A. Comply with applicable OSHA regulations and procedures for selection and use of personal protective equipment (PPE).
- B. The minimum PPE is Level D Modified (hard hat, safety glasses, and steel-toed boots), at all times at the project site both inside and outside the work areas. Additional PPE is required to reduce exposure to asbestos, including the following:
  - 1. Respiratory Protection
    - a. Select respirators from those approved by the NIOSH, Department of Health and Human Services.
    - b. Ensure that respirators and filters are selected, used, maintained, and stored pursuant to an established respiratory protection program, pursuant to 29 CFR 1910.134.
    - c. Provide for surveillance of working conditions to ensure the selected respirator provides adequate protection, as defined in 29 CFR 1926.1101.
  - 2. Disposable Protective Clothing
    - a. Provide disposable protective whole body clothing, head coverings, plastic or rubber gloves, and foot coverings to personnel utilized during the project. Cloth gloves may be worn inside the plastic or rubber gloves for comfort, but shall not be used alone. Secure sleeves at the wrists, and foot coverings at the ankles, by the use of tape, or provide disposable coverings with elastic wrists or tops.
- C. Provide workers and authorized visitors with suitable protective clothing, headgear, eye protection, and footwear whenever they enter the work area.

## **2.03 SIGNS AND LABELS**

- A. Provide warning signs and barrier tapes at all approaches to the work area. Locate signs at such distance that personnel may read the sign and take the necessary protective steps required before entering the area.
- B. Provide danger signs in vertical format conforming to 29 CFR 1926.1101, minimum size of 20 inches by 14 inches, and displaying the following legend:

DANGER  
ASBESTOS  
MAY CAUSE CANCER  
CAUSES DAMAGE TO LUNGS  
AUTHORIZED PERSONNEL ONLY  
WEAR RESPIRATORY PROTECTION AND PROTECTIVE CLOTHING IN THIS AREA

- C. Provide 3-inch wide red barrier tape printed with black letters, "DANGER ASBESTOS REMOVAL". Locate barrier tape across all corridors, entrances, and across routes to each asbestos work area. Install tape 3 to 4 feet above finish floor.
- D. Provide asbestos danger labels affixed to all asbestos materials, scrap, waste, debris, and other products contaminated with asbestos. Labels shall state the following.

DANGER  
CONTAINS ASBESTOS FIBERS  
MAY CAUSE CANCER  
CAUSES DAMAGE TO LUNGS  
DO NOT BREATHE DUST  
AVOID CREATING DUST

- E. Provide the following asbestos label, of sufficient size to be clearly legible, for display on waste containers (bags or drums) that will be used to transport asbestos contaminated material in accordance with 49 CFR Parts 171 and 172. Labels shall state the following.

RQ HAZARDOUS SUBSTANCE  
SOLID, NOS  
FORM E, NA 9188  
ASBESTOS

- F. Generator identification information shall be affixed to each waste container, indicating the following and printed in indelible ink.

Generator Name: Port Jervis City School District  
Facility Building Name: Port Jervis Middle School  
Facility Address: Port Jervis, New York  
Date: MM/DD/YYYY

#### **2.04 POLYETHYLENE SHEETING**

- A. Unless otherwise indicated, utilize polyethylene sheeting that is at least 6 mil fire retardant sheeting.
- B. Utilize at least 6 mil opaque fire retardant plastic sheeting for decontamination enclosure systems.

#### **2.05 HEPA VACUUM EQUIPMENT**

- A. Conduct all vacuuming using HEPA-filter equipped industrial vacuums conforming to ANSI Z9.2.
- B. Provide tools and specialized equipment, including scraping nozzles with integral vacuum hoods connected to a HEPA vacuum with flexible hose.

#### **2.06 DISPOSAL BAGS, DRUMS, AND CONTAINERS**

- A. Provide 6 mil polyethylene disposal bags printed with asbestos caution labels, and imprinted with USDOT required markings.
- B. Provide 30- or 55-gallon capacity fiber or metal drums capable of being sealed air- and water-tight if asbestos waste has the potential to damage or puncture disposal bags. Affix asbestos caution labels on lids and at one-third points around drum circumference to assure ready identification.
- C. Label containers and bags with the name of the waste generator and the location at which the waste was generated, in accordance with 40 CFR 61 – NESHAPS.
- D. Label containers and bags with the date moved from the waste decontamination enclosure to the waste transport container, in accordance with 12 NYCRR 56, Subpart 8.9(C)(3).
- E. Do not use labeled ACM waste containers or bags for non-ACM waste or trash. Any material



placed in labeled containers or bags, whether turned inside out or not, will need to be handled and disposed of as ACM waste.

## **2.07 SURFACTANT (AMENDED WATER)**

- A. Wet all ACM prior to removal with surfactant mix, and apply in accordance with manufacturer's printed instructions.

## **2.08 POWER TOOLS**

- A. Ensure that any power tools used to drill, cut into, or otherwise disturb asbestos material is manufacturer equipped with HEPA filtered local exhaust ventilation.

## **2.09 WATER AND ELECTRICAL**

- A. Coordinate water and electrical service with the Owner prior to initiation of abatement activities. Verify suitability and location of all connections.

## **2.10 OTHER PRODUCTS OR MATERIALS**

- A. Ensure that other products or materials required for use during abatement activities are in compliance with local, state, and federal codes and regulations, if applicable. Furnish and utilize industry standard equipment and materials. Do not furnish equipment or materials that have been modified or altered in such a manner to violate local, state, and/or federal codes and regulations, or presents unnecessary health and safety risks.

# **PART 3 EXECUTION**

## **3.01 NOTICES**

- A. Provide notification of intent to commence asbestos abatement activities as indicated below.
  - 1. At least 10 working days prior to beginning abatement activities, send written notification to:  
  
United States Environmental Protection Agency  
National Emissions Standards for Hazardous Air Pollutants Coordinator  
26 Federal Plaza  
New York, New York 10007
  - 2. At least 10 calendar days prior to beginning abatement activities, send written notification to:  
  
New York State Department of Labor  
Division of Safety and Health, Asbestos Control Program  
State Office Campus  
Building 12 – Room 454  
Albany, New York 12240
- B. Send notifications to regulatory agencies via mail or package delivery service that will provide proof of delivery and receipt.
- C. Post and/or provide Building Occupant Notification at least 10 calendar days prior to beginning abatement activities, as required by 12 NYCRR Part 56. The posting must include the following information.
  - 1. The locations of the abatement project.
  - 2. The amounts and types of ACM being abated.
  - 3. The commencement and completion dates of the project.
  - 4. The name, address, and asbestos license number of the Asbestos Abatement Contractor.
  - 5. The name, address, and license number of the Asbestos Abatement Project Monitor.
  - 6. The name, address, and NYSDOH ELAP number of the laboratory providing analytical services.

### **3.02 PERSONAL PROTECTIVE EQUIPMENT**

- A. Refer to Article 2.02 for applicable PPE requirements.
- B. Ensure that respirators are worn until outside the decontamination room.
- C. Ensure that disposable protective clothing is donned upon entering the decontamination room and before entering the work area, and street clothes are placed in a storable locker or bin. Ensure that workers exiting the work area immediately remove protective clothing and place the waste into sealable containers.

### **3.03 PERSONAL AIR MONITORING**

- A. Conduct requisite personal air monitoring pursuant to the requirements of 29 CFR 1926.1101, at a minimum. Verify compliance with applicable personal exposure and excursion limits.

### **3.04 PROJECT SUPERVISOR**

- A. Designate a full-time Project Supervisor, who meets the following qualifications.
  - 1. The Project Supervisor must hold a current New York State certification as an Asbestos Contractor Supervisor.
  - 2. The Project Supervisor must meet the requirements of a "Competent Person", as defined by OSHA 1926.1101, and have a minimum of 2 years experience as a Supervisor.
  - 3. The Project Supervisor must be able to speak, read, and write English fluently, as well as communicate in the primary language of the Workers.
- B. Ensure the Project Supervisor is on-site at all times during abatement work, until the Project is complete. Work will be stopped if the Project Supervisor is not present on-site. The Project Supervisor is responsible for the performance of the work and will be required to represent the Contractor in all respects at the Project site. The Supervisor will be the primary point of contact for the Asbestos Abatement Project Monitor. The Project Supervisor cannot be removed from the Project without the written consent of the Owner. The Project Supervisor will be removed from the Project, if so requested, by the Owner.
- C. Ensure the Project Supervisor maintains the Project Log Book in accordance with 12 NYCRR 56, Subpart 7.3, and as described in Article 2.01.

### **3.05 MEDICAL REQUIREMENTS**

- A. Comply with medical examination and recordkeeping requirements, and maintain a medical surveillance program, pursuant to requirements of 29 CFR 1910.1001 and 29 CFR 1926.1101.

### **3.06 TRAINING**

- A. As required by applicable regulations, prior to assignment to asbestos work, instruct each employee with regard to the hazards of asbestos, safety and health precautions, and the use and requirements of protective clothing and equipment.
- B. Maintain an established respirator program, as required by ANSI Z88.2, 29 CFR 1910.134, and 29 CFR 1926.1101. Comply with requirements for respirator training and fit testing.
- C. Ensure that all Workers and Supervisors have successfully completed training and received appropriate certifications, in accordance with NYSDOL and NYSDOH requirements.

### **3.07 PERSONAL AIR MONITORING**

- A. Personal air monitoring required by the OSHA is the responsibility of the Contractor, not the Owner or Owner's representative.

### **3.08 ON-SITE DOCUMENTATION**

- A. Maintain the following submittals, documentation, and postings on-site during abatement activities, at a location approved by the Asbestos Abatement Project Monitor.
  - 1. Valid Contractor license issued by the NYSDOL.
  - 2. Worker certification, training, and medical surveillance records
    - a. Current New York State Asbestos Handler certification cards for each person

- employed in the removal, handling, or disturbance of asbestos
- b. Evidence that Workers have received proper training required by the regulations and the medical examinations required by OSHA 29 CFR 1926.1101
- c. Documentation that Workers have been fit tested specifically for respirators used on the project
- d. Workers Acknowledgment Statements signed by each employee stating that the employee has received training in the proper handling of ACM; understands the health implications and risks involved; and understands the use and limitations of the respiratory equipment to be used
- 3. Daily OSHA personal air monitoring results
- 4. NYSDOH ELAP certification for the laboratory that will be analyzing the OSHA personal air samples
- 5. NYSDEC Waste Transporter Permit
- 6. Contract Documents (Project Manual and Contract Drawings)
- 7. Notifications and variances (site-specific) – ensure the most up-to-date notifications and variances are on-site
- 8. Applicable regulations
- 9. Material Safety Data Sheets (MSDS) or Safety Data Sheets (SDS) of supplies/chemicals used on the project
- 10. Approved Abatement Work Plan
- 11. List of emergency telephone numbers
- 12. Waste disposal log
- 13. Project log book

### **3.09 TEMPORARY UTILITIES**

- A. Shut down and lock out all electrical power to the asbestos abatement work area.
- B. Provide temporary 120-240 volt, single phase, three-wire, 100 amp electric service with ground fault circuit interrupters (GFCI) for all electric requirements within the asbestos abatement work area.
  - 1. Where available, obtain a power supply from the Owner's existing system. Otherwise, provide power from other sources (i.e., generator).
  - 2. Provide temporary wiring and "weatherproof" receptacles in sufficient quantity and location to serve all HEPA equipment and tools.
  - 3. Provide wiring and receptacles, as required by the Asbestos Abatement Project Monitor, for air sampling equipment.
  - 4. Supply all power to the work area from outside the area through GFCI at the source.
- C. Provide temporary lighting with "weatherproof" fixtures for the work area, including decontamination chambers.
  - 1. Maintain the work area in an illuminated condition at all times during work.
  - 2. Provide lighting, as required by the Asbestos Abatement Project Monitor, for performance of required visual assessments.
- D. All temporary devices and wiring used in the work area must be capable of withstanding decontamination procedures, including HEPA vacuuming and wet wiping.
- E. Utilize domestic water services, if available, from the Owner's existing system. Provide hot water heaters with sufficient capacity to meet project demands.

### **3.10 DECONTAMINATION ENCLOSURES AND WORK AREA PREPARATION**

- A. The work area must be vacated by building occupants prior to decontamination enclosure construction and work area preparation.
- B. All demolition necessary to access ACM for removal must be conducted within negative pressure enclosures by licensed asbestos handlers. Demolition debris must be disposed of as asbestos waste.
- C. Provide a personal decontamination enclosure contiguous to each work area. The following conditions apply for the construction of a personal decontamination enclosure.

1. Utilize a decontamination enclosure that is attached to the work area and fully framed and sheathed to prevent unauthorized entry.
  2. For large asbestos projects, provide access to the work area from the clean room through an airlock to the shower, followed by an airlock to the equipment room to the work area. For small asbestos projects, provide access to the work area from the clean room, to the shower, and through the equipment room to the work area. Each airlock must be a minimum of 3 feet from door to door.
  3. Cover the decontamination enclosure ceiling and walls with one layer of polyethylene sheeting. Utilize two layers of reinforced polyethylene sheeting to cover the floor.
  4. Establish a triple layer of polyethylene sheeting at the decontamination chamber doorways, weighted to ensure a tight seal of the enclosure. Prior to establishing doorway seals, move all required tools, scaffolding, and equipment into the work area.
  5. Provide a lockable door for the entrance to the clean room. The clean room must be sized to accommodate all full-shift Workers and the Asbestos Project Monitor. The minimum dimensions of the clean room must be 32 square feet for every 6 full-shift Workers, and 6 feet in height. Provide suitable lockers for storage of Workers' street clothes. Provide for storage of respirators, along with replacement filters and disposable towels.
  6. Provide a temporary shower, with individual hot and cold water supplies and faucets. Provide a sufficient supply of soap and shampoo. There must be at least 1 shower for every 6 full-shift abatement Workers. Construct the shower room in such a way so that travel through the shower chamber will be through the shower. The shower must not be able to be bypassed.
  7. Drain, collect, and filter shower water through a system with at least a 5.0 micron particle size collection capability, containing a series of several filters with progressively smaller pore sizes to avoid rapid clogging of the system. Discharge the filtered wastewater in accordance with applicable codes, and dispose of the contaminated filters as asbestos waste.
  8. The equipment room is to be used for the storage of tools and equipment. Place a walk-off pan filled with water in the work area outside the equipment room for workers to clean foot coverings when leaving the work area. Place a labeled 6 mil plastic ACM waste bag, for collection of contaminated clothing, in this room.
  9. At a minimum, clean and disinfect the personal decontamination enclosure at the end of each work shift and as otherwise directed by the Asbestos Project Monitor.
- D. Provide a waste decontamination enclosure contiguous to each work area. The following conditions apply for the construction of a waste decontamination enclosure.
1. The decontamination enclosure must be attached to the work area and not located within it. The decontamination enclosure must be fully framed and sheathed to prevent unauthorized entry.
  2. Construct the waste decontamination enclosure system to include a washroom/cleanup room to the work area and an airlock doorway to the holding area. The airlock must be a minimum of 3 feet from door to door. Provide a lockable door for the entrance to the holding area.
  3. Cover the decontamination enclosure ceiling and walls with one layer of polyethylene sheeting. Utilize two layers of reinforced polyethylene sheeting to cover the floor.
  4. Establish a triple layer of polyethylene sheeting at the decontamination chamber doorways, weighted to ensure a tight seal of the enclosure. Prior to establishing doorway seals, move all required tools, scaffolding, and equipment into the work area.
  5. Where there is only one egress from the work area, the holding area of the waste decontamination enclosure system may branch off from the personal decontamination enclosure equipment room, which may then serve as the waste wash room.
- E. The following conditions apply to work area preparation procedures.
1. Post asbestos danger signs at all approaches to the asbestos abatement work area. Post all emergency exit signs only on the work area side at the containment, and post with asbestos caution signs on the non-work area side. Provide all non-work area stairs and corridors accessible to the asbestos abatement work area with warning tapes at the base of stairs and beginning of corridors. Utilize warning tape in addition to caution signs.
  2. Shut down and lock out the building heating, ventilation, and air conditioning (HVAC) and

electrical systems. Provide temporary electric power and lighting, as specified in Article 3.8.

3. Pre-clean all surfaces and objects within the work area, using HEPA vacuuming and/or wet wiping methods. Dry sweeping and any other methods that raise dust are prohibited. ACM must not be disturbed during pre-cleaning.
4. For movable objects within the work area, clean via HEPA vacuum and/or wet wipe and remove from the work area.
5. For all non-movable equipment in the work area, completely cover with 2 layers of polyethylene sheeting, that is secured in place with duct tape and/or spray adhesive.
6. Provide enclosure of the asbestos abatement work area necessary to isolate it from unsealed areas of the building, in accordance with the approved Asbestos Abatement Work Plan, and as specified herein.
7. Seal off all openings, including, but not limited to, windows, diffusers, grills, electrical outlets and boxes, doors, floor drains, and any other penetrations of the work area enclosure, using 2 layers of polyethylene sheeting to form a critical barrier.
8. Provide temporary framing and sheathing at openings larger than 32 square feet that form the limits of the asbestos abatement work area. Sheathing thickness must be a minimum of 3/8-inch, and all sheathing shall be caulked and the work area side sealed with 2 layers of polyethylene sheeting to form an isolation barrier.
9. Secure sheeting with spray adhesive and then sealed with duct tape. Ensure all joints in polyethylene sheeting overlap a minimum of 12 inches.
10. Frame out emergency exits. Provide double-layered polyethylene sheeting and tape seal opening. Post as emergency exits only. Within the work area, mark the locations and directions of emergency exits throughout the work area, using exit signs and/or duct tape.
11. Remove all items attached to, or in contact with, ACM only after the work area enclosure is in place. HEPA vacuum and wet wipe with amended water all removed items prior to removal from the work area and before the start of asbestos removal operations.

### **3.11 WORK AREA ENTRY AND EXIT PROCEDURES**

- A. Access to and from the asbestos abatement work area is permitted only through the personal decontamination enclosure, unless otherwise stipulated in 12 NYCRR and/or a site-specific or applicable variance.
- B. Workers must sign the entry/exit log upon every entry and exit.
- C. The following procedures must be followed when entering the work area.
  1. Before entering the work area, Workers must proceed to the clean room, remove all street clothes, and don protective clothing, equipment, and respirators.
  2. Workers must proceed from the clean room, through the shower room and the equipment room, and into the work area.
- D. The following procedures must be followed when exiting the work area.
  1. Before leaving the work area, remove gross asbestos contamination by brushing, wet cleaning, and/or HEPA vacuuming.
  2. In the equipment room, Workers are to remove disposable clothing, but not respirators, and place clothing in plastic disposal bags for disposal as contaminated debris prior to entering the shower room.
  3. Workers are to shower thoroughly while wearing respirators, and then wash respirator with soap and water prior to removal.
- E. Upon exiting the shower, Workers are to don new disposable clothing if the work shift is to continue or street clothes to exit the area. Under no circumstances shall Workers enter public, non-work areas in disposable protective clothing.

### **3.12 NEGATIVE AIR PRESSURE FILTRATION SYSTEM**

- A. Provide a portable asbestos filtration system that develops a minimum pressure differential of negative 0.02 inches of water column within all full enclosure areas relative to adjacent unsealed areas, and that provides a minimum of 4 air changes per hour in the work area during abatement.

- B. Such filtration systems must be operated 24 hours per day during the entire Project, until the final cleanup is completed and satisfactory results of the final air samples are received from the laboratory.
- C. Ensure the system includes a series of pre-filters and filters to provide HEPA filtration of particles down to 0.3 microns at 100% efficiency and below 0.3 microns at 99.97% efficiency. Provide sufficient replacement filters to replace pre-filters every 2 hours, secondary pre-filters every 24 hours, and primary HEPA filters every 600 hours of operation.
- D. A minimum of one additional filtration unit of at least the same capacity as the primary unit(s) must be installed and fully functional to be used during primary unit(s) filter changing and in case of primary failure. Install at least one back-up unit for every five primary units.
- E. Upon electric power failure or shut-down of any filtration unit, all abatement activities must stop immediately and only resume after power is restored and all filtration units are fully operating. For shut-downs longer than one hour, all openings into the work area, including the decontamination enclosures, must be sealed.
- F. Provide a manometer with a chart recorder to measure and record negative pressure differential across the work area barriers without interruption 24 hours per day for all OSHA Class I friable asbestos projects.

### **3.13 REMOVAL OF ASBESTOS-CONTAINING MATERIALS**

- A. Remove ACM in accordance with the Contract Documents and the approved Asbestos Abatement Work Plan.
- B. Should the area beyond the work area become contaminated with ACM or elevated fiber levels, immediately stop work and institute emergency procedures. Contaminated non-work areas must be isolated and subsequently decontaminated in accordance with procedures established for asbestos removal. All costs incurred from decontaminating such non-work areas and the contents thereof will be borne solely by the Contractor, at no additional cost to the Owner.
- C. Perform all asbestos removal work using wet removal procedures. Mix and apply surfactant in accordance with manufacturer's written instructions. Dry removal procedures are not permitted.
- D. Sufficiently wet asbestos materials with a low pressure, airless fine spray of amended water to ensure full penetration prior to ACM removal. Re-wet materials that do not display evidence of saturation.
- E. Employ a sufficient number of Workers to continuously apply amended water while ACM is being removed. Contain excess water within the work area at all times, and continuously containerize through the use of a HEPA equipped wet/dry vacuum or other adequate methods.
- F. Perform cutting, drilling, abrading, or any penetration or disturbance of ACM in a manner to minimize the dispersal of asbestos fibers into the air. Use equipment and methods specifically designed to limit generation of airborne asbestos particles. All power-operated tools used must be provided with HEPA equipped filtered local exhaust ventilation.
- G. Place all removed material into 6 mil plastic disposal bags or other suitable container upon detachment from the substrate or whenever there is enough accumulation to fill a single bag or container. Maintain work area surfaces free of accumulation of asbestos debris.
- H. Power or pressure washers are not permitted for asbestos removal or clean-up procedures.
- I. Encapsulate all open ends of pipe and duct insulation not scheduled for removal, using lag cloth.
- J. All construction and demolition debris determined by the Asbestos Abatement Project Monitor to be contaminated with asbestos must be handled and disposed of as asbestos waste.
- K. The use of metal shovels, metal dust pans, etc. are not permitted inside the work area.

### **3.14 EQUIPMENT AND WASTE CONTAINER DECONTAMINATION AND REMOVAL PROCEDURES**

- A. Clean external surfaces of contaminated containers and equipment by wet cleaning and/or

HEPA vacuuming in the work area before moving such items into the waste decontamination enclosure system airlock by persons assigned to this duty. The work area personnel are not to enter the airlock.

- B. Remove the containers and equipment from the airlock by personnel stationed in the wash room during waste removal operations. Clean the external surfaces of containers and equipment a second time by wet cleaning.
- C. The cleaned containers of asbestos material and equipment are to be dried of any excessive pooled or beaded liquid, placed in uncontaminated plastic bags or sheeting, dependent upon the physical characteristics of the item, and sealed airtight.
- D. Transfer the clean re-containerized items into the airlock that leads to the holding area. Workers in the wash room are not to enter this airlock or the work area until waste removal is finished for that period.
- E. Transfer containers and equipment from the airlock and into the holding area by personnel dressed in clean personal protective equipment, and who have entered from uncontaminated areas.
- F. Place the cleaned containers of asbestos material and equipment in water tight carts with doors or tops that are to be closed and secured. Maintain these carts in the holding area pending removal. Ensure the carts are wet cleaned and/or HEPA vacuumed at least once each day.
- G. Secure the exit from the decontamination enclosure system to prevent unauthorized entry.
- H. Where the waste removal enclosure is part of the personal decontamination enclosure, ensure waste removal does not occur during shift changes or when otherwise occupied. Implement precautions to prevent short circuiting and cycling of air outward through the shower and clean room.

### **3.15 WORK AREA DECONTAMINATION**

- A. Following completion of gross abatement and after all accumulations of asbestos waste materials have been containerized, perform decontamination procedures, as specified in 12 NYCRR 56, Subpart 9.1, unless modified by a site-specific or applicable variance.
- B. Secure the exit from the decontamination enclosure system to prevent unauthorized entry.
- C. Where the waste removal enclosure is part of the personnel decontamination enclosure, ensure waste removal does not occur during shift changes or when otherwise occupied. Implement precautions to prevent short circuiting and cycling of air outward through the shower and clean room.
- D. After isolation and critical barriers are removed, the Asbestos Abatement Project Monitor will inspect the work area for cleanliness. If necessary, perform additional cleaning, as directed by the Asbestos Abatement Project Monitor.
- E. As a result of any unsatisfactory visual assessment by the Asbestos Abatement Project Monitor, or should final clearance air sampling results indicate high fiber levels, the affected areas will be required to be cleaned or re-cleaned at no additional expense to the Owner.

### **3.16 TENT ENCLOSURES (IF APPLICABLE)**

- A. Tent enclosures may only be used in areas specifically permitted by 12 NYCRR Part 56 or a project site-specific variance issued by the NYSDOL.
- B. Restrict access to the immediate area where tent removal procedures are taking place using barrier tape and/or construction barriers, and post caution signs.
- C. Remote personal and waste decontamination enclosure systems are not to be constructed or utilized. The personal and waste decontamination enclosure systems must be connected to the work area.
- D. Pre-clean the work area. For all objects and equipment that will remain in the restricted area during abatement, seal with 2 layers polyethylene sheeting and tape.

- E. For the tent, utilize a single-use barrier constructed with a rigid frame and at least 2 layers of polyethylene sheeting, unless 1 layer of polyethylene sheeting is otherwise permitted by 12 NYCRR 56 and/or a site-specific variance. Ensure all seams are sealed airtight using duct tape and/or spray adhesive.
- F. During removals, utilize negative pressure filtration units to maintain negative air pressure inside the tent.
- G. Perform ACM removal following procedures described in Article 3.13.
- H. Place waste material in properly labeled 6 mil plastic bags or other appropriate containers. Ensure the outside of the bags or containers are wet wiped and/or HEPA vacuumed before being passed into the waste decontamination enclosure system for double-bagging. Utilize watertight carts for transportation of waste bags and containers outside the work area.
- I. Subsequent to completion of gross abatement and after all accumulations of asbestos waste materials have been containerized, implement the following decontamination procedures.
  - 1. All bagged asbestos waste and unnecessary equipment must be decontaminated and removed from the work area.
  - 2. All surfaces in the work area must be wet cleaned. A wet-purpose shop vacuum may be used to pick up excess liquid, and must be decontaminated prior to removal from the work area.
  - 3. The Asbestos Abatement Project Monitor will conduct a visual assessment of the work area for cleanliness and completion of abatement.
  - 4. Apply a thin coat of encapsulant to all surfaces in the work area that were not the subject of removal. In no event is encapsulant be applied to any surface that was the subject of removal prior to obtaining satisfactory air monitoring results.
  - 5. After the encapsulant has dried, aggressive final clearance air sampling will be conducted by the Asbestos Abatement Project Monitor.
  - 6. Upon receipt of satisfactory final clearance air sampling results, collapse the tent into itself, place in suitable disposal bags, and transport to the waste decontamination enclosure. Remove isolation and critical barriers.

### **3.17 GLOVEBAG REMOVAL (IF APPLICABLE)**

- A. In addition to conformance with applicable regulations and variances, glovebag removals are only permitted to be conducted within tent enclosures complying with these specifications. Conduct removal and disposal in conformance with all regulatory conditions.
- B. Restrict access to the immediate area where tent/glovebag removal procedures are taking place using barrier tape and/or construction barriers, and post caution signs.
- C. Pre-clean the work area. Seal all objects and equipment that will remain in the restricted area during abatement, utilizing 2 layers of polyethylene sheeting and tape.
- D. Utilize commercially available glovebags of at least 6 mil thickness. Use shall be in accordance with the manufacturer's instructions and the following minimum requirements.
  - 1. Cut the sides of the glovebag to fit the size of pipe being removed. Insert tools into the attached tool pocket.
  - 2. Place the glovebag around the pipe, and fold and seal the open edges with staples and duct tape. Ensure the glovebag is also sealed at the pipe to form a tight seal.
  - 3. Install openings in the glovebag for the wetting tube and HEPA vacuum hose. Seal the opening to form a tight seal.
  - 4. Conduct smoke testing for all glovebags, with verification by the Asbestos Abatement Project Monitor before removal operations commence. Glovebags that do not pass the smoke test will be required to be resealed and retested.
  - 5. Commence removal after first wetting the materials to be removed. Ensure ACM is continuously wetted. After removal of the ACM, scrub or brush the piping so that no visible ACM remains. Encapsulate any open ends of pipe insulation to remain.
  - 6. After the piping is cleaned, wash down the inside of the glovebag and remove the wetting tube. Collapse the glovebag using the HEPA vacuum. With the ACM at the bottom of the bag, twist and seal with the tape.



7. Place a disposal bag around the glovebag, and detach from the pipe. Seal the disposal bag and transport to the decontamination enclosure.

### **3.18 RESTORATION OF FACILITIES**

- A. Remove temporary utilities upon completion of abatement activities and notification of compliance with clearance criteria. Disconnect all temporary power, remove power lockouts, and restore power. Remove all temporary plumbing. Restore area designated for these facilities to its original condition or better.

### **3.19 DISPOSAL OF ASBESTOS WASTE**

- A. Store, transport, and dispose of all asbestos waste in accordance with the following regulations, at a minimum.
  1. 6 NYCRR Parts 360 and 364
  2. 40 CFR 61 – NESHAPS
  3. USEPA Asbestos Waste Management Guidance EPA/530-SW85
  4. 12 NYCRR 56, Section 10
- B. The following conditions apply for transportation of waste and the selected disposal site.
  1. Hauler and disposal site are subject to pre-approval by the Owner or Owner's designated representative.
  2. Provide 24-hour notification prior to removing any waste from the site. Remove waste from the site only during normal working hours, unless otherwise specified. No waste is to be taken from the site, unless the Asbestos Abatement Contractor and Asbestos Abatement Project Monitor authorizes the release of the waste, as described herein.
  3. Coordinate with the Hauler to provide the estimated date and time of arrival at the disposal site.
  4. Upon arrival at the project site, the hauler must possess and present to the Asbestos Abatement Project Monitor a valid NYSDEC Part 364 Asbestos Hauler's Permit.
  5. Coordinate with the Hauler to inspect material in the transport container prior to the Hauler taking possession and signing the asbestos waste manifests.
  6. Unless specifically approved by the Owner or Owner's designated representative, do not permit any off-site transfers of the waste or allow the waste to be transported or combined with any other off-site asbestos material. The hauler must travel directly to the disposal site, as identified on the notifications, with no unauthorized stops.
- C. The following conditions apply to waste storage containers:
  1. Ensure that all waste containers are fully enclosed and lockable (i.e., enclosed dumpster, trailer, etc.). No open containers will be permitted on-site (i.e., open dumpster with canvas cover, etc.), unless specifically permitted by an applicable or site-specific variance.
  2. Verify that the truck tags (license plates) match that listed on the 6 NYCRR Part 364 permit.
  3. Plasticize and seal the container with a minimum of 2 layers of polyethylene sheeting on the sides and floor. Once on site, keep the waste container locked at all times, except during load out. Do not use the waste container for storage of equipment or supplies.
  4. While on-site, label the container with USEPA danger signage in accordance with Paragraph 2.3(D).
  5. Stencil the NYSDEC Asbestos Hauler's Permit number on both sides and the back of the container.
  6. Do not permit the container to be loaded unless it is properly plasticized, has the appropriate danger signage affixed, and has the permit number appropriately stenciled on the container.
- D. The following conditions apply to the Owner's and Hauler's asbestos waste manifests:
  1. Utilize an asbestos waste manifest in conjunction with the asbestos hauler's manifest.
  2. Verify the manifests have the appropriate signatures prior to any waste being removed from the site.
  3. Retain copies of the completed hauler's manifest.
  4. Coordinate with the disposal facility to ensure return of the original hauler's manifest after waste is disposed of.

5. Forward copies of hauler's manifest to the Abatement Project Monitor within 14 calendar days of the waste container being removed from the site.
6. Utilize waste disposal logs. Maintain this log on-site at all times. Submit originals of all waste disposal manifests, seals, and disposal logs to the Owner with the final close-out documentation.

**END OF SECTION**

## SECTION 02 8313

### LEAD ABATEMENT AND HAZARD CONTROL ACTIVITIES

#### PART 1 GENERAL

##### 1.01 RELATED DOCUMENTS

- A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 specification sections shall apply to work of this section.

##### 1.02 SUMMARY

- A. This Section describes requirements for work activities affecting building materials in proposed renovation areas that are impacted with lead-based paint (LBP) or lead-containing materials (LCM).
  - 1. LBP is defined as paint or other surface coating that has a lead content greater than 5,000 parts per million (or 0.5 percent by weight or 1 milligram per square centimeter). LCM is herein defined as paint or other surface coating that contains a detectable concentration of lead, but is not classified as LBP based on the concentration being below the 5,000 parts per million (or 0.5 percent by weight or 1 milligram per square centimeter). For purposes of this project, defined LBP or LCM may include caulk, ceramic tiles, and/or mastics/adhesives in addition to "paint" coatings.
  - 2. For purposes of this project, work activities affecting LBP will be subject to EPA requirements for LBP abatement at "target housing" or a "child-occupied facility." Work activities affecting LCM, as defined herein, are not subject to LBP abatement requirements, but shall be managed, handled, and disposed of in accordance with applicable lead hazard control methods.
  - 3. The Contractor shall furnish all labor, materials, facilities, equipment, installation services, employee training, notifications, permits, licenses, certifications, and agreements necessary to perform the specified work. Work shall be performed in accordance with the contract documents, the latest regulations from the Occupational Safety and Health Administration (OSHA), the U.S. Environmental Protection Agency (EPA), the State of New York, and all other applicable federal, state and local agencies. Whenever the requirements of the above references conflict or overlap, the most stringent provision shall apply.
  - 4. Work that will impact LBP or LCM must be identified and coordinated relative to the full scope of work for the project.
  - 5. Verify the quantities of materials to be removed and extent of LBP or LCM to be abated/mitigated, relative to the requirements described herein and the full scope of work for the project, as the basis for the bid. Drawings depict the areas in which the work will be conducted, and show the general location of identified LBP and LCM, as determined from the hazardous materials surveys and directed lead testing performed for the site.
  - 6. The Contractor and workers must have appropriate certifications for conducting work activities that affect LBP or LCM.
    - a. For LBP abatement, the Contractor must have a current EPA lead certification, and all Workers and Supervisors must have successfully completed all courses that are required to comply with existing EPA requirements for lead abatement activities.
    - b. For work activities affecting LCM, the workers must have lead awareness training prior to commencement of the work and must be trained in accordance with requirements of OSHA Regulations 29 CFR 1926.62 and 1919.120.
  - 7. Painted surfaces that have not been tested must be assumed to contain lead, unless proven otherwise through sampling and analysis or testing with an x-ray fluorescence (XRF) analyzer.

- B. Coordinate with the Owner or the Owner's designated representative for the removal of movable furnishings and equipment, including miscellaneous small items such as tools, stored materials, files, and records, prior to commencing work in each established work area.
- C. Perform all work in such a manner as to minimize the risk of exposure to personnel, to prevent exposure to occupants, and to minimize the risk of release of lead or lead-containing debris to the environment. Heating these materials may produce fumes that are highly toxic to Workers and harmful to the environment. Removal of these materials from the structure may produce dust and chips that must be collected and contained for subsequent management and disposal.
- D. Perform all work in strict accordance with the Contract Documents and all governing codes, rules, and regulations. The information contained herein will be considered part of the Contract Documents. Where conflicts occur between the Contract Documents and applicable codes, rules, and regulations, the more stringent procedure(s) will apply.
- E. Take notice, and make employees aware, of occupational safety hazards associated with the LBP or LCM work and other work being performed on-site. Comply with any site-specific policies or safety training that may be required by the Owner.
- F. Protection of Work to Remain: Preserve and protect building materials and finishes, electrical equipment, heating and ventilation equipment, and other components and items present within each work area that is not removed or remediated. Perform work without damage to or contamination of adjacent areas. Where such areas are contaminated, specified procedures for containment must be followed, and contamination must be cleaned up. Where adjacent areas are damaged, restoration must be to original condition.
- G. Title to Materials: Waste with lead-containing materials resulting from the work, except as otherwise indicated, will remain the property of the Owner. Disposal and maintaining records of disposal will be the responsibility of the Contractor.

### **1.03 REGULATIONS AND CODES**

- A. Comply with the codes and standards listed below, except where more stringent requirements are shown and/or specified. Specific regulations, standards, and guidance documents are listed for informational purposes due to relevance to the work described herein. Specific regulations, standards, and guidance documents that are not listed may also be applicable to the work.
  - 1. Federal:
    - a. American National Standard Institute (ANSI)
      - 1) ANSI Z88.2-80, Practices for Respiratory Protection
    - b. Code of Federal Regulations (CFR)
      - 1) 29 CFR 1910.1200, "Hazard Communication"
      - 2) 29 CFR 1910.134, "Respiratory Protection"
      - 3) 29 CFR 1926, "Construction Industry"
        - a) 29 CFR 1926.62, "Lead Exposure in Construction"
      - 4) 40 CFR 260, "Hazardous Waste Management System: General"
      - 5) 40 CFR 261, "Identification and Listing of Hazardous Waste"
      - 6) 40 CFR 262, "Standards Applicable to Generators of Hazardous Waste"
      - 7) 40 CFR 263, "Standards Applicable to Transporters of Hazardous Waste"
      - 8) 40 CFR 264, "Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities"
      - 9) 40 CFR 265, "Interim Status Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities"
      - 10) 40 CFR 268, "Land Disposal Restrictions"
      - 11) 49 CFR 171-172, "Transportation Standards"
    - c. Occupational Safety and Health Administration (OSHA)
    - d. United States Department of Transportation (USDOT)

- e. United States Environmental Protection Agency (EPA)
  - 1) Toxic Substance Control Act (TSCA)
  - 2) Renovation, Repair, and Painting (RRP) Rule
- f. United States Department of Housing and Urban Development (HUD)
  - 1) "Guidelines for the Evaluation and Control of Lead Based Paint Hazards"
- 2. New York State:
  - a. Compilation of the Rules and Regulations of the State of New York (NYCRR)
    - 1) 6 NYCRR, Part 360, "Solid Waste Management Facilities"
    - 2) 6 NYCRR, Part 364, "Waste Transporter Permits"
    - 3) 6 NYCRR, Part 370, "Hazardous Waste Management System – General"
    - 4) 6 NYCRR, Part 371, "Identification and Listing of Hazardous Wastes"
    - 5) 6 NYCRR, Part 372, "Hazardous Waste Manifest System and Related Standards for Generators, Transporters, and Facilities"
    - 6) 6 NYCRR, Part 373, "Hazardous Waste Management Facilities"
  - b. New York State Department of Environmental Conservation (NYSDEC)
  - c. New York State Department of Health (NYSDOH)
  - d. New York State Department of Transportation (NYSDOT)

#### **1.04 ENVIRONMENTAL CONSULTANT**

- A. An Environmental Consultant will be retained by the Owner under separate contract, to represent the Owner in matters pertaining to the work performed in accordance with these specifications and requirements.
- B. The Environmental Consultant is authorized by the Owner to provide monitoring during LBP abatement work, to interpret procedures and to enforce provisions of the contract documents and EPA regulations pertaining to the abatement of LBP.
- C. If, in the opinion of the Environmental Consultant, there is a substantial non-conformance with the contract documents and/or a situation presenting a health hazard to workers or to the Owner's employees, the Environmental Consultant will be authorized to stop work.
- D. The Environmental Consultant's role in health and safety matters does not alleviate the Contractor's obligation to comply with all applicable health and safety regulations promulgated by the local, state, or federal government.
- E. The Environmental Consultant will provide work area clearance pursuant to requirements of 40 CFR 745.227(e)(8).
  - 1. Should any visual clearance or clearance wipe sample(s) fail to meet clearance criteria, the Contractor will be directed to re-clean the work area and new clearance wipe samples will be collected. The Contractor will be responsible for any and all costs incurred due to clearance sample failures.

#### **1.05 SUBMITTALS**

- A. Submit in accordance with applicable provisions of the Contract Documents. See Section 01 3300 - Submittal Procedures, for submittal process.
- B. Pre-Work Submittals: Submit a minimum of 10 days prior to the anticipated commencement of work activities affecting LBP and/or LCM and expedite any resubmissions.
  - 1. Provide a Work Plan that describes LBP abatement methods and work areas, work procedures and cleaning procedures for work affecting LCM, and procedures for collection and disposal of waste materials to be implemented when working with materials impacted by LBP or LCM. Provide applicable Workers' training and refresher training certifications and copies of fit test and medical clearance records.
  - 2. Provide an Occupant Protection Plan, applicable to the LBP abatement work, that describes the work practices and precautionary measures that will be utilized at the facility to protect building occupants from lead exposure during abatement activities. The

Occupant Protection Plan can be included as part of the Work Plan submittal described in Subparagraph 1.05(B)(1).

3. Disposal site/landfill permit
  4. Material Safety Data Sheets (MSDS) or Safety Data Sheets (SDS) for proposed detergents or cleaning products, chemical strippers, and/or other products proposed for use during work with LBP or LCM.
- C. Close-out Submittals: Within 30 days of project completion, and prior to final payment, submit a closeout package to include:
1. Copy of laboratory analysis report for waste characterization sampling and analysis, as described in Article 3.08.
  2. Submit originals of all waste disposal manifests, as applicable, and waste disposal receipts within 30 days of transport for waste that includes lead.
  3. Provide a Record Drawing indicating the quantities and location of LBP abatement work.
  4. Certification of LBP Abatement: The Contractor's Supervisor shall certify in writing that all LBP abatement work has been completed in accordance with this specification and all applicable federal and state regulations.

## **PART 2 PRODUCTS**

### **2.01 PROJECT LOG BOOK**

- A. Provide a permanently bound project log book to document the LBP abatement work. Include, on the title page, the project name; name, address, and telephone number of Owner; name, address, and telephone number of the Contractor; and emergency numbers, including, but not limited to, local Fire/Rescue Department. Provide a written description of daily activities pertaining to the LBP abatement, locations of completed work, a record of workers engaged in such work, and summary of generated waste and waste disposal log.
- B. Record all entries in non-washable, permanent ink.
- C. Ensure that all persons entering and exiting the work area sign the log and include name, employer, and time of entrance and exiting.
- D. The Lead Supervisor will be responsible to document the information to be provided in the project log book.

### **2.02 PERSONAL PROTECTIVE EQUIPMENT**

- A. The minimum personal protective equipment (PPE) is Level D Modified (hard hat, safety glasses, and steel-toed boots), at all times at the project site both inside and outside the work areas. Select and use additional requisite PPE, including respiratory protection and disposable protective clothing, pursuant to project conditions and requirements and OSHA regulations and procedures.
- B. For use of respiratory protection, ensure that respirators and filters are selected, used, maintained, and stored pursuant to an established respiratory protection program that is compliant with OSHA 29 CFR 1910.134 requirements. Provide for surveillance of working conditions to ensure the selected respirator provides adequate protection, as defined in OSHA 29 CFR 1926.1101.
- C. Provide workers and authorized visitors with suitable PPE whenever they enter the work area.

### **2.03 SIGNS AND LABELS**

- A. Provide warning signs and barrier tapes at all approaches to each LBP abatement work area and at all approaches to work areas where LCM will be disturbed. Locate signs at such distance that personnel may read the sign and take the necessary protective steps required

before entering the area. Reference applicable section of 29 CFR 1926 for additional details pertaining to signage.

- B. Provide labels for waste containers in accordance with applicable USEPA, USDOT, and NYSDOT regulations.

#### **2.04 POLYETHYLENE SHEETING**

- A. Unless otherwise indicated, use polyethylene sheeting that is at least 6 mil fire retardant sheeting.

#### **2.05 HEPA VACUUM EQUIPMENT**

- A. Conduct all vacuuming of surfaces within work area using HEPA filter equipped industrial vacuums conforming to ANSI Z9.2.
- B. For removal activities that may generate dust, provide tools and specialized equipment with integral vacuum hoods connected to a HEPA vacuum with flexible hose.

#### **2.06 CLEANING OR PAINT REMOVAL PRODUCTS**

- A. Provide products that are considered suitable for the types of surfaces being cleaned or treated. Do not utilize products that could produce noxious fumes, contain methylene chloride, or may result in staining, discoloration, or other damage to the substrate materials.

#### **2.07 DISPOSAL BAGS, DRUMS, AND CONTAINERS**

- A. Provide disposal drums and/or containers, and appropriate labels that comply with applicable USEPA, USDOT, and NYSDOT regulations.

#### **2.08 WATER AND ELECTRICAL**

- A. Coordinate water and electrical service with the Owner prior to initiation of work. Verify suitability and location of all connections.

#### **2.09 OTHER PRODUCTS AND MATERIALS**

- A. For other products or materials that are required for use during work activities, ensure compliance with local, state, and federal codes and regulations, if applicable. Furnish and utilize industry standard equipment and materials. Do not furnish equipment or materials that have been altered in such a manner that violates local, state, and/or federal codes and regulations, or presents unnecessary health and safety risks.

### **PART 3 EXECUTION**

#### **3.01 NOTIFICATION**

- A. Notify the Owner or Owner's designated representative a minimum of 5 business days prior to initiating work that will affect LBP or LCM.
- B. Provide notification of LBP abatement activities pursuant to 40 CFR Part 745 requirements. Notification must be provided at least 5 business days prior to the start of LBP abatement activities.

#### **3.02 EMPLOYEE PROTECTION**

- A. Comply with all applicable OSHA requirements. Refer to Article 2.02 for details pertaining to PPE.

#### **3.03 PERSONAL AIR MONITORING**

- A. Personal air monitoring required by the OSHA is the responsibility of the Contractor, not the Owner or Owner's representative.

### **3.04 PROJECT SUPERVISOR**

- A. Designate a full-time Project Supervisor, with the following minimum qualifications.
  - 1. The Project Supervisor must have a minimum of 3 years experience with lead safe work practices and performing work per requirements of the OSHA 29 CFR 1926.62 standard.
  - 2. The Project Supervisor must be able to read and write English fluently, and be able to communicate in the primary language of the workers.
  - 3. For the LBP abatement work, the Project Supervisor must maintain a current EPA Lead Supervisor certification. The Project Supervisor for the LBP abatement work can be different than the Project Supervisor for work activities affecting LCM.
- B. Ensure the Project Supervisor is on-site at all times during work activities that affect LBP or LCM and is responsible for the performance of the work. The designated Project Supervisor will be the primary point of contact relative to the work activities associated with LBP or LCM.

### **3.05 WORK AFFECTING LCM**

- A. Remove, contain, collect, and dispose of LCM that are disturbed during the project, in addition to dust and debris that are generated during the work activities. Perform work using lead safe work practices and in compliance with applicable federal, state, and local regulations.
- B. Work areas involving the renovation, cutting, modification, or other type of activity that would disturb LCM will be considered a hazard area per OSHA 29 CFR 1926 for protection of Workers unless the Contractor has removed the potential sources of airborne lead.
- C. Disturbance methods must be performed in a manner that will control lead hazards and limit worker exposure to lead hazards. Ensure that provisions are implemented to minimize the generation of dust during the demolition and removal operations. Wherever possible, remove existing building components without cutting, heating, abrading, or otherwise significantly disturbing the LCM.
- D. Utilize work area containment, signage and barriers, lead safe removal and cleaning methods, change areas, showers/wash facilities, employee monitoring, recordkeeping, and other applicable work practices, as necessary to complete the work in compliance with OSHA 29 CFR 1926.62.
- E. Ensure that wastes with LCM are properly handled during each project phase, and packaged and maintained in appropriate containers. Implement provisions to prevent lead contamination of the surrounding environment. Provide for sampling and analysis and disposal of waste with lead, as described in Article 3.08.

### **3.06 LBP ABATEMENT**

- A. Decontamination Enclosures and Work Area Preparation
  - 1. Construct a decontamination unit immediately outside the LBP abatement work areas.
    - a. At a minimum, the decontamination unit must consist of an equipment room, a dirty room, and a wash area in series. Provide a clean area for Workers to change into PPE.
    - b. Cover the ceiling and walls of the decontamination unit with 2 layers of 6 mil polyethylene sheeting. Cover the floor with 2 layers of reinforced polyethylene sheeting.
    - c. Construct the decontamination unit of a size sufficient to hold the waste containers, and allow workers to apply and remove PPE. Utilize sealable waste containers in this area for contaminated PPE.
    - d. Include a wash station with warm water, soap, and towels in the decontamination unit.



- e. Provide lockers or storage bins for Workers to store street clothes when donning PPE.
- f. Provide a lockable door.
- 2. The following conditions apply to interior work area preparation procedures.
  - a. Post lead warning signs at all approaches to the lead abatement work area. Post all emergency exit signs only on the work area side of the containment, and post with lead warning signs on the non-work area side. Provide all non-work area stairs and corridors accessible to the lead abatement work area with warning tapes at the base of the stairs and the beginning of the corridors.
  - b. If possible, shut down and lock out the building HVAC and electrical systems. Provide temporary electric power and lighting, as applicable.
  - c. Pre-clean all surfaces and objects within the work area using HEPA vacuuming. For movable objects, perform HEPA vacuuming and remove from the work area. For non-movable equipment, cover with polyethylene sheeting, at least 6 mil in thickness, and secure in place with duct tape and/or spray adhesive.
  - d. Cover the floor surface a minimum of 6 feet beyond the perimeter of surfaces undergoing abatement or a sufficient distance to contain the dust, whichever is greater.
  - e. Provide enclosure of the work area necessary to isolate it from unsealed areas of the building.
  - f. Seal off all openings, including, but not limited to, windows, diffusers, grilles, electrical outlets and boxes, doors, floor drains, and any other penetrations of the work area enclosure, using 2 layers of at least 6 mil fire retardant polyethylene sheeting to form a critical barrier.
  - g. Secure polyethylene sheeting with spray adhesive and then seal with duct tape, or equivalent. Ensure all joints in polyethylene sheeting overlap a minimum of 12 inches.
  - h. Frame out emergency exits. Provide double-layered 6 mil polyethylene sheeting and tape seal opening. Post as emergency exits only. Within the work area, mark the locations and directions of emergency exits throughout the work area, using exit signs and/or duct tape.
  - i. Remove all items attached to, or in contact with, LBP only after the work area enclosure is in place. HEPA vacuum all removed items prior to removal from the work area and before the start of the LBP abatement activities.
- 3. The following conditions apply to exterior work area preparation procedures.
  - a. Provide barriers, as necessary, to isolate the work area. Post lead warning signs at approaches to the lead abatement work area, as applicable.
  - b. Close all doors and windows on the side of the building upon which abatement is being performed. For doors and windows on the side of the building where a dust-generating method will be used, cover with polyethylene sheeting at the level of the dust-generating removal method and all levels below.
  - c. Cover the ground and vegetation with a waterproof canvas tarp that is weighted at the edges to prevent blowing. The edges of the tarp must be elevated to trap debris and water, and must be taped or otherwise attached to the structure. Ensure the tarp extends a minimum of 10 feet from the building or a sufficient distance to collect falling debris, whichever is greater.
  - d. Seal off all openings, including, but not limited to, windows, diffusers, grilles, electrical outlets and boxes, doors, drains, and any other penetrations within the work area, using 2 layers of at least 6 mil fire retardant polyethylene sheeting to form a critical barrier or other appropriate component-specific means.
  - e. Secure polyethylene sheeting with spray adhesive and then seal with duct tape, or equivalent. Ensure all joints in polyethylene sheeting overlap a minimum of 12 inches.

4. Remove all items attached to, or in contact with, LBP only after the work area enclosure is in place. HEPA vacuum all removed items prior to removal from the work area and before the start of the LBP abatement activities.

B. LBP Abatement Work Activities

1. Provide continuous on-site supervision by personnel knowledgeable and trained in all aspects of LBP removal and disposal.
2. Install and remove all temporary containment facilities. Provide and maintain environmental protective measures, equipment, and procedures at the work site.
3. Remove, contain, collect, and dispose of LBP or items impacted with LBP that are disturbed during the project, in compliance with all applicable federal, state, and local regulations.
4. Disturbance methods must be performed in a manner that will control lead hazards and limit worker exposure to lead hazards, and must be compliant with HUD guidelines and EPA regulations. Ensure that provisions are implemented to minimize the generation of dust during the demolition and removal operations. Wherever possible, remove existing building components without cutting, heating, abrading, or otherwise significantly disturbing the LBP. The following disturbance methods are prohibited.
  - a. Open flame burning or torching.
  - b. Machine sanding or grinding without a HEPA local exhaust control.
  - c. Abrasive blasting or sandblasting without HEPA local exhaust control.
  - d. Heat guns operating above 1,100 degrees Fahrenheit or charring the paint.
  - e. Dry sanding or dry scraping, except dry scraping in conjunction with heat guns or within 1 foot of electrical outlets.
  - f. Paint stripping in a poorly ventilated space using a volatile stripper that is a hazardous substance per 16 CFR 1500.3, and/or a hazardous chemical per 29 CFR 1910.1200 or 29 CFR 1926.59, as applicable to the work.
5. The following conditions shall apply to work area cleaning.
  - a. Clean all surfaces within the established work area using HEPA vacuuming and wet washing/wiping methods.
  - b. At a minimum, perform an initial clean with HEPA vacuum, followed by wet washing/wiping, followed by a final pass with HEPA vacuum.
  - c. Commence each cleaning phase at the ceiling level and finish at the floor level.
  - d. For work areas with multiple rooms or distinct functional spaces, sequence cleaning from areas that are generally considered to be in the cleanest condition to dirtier conditions and avoid passing through rooms or spaces already cleaned.
  - e. Perform wet washing/wiping using a detergent or cleaning agent that is suitable for cleaning of dust from surfaces. Select detergents or cleaning agents in consideration of the types of surfaces to be cleaned, such that the surface finishes will not be damaged. Mix and use cleaning agents pursuant to the manufacturer's instructions.
  - f. Collect all residual waste material by HEPA vacuum. Sweeping of materials is prohibited. Cleaning with compressed air and/or other methods that could unnecessarily spread and disperse dust to other areas are also not permitted.
  - g. Perform clean-up operations as the work progresses and on a daily basis at a minimum. Waste debris must be properly containerized at all times.
6. Utilize work area containment, signage and barriers, lead safe removal and cleaning methods, change areas, showers/wash facilities, employee monitoring, recordkeeping, and other applicable work practices, as necessary to complete the work in compliance with OSHA 29 CFR 1926.62 and EPA requirements.
7. Ensure that wastes with LCM are properly handled during each project phase, and packaged and maintained in appropriate containers. Implement provisions to prevent lead contamination of the surrounding environment. Provide for sampling and analysis and disposal of waste with lead, as described in Article 3.08.

C. Work Area Clearance

1. An Environmental Consultant will be retained by the Owner, under separate contract, to perform post-abatement visual work area clearance and collect post-abatement wipe samples for lead analysis. The post-abatement wipe samples must be in compliance with HUD and EPA standards, prior to the work area being deconstructed. In the event that the post-abatement visual assessment or wipe sample results are not satisfactory, the Contractor will be responsible for additional abatement and cleaning.

**3.07 RESTORATION OF FACILITIES**

- A. Remove any installed temporary utilities upon completion of abatement activities and notification of compliance with clearance criteria. Disconnect all temporary power, remove power lockouts, and restore power if applicable. Remove all temporary plumbing.

**3.08 DISPOSAL OF WASTE WITH LEAD**

- A. Prior to disposal of waste with lead, provide for the collection and laboratory analysis of a waste characterization sample(s). Provide for laboratory analysis for toxicity in accordance with USEPA methods (i.e., Toxicity Characteristic Leaching Procedure (TCLP) lead). Laboratory analysis must be performed by a NYSDOH Environmental Laboratory Approval Program (ELAP) certified laboratory.
  1. Waste materials with a TCLP lead concentration equal to or greater than the TCLP limit for lead of 5 parts per million must be classified as hazardous waste. Package, transport, and dispose of hazardous waste in accordance with all requirements of the agencies listed in Article 1.03. Ensure that the time periods for on-site storage of hazardous wastes do not exceed maximum timeframes permitted by federal, state, and local regulations.
  2. Waste materials with a TCLP lead concentration less than the TCLP limit for lead of 5 parts per million can be processed and disposed of as non-hazardous waste, provided there are no other characteristics that would render the waste as hazardous. Package, transport, and dispose of non-hazardous waste in accordance with all requirements of the agencies listed in Article 1.03.
- B. Provide waste disposal documentation as specified in Article 1.05.

**END OF SECTION**

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**SECTION 03 0516  
UNDERSLAB VAPOR BARRIER - STEGO**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Sheet vapor barrier under concrete slabs on grade.

**1.02 RELATED REQUIREMENTS**

**1.03 REFERENCE STANDARDS**

- A. ASTM E1643 - Standard Practice for Selection, Design, Installation and Inspection of Water Vapor Retarders Used in Contact with Earth or Granular Fill Under Concrete Slabs 2018a.
- B. ASTM E1745 - Standard Specification for Plastic Water Vapor Retarders Used in Contact with Soil or Granular Fill under Concrete Slabs 2017.

**1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Submit manufacturers' data on manufactured products.
- C. Samples: Submit samples of underslab vapor barrier to be used.
- D. Manufacturer's Installation Instructions: Indicate installation procedures and interface required with adjacent construction.

**PART 2 PRODUCTS**

**2.01 MATERIALS**

- A. Underslab Vapor Barrier:
  - 1. Water Vapor Permeance: Not more than 0.010 perms, maximum.
  - 2. Thickness: 15 mils.
  - 3. Basis of Design:
    - a. Stego Industries LLC; Stego Wrap Vapor Barrier (15-mil):  
[www.stegoindustries.com/#sle](http://www.stegoindustries.com/#sle).
    - b. Substitutions: See Section 01 6000 - Product Requirements.
- B. Accessory Products: Vapor barrier manufacturer's recommended tape, adhesive, mastic, etc., for sealing seams and penetrations in vapor barrier.

**PART 3 EXECUTION**

**3.01 EXAMINATION**

- A. Verify that surface over which vapor barrier is to be installed is complete and ready before proceeding with installation of vapor barrier.

**3.02 INSTALLATION**

- A. Install vapor barrier in accordance with manufacturer's instructions and ASTM E1643.
- B. Install vapor barrier under interior slabs on grade; lap sheet over footings and seal to foundation walls.
- C. Lap joints minimum 6 inches.
- D. Seal joints, seams and penetrations watertight with manufacturer's recommended products and follow manufacturer's written instructions.
- E. No penetration of vapor barrier is allowed except for reinforcing steel and permanent utilities.
- F. Repair damaged vapor retarder before covering with other materials.

**END OF SECTION**

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**SECTION 03 1000  
CONCRETE FORMING AND ACCESSORIES**

**PART 2 PRODUCTS**

**1.01 FORMWORK - GENERAL**

- A. Provide concrete forms, accessories, shoring, and bracing as required to accomplish cast-in-place concrete work.
- B. Design and construct concrete that complies with design with respect to shape, lines, and dimensions.
- C. Comply with applicable state and local codes with respect to design, fabrication, erection, and removal of formwork.

**END OF SECTION**

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**SECTION 03 2000  
CONCRETE REINFORCING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Reinforcing steel for cast-in-place concrete.
- B. Supports and accessories for steel reinforcement.

**1.02 RELATED REQUIREMENTS**

- A. Section 03 3000 - Cast-in-Place Concrete.
- B. Section 04 2000 - Unit Masonry: Reinforcement for masonry.

**1.03 PRICE AND PAYMENT PROCEDURES**

- A. See Section 01 2200 - Unit Prices, for additional unit price requirements.
- B. Bar Reinforcement: By the ton. Includes reinforcement, placement, and accessories.
- C. Welded Wire Reinforcement: By the square foot. Includes welded wire reinforcement, placement, and accessories.

**1.04 REFERENCE STANDARDS**

- A. ACI 301 - Specifications for Concrete Construction 2020.
- B. ACI 318 - Building Code Requirements for Structural Concrete 2019, with Errata (2021).
- C. ACI SP-66 - ACI Detailing Manual 2004.
- D. ASTM A184/A184M - Standard Specification for Welded Deformed Steel Bar Mats for Concrete Reinforcement 2019.
- E. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement 2020.
- F. ASTM A706/A706M - Standard Specification for Deformed and Plain Low-Alloy Steel Bars for Concrete Reinforcement 2016.
- G. ASTM A767/A767M - Standard Specification for Zinc-Coated (Galvanized) Steel Bars for Concrete Reinforcement 2019.
- H. ASTM A1064/A1064M - Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete 2018a.
- I. ASTM D3963/D3963M - Standard Specification for Fabrication and Jobsite Handling of Epoxy-Coated Steel Reinforcing Bars 2021.
- J. AWS D1.4/D1.4M - Structural Welding Code - Steel Reinforcing Bars 2018, with Amendment.
- K. CRSI (DA4) - Manual of Standard Practice 2009.

**1.05 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Comply with requirements of ACI SP-66. Include bar schedules, shapes of bent bars, spacing of bars, and location of splices.
  - 1. Prepare shop drawings under seal of a Professional Structural Engineer experienced in design of work of this type and licensed in the State in which the Project is located.
- C. Manufacturer's Certificate: Certify that reinforcing steel and accessories supplied for this project meet or exceed specified requirements.
- D. Reports: Submit certified copies of mill test report of reinforcement materials analysis.

**1.06 QUALITY ASSURANCE**

- A. Perform work of this section in accordance with ACI 301.
  - 1. Maintain one copy of each document on project site.

- B. Welders' Certificates: Submit certifications for welders employed on the project, verifying AWS qualification within the previous 12 months.

## **PART 2 PRODUCTS**

### **2.01 MANUFACTURERS**

- A. Continuously Galvanized Reinforcing Steel:
  - 1. AZZ, Inc; Galvabar; [ ]: [www.azz.com/#sle](http://www.azz.com/#sle).
  - 2. Substitutions: See Section 01 6000 - Product Requirements.

### **2.02 REINFORCEMENT**

- A. Reinforcing Steel: ASTM A615/A615M, Grade 60 (60,000 psi).
  - 1. Plain billet-steel bars.
  - 2. Unfinished.
  - 3. Galvanized in accordance with ASTM A767/A767M, Class I.
  - 4. Continuously galvanized in accordance with ASTM A1094/A1094M.
- B. Reinforcing Steel: ASTM A706/A706M, deformed low-alloy steel bars.
  - 1. Unfinished.
  - 2. Galvanized in accordance with ASTM A767/A767M, Class I.
  - 3. Continuously galvanized in accordance with ASTM A1094/A1094M.
- C. Stirrup Steel: ASTM A1064/A1064M steel wire, unfinished.
- D. Steel Welded Wire Reinforcement (WWR): Galvanized, deformed type; ASTM A1064/A1064M.
  - 1. Form: Flat Sheets.
  - 2. WWR Style: 4 x 8-W6 x W10.
- E. Reinforcement Accessories:
  - 1. Tie Wire: Annealed, minimum 16 gage, 0.0508 inch.
  - 2. Chairs, Bolsters, Bar Supports, Spacers: Sized and shaped for adequate support of reinforcement during concrete placement.

### **2.03 FABRICATION**

- A. Fabricate concrete reinforcing in accordance with CRSI (DA4) - Manual of Standard Practice.
- B. Welding of reinforcement is not permitted.
- C. Welding of reinforcement is permitted only with the specific approval of Architect. Perform welding in accordance with AWS D1.4/D1.4M.
  - 1. Galvanized Reinforcement: Clean surfaces, weld and re-protect welded joint in accordance with CRSI (DA4).
- D. Fabricate and handle epoxy-coated reinforcing in accordance with ASTM D3963/D3963M.
- E. Locate reinforcing splices not indicated on drawings at point of minimum stress.
  - 1. Review locations of splices with Architect.

## **PART 3 EXECUTION**

### **3.01 PLACEMENT**

- A. Place, support and secure reinforcement against displacement. Do not deviate from required position.
- B. Do not displace or damage vapor barrier.
- C. Accommodate placement of formed openings.
- D. Comply with applicable code for concrete cover over reinforcement.
- E. Bond and ground all reinforcement to requirements of Section 26 0526.

### **3.02 FIELD QUALITY CONTROL**

- A. An independent testing agency, as specified in Section 01 4000 - Quality Requirements, will inspect installed reinforcement for compliance with contract documents before concrete placement.

**END OF SECTION**

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**SECTION 03 3000  
CAST-IN-PLACE CONCRETE**

**PART 1 GENERAL**

**1.01 SUMMARY**

1. Section Includes Cast-in-place (CIP) structural concrete, including
  - a. Concrete Formwork and Formwork Accessories
  - b. Concrete Mixtures and Admixtures
  - c. Steel Concrete Reinforcement and Accessories
  - d. Curing compounds
  - e. Grout
  - f. Crack repair and epoxy adhesives
  - g. Joint fillers and sealants
  - h. Concrete slab surface densifier and sealer
  - i. Evaporation reducer for freshly placed concrete
  - j. Vapor Barrier under slabs on grade
  - k. Handling, placing, and constructing
2. Products Installed But Not Furnished Under This Section:
  - a. Anchor rods, leveling plates, railing sleeves, brackets, and other embedded items of steel, vinyl, plastic, or other materials. Refer to specification sections where the embedded item is described.
  - b. Sleeves for pipe, conduit and other items passing through or embedded in concrete. Refer to the specification section where the item is described.
3. Related Sections.
  - a. Code Required Special Inspections and Procedures – Section 01 4533
  - b. Unit Masonry – Section 04 2000
  - c. Structural Steel Framing – Section 05 1200

**1.02 DEFINITIONS**

- A. ACI 301, Section 1.2 - Definitions:
  1. Add the following definitions:
    - Cementitious Material: Cementitious materials include cement, ground blast furnace slag and fly ash.
    - Corrosion Inhibitor Admixture: A liquid admixture, calcium nitrite that inhibits corrosion of concrete-embedded steel in the presence of chloride ions.
    - Pumped Concrete: Concrete that is conveyed by pumping pressure through rigid pipe or flexible hose.
    - Water-to-Cementitious Ratio (w/c): An equational value representing quantity in pounds of free moisture available for cement hydration divided by quantity of cementitious materials in pounds per cubic yard concrete.

**1.03 REFERENCES**

- A. Work on this project shall conform to all requirements of ACI 301-16 published by the American Concrete Institute, Farmington Hills, Michigan, except as modified by these Contract Documents.
- B. Reference publications
  - 1. ACI 301-16: Specifications for Structural Concrete.
  - 2. ACI 302.1R-15: Guide for Concrete Floor and Slab Construction.
  - 3. ACI 304.2R-17: Placing Concrete by Pumping Methods.
  - 4. ACI 305R-20: Hot Weather Concreting.
  - 5. ACI 306R-16: Cold Weather Concreting (Re-approved 1997).
  - 6. ACI 308.1-11: Standard Specification for Curing Concrete.
  - 7. ACI 318-14 Building Code Requirements for Reinforced Concrete.
  - 8. ASTM C 94/C 94M – 15a: Standard Specification for Ready- Mixed Concrete.
  - 9. ASTM C33/C33M – Standard Specification for Concrete Aggregates 2018.
  - 10. ASTM C39/C39M – Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens 2021.
  - 11. ASTM C 494/C 494M – 119: Standard Specification for Chemical Admixtures for Concrete.
  - 12. ASTM C143/C143M – Standard Test Method for Slump of Hydraulic-Cement Concrete 2020.
  - 13. ASTM C150/C150M – Standard Specification for Portland Cement 2020.
  - 14. ASTM C 311-18 Standard Methods of Sampling and Testing Fly Ash or Natural Pozzolans for use as a mineral admixture in Portland Cement Concrete.
  - 15. ASTM C173/C173M - Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method 2016.
  - 16. ASTM E1155 - Standard Test Method for Determining F(F) Floor Flatness and F(L) Floor Levelness Numbers 2020.
  - 11. Manual of Standard Practice, MSP of the Concrete Reinforcing Steel Institute.

#### **1.04 STANDARDS PRODUCING ORGANIZATIONS**

- A. Refer to ACI 301-16

#### **1.05 SUBMITTALS**

- A. See Section 01 3000 – Administrative Requirements for submittal procedures.
- B. Product Data: Submit manufacturer's data on manufactured products showing compliance with specified requirements and installation instructions.
  - 1. For curing compounds, provide data on compatibility with floor covering products and adhesives and/or method of removal in the event of incompatibility with floor covering adhesive.
- C. Mix Design
  - 1. Mix Design: Submit proposed concrete design mix(es) together with name and location of batching plant at least 28 days prior to the start of concrete work.
    - a. Include test results of proposed concrete proportions based on previous field experience or laboratory trial batches in accordance with ACI 301, Section 4.
    - b. Pumped Concrete: Include test results of proposed design mix(es) tested under actual field conditions with the maximum horizontal run and vertical lift required for this project.
  - 2. Portland Cement: Brand and manufacturer's name.

3. Fly Ash: Name and location of source, and DOT test numbers.
  4. Air-entraining Admixture: Brand and manufacturer's name.
  5. Water-reducing Admixture: Brand and manufacturer's name.
  6. High Range Water-reducing Admixture (Superplasticizer): Brand and manufacturer's name.
  7. Accelerating Admixture: Brand and manufacturer's name.
  8. Aggregates: Name and location of source, and DOT reference and test numbers.
- C. Reinforcing Steel
1. Shop Drawings: Placing drawings for bar reinforcement.
  2. Affidavit by the bar reinforcement manufacturer certifying that bar material meets the contract requirements.

## 1.06 QUALITY ASSURANCE

- A. Refer to Section 014533-Special Inspections and Testing, for Concrete Construction inspection and testing to be performed by the Owner's Inspection and Testing Agency.
- B. Qualifications of Crew Pumping Concrete: Workers pumping concrete shall have had at least one year of experience pumping concrete.
- C. Concrete batching plants shall be currently approved as concrete suppliers by the New York State Department of Transportation.
- D. Truck mixers for concrete shall be currently approved by the New York State Department of Transportation.
- E. Pumping equipment for pumped concrete shall be subject to the approval of the Architect.
- F. Fly ash supplier shall be on the New York State Department of Transportation's current "Approved List of Suppliers of Fly Ash".
- G. Source Quality Control: The Owner reserves the right to inspect and approve the following items, at his own discretion, either with his own forces or with a designated inspection agency:
  1. Batching and mixing facilities and equipment.
  2. Sources of materials.
- H. Pre-Construction Conference: Attend a Pre-Construction Conference at the job site conducted by the Architect's Representative prior to the start of concrete placement for the purpose of reviewing the requirements and procedures of the Contract Documents.
- I. Field Quality Control
  1. ACI 301, Section 1.6.4.2 - Testing Services:
    - a. Add the following paragraph:
      - 1.6.4.2.e Strength Tests for Pumped Concrete: Prepare strength test specimens and make strength tests from concrete samples obtained at the truck discharge chute and at the end of the pump delivery line in accordance with paragraph 16.3.4.4.
  2. ACI 301, Section 1.6.3.3.

- a. Add the following paragraph:
  - 1.6.3.3.c Make available to the Owner's Inspections and Testing Agency whatever test samples are required to make tests. Furnish shipping boxes for compression test cylinders.
3. Adjustment to Concrete Mixes: Mix design adjustments may be requested by the Contractor when characteristics of materials, job conditions, weather, test results, or other circumstances warrant, at no additional cost to the Owner and as accepted by the Architect. Laboratory test data for revised mix design and strength results must be submitted to and accepted by the Architect's Representative before using in the work.
4. Test results will be reported by the Owner's Testing Agency in writing to the Architect's Representative and Contractor within 24 hours after tests. Reports of compressive strength tests shall contain the project identification name and number, date of concrete placement, name of concrete testing service, concrete type and class, location of concrete batch in structure, design compressive strength at 28 days, concrete mix proportions and materials, compressive breaking strength, and type of break for both 7-day tests and 28-day tests.
5. Nondestructive Testing: Impact hammer, Windsor probe, or other nondestructive device may be permitted but shall not be used as the sole basis for acceptance or rejection.
6. Additional Tests: The Architect shall require additional tests of in-place concrete when test results indicate specified concrete strengths and other characteristics have not been attained in the structure, as directed by the Architect's Representative. The Owner's Testing Agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42, or by other methods as directed. Contractor shall pay for such tests when unacceptable concrete is verified, including all inspection and Engineering fees when non-conforming work is verified.

## **1.07 DELIVERY**

- A. ASTM C 94/C 94M - 04, Article 13.1 - Batch Ticket Information: In addition to the information required by Paragraph 16.1, also include the following:
  1. Type and brand, and amount of cement.
  2. Weights of fine and coarse aggregates.
  3. Class and brand, and amount of fly ash (if any).

## **PART 2 PRODUCTS**

### **2.01 MATERIALS**

- A. Cement: ASTM C 150, Type I or II Portland cement.
- B. Water: Potable
- C. Air-entraining Admixture: ASTM C 260, and on the New York State Department of Transportation's current "Approved List".
- D. Water-reducing Admixture: ASTM C 494/C 494M - 04, Type A, and on the New York State Department of Transportation's current "Approved List".



- E. High Range Water-reducing Admixture (Superplasticizer): ASTM C 494/C 494M - 04, Type F, and on the New York State Department of Transportation's current "Approved List".
- F. Retarding Admixture: ASTM C 494, Type D, Water-reducing and retarding, for use in hot weather concreting, and on the New York State Department of Transportation's current "Approved List".
- G. Accelerating Admixture: Non-corrosive admixture, containing no chloride, complying with ASTM C 494, Type C or E, and on the New York State Department of Transportation's current "Approved List".
- H. Fly Ash: ASTM C 618, including Table 1 (except for footnote A), Class F except that loss on ignition shall not exceed 4.0 percent.
- I. ACI 301, Section 4.2.1.2 - Aggregates:
  - 1. Add the following paragraph:
    - Fine aggregate for pumped concrete shall meet the requirements of ASTM C 33, except 15 to 30 percent shall pass the No. 50 sieve and 5 to 10 percent shall pass the No. 100 sieve. The fineness modulus of the fine aggregate for pumped concrete shall not vary more than 0.20 from the average value used in proportioning.
  - 2. Add the following paragraph:
    - Aggregates shall be taken from storage silos or other approved locations that have been tested and approved by the New York State Department of Transportation, unless otherwise approved in writing by the Architect.
- J. Moisture-Retaining Cover: Waterproof paper, polyethylene film, or polyethylene-coated burlap complying with ASTM C 171.
- K. Joint Fillers and Sealants (Contraction Joints within the building and in the concrete slabs on grade):
  - 1. Elastomeric Polyurea Joint Sealant
    - a). MasterSeal CR 100 by BASF Building Systems
    - b). Euco QWIKjoint 200, as manufactured by the Euclid Chemical Company, 19218 Redwood Road, Cleveland, OH 44110
- L. Reinforcing Steel
  - 1. Bar Reinforcement: ASTM A 615, Grade 60, deformed steel bars.
  - 2. Fabric Reinforcement: ASTM A 185, welded wire fabric, fabricated into flat sheets unless otherwise indicated.
  - 3. Bar Supports; Either of the Following Types:
    - a. Galvanized steel or AISI Type 430 stainless steel, and without plastic tips.
    - b. Insoluble plastic, with minimum 1,500 psi tensile strength and capable of retaining fabricated shape at temperatures between 5 degrees F and 170 degrees F.
    - c. Solid concrete brick
  - 4. Fabric Reinforcement Supports:
    - a. Uni Zag by Universal Form Clamp, 840 South 25th Avenue, Bellwood, IL 60104, (800)728-1958.
    - b. Continuous Support, "CS" by Dayton Superior, 721 Richard Street, Miamisburg, OH 45342, (800) 745-3700.
    - c. Solid concrete brick

5. Tie Wire: Black annealed wire, 16-1/2 gage or heavier.
- N. Chemical Curing and Anti-Spalling Compound: ASTM C-309, Type 1D, Class B, with a minimum 18 percent total solids content. No thinning of material allowed.
1. SureCure Emulsion, Kaufman Products, Inc. 3811 Curtis Avenue, Baltimore, MD 21226, (800) 637-6372.
  2. Cure & Seal by Symons Corp., 200 East Touhy Ave., PO Box 5018, Des Plaines, IL 60017-5018, (847) 298-3200.
  3. Kure-N-Seal by Sonneborn/ BASF Building Systems, 889 Valley Park Dr., Shakopee, MN 55379, (800) 433-9517.
  4. Day-Chem Cure & Seal UV 26 percent (J-22 UV) by Dayton Superior Corp., 721 Richard St., Miamisburg, OH 45342, (800) 745-3700.
  5. Acrylseal HS by Master Builders/ BASF Building Systems, 23700 Chagrin Blvd., Cleveland, OH 44122, (800) 628-9990.
- O. Concrete Chemical Densifier and Sealer.
1. Seal Hard, L&M Chemical Chemicals Inc. 14851 Calhoun Road Omaha, NE USA 68152
  2. Diamond Hard, Euclid Chemical Company, 19218 Redwood Road, Cleveland, OH 44110
  3. Ashford Formula, Curecrete Distribution Inc., 1203 West Spring Creek Place, Springville, UT 84663
- P. Evaporation Reducer for freshly placed concrete. Laticrete E-Con by L&M Construction Chemicals.
- Q. Vapor Barrier under slabs on grade. 10 mil thick cross laminated polyethylene sheet vapor barrier complying with ASTM 1745, Standard Specification for Water Vapor Retarders used in Contact with Soil or Granular Fill under Concrete Slabs, Class A.

## 2.02 PROPORTIONING OF MIXES

- A. Normal weight concrete for concrete foundation piers and walls, and for all other concrete unless otherwise specified, shall have a minimum compressive strength of 4000 psi and a water cement ratio of 0.45. Slump: Maximum 4 inches; minimum 2 inches before the addition of any water-reducing admixtures or high-range water-reducing admixtures (superplasticizers) at the Site.
- B. Normal weight concrete for interior slabs, including composite deck fill, ramps, stairs and footings shall have a minimum compressive strength of 3500 psi and a water cement ratio of 0.50. Slump: Maximum 3 inches; minimum 2 inches before the addition of any water-reducing admixtures or high-range water-reducing admixtures (superplasticizers) at the Site.
- C. Normal weight concrete for exterior slabs, ramps and stairs to be exposed to deicing salts shall have a minimum compressive strength of 5000 psi and a water cement ratio of 0.40. Slump: Maximum 3 inches; minimum 2 inches before the addition of any water-reducing admixtures or high-range water-reducing admixtures (superplasticizers) at the Site.
- D. Optional Material: Fly ash may be substituted for (Portland) cement in normal weight and lightweight concrete up to a maximum of 40 percent by weight of the required minimum (Portland) cement. If fly ash is incorporated in a concrete design mix, make necessary adjustments to the design mix to compensate for the use of fly ash as a partial replacement for (Portland) cement.

- a. Adjustments shall include the required increase in air-entraining admixture to provide the specified air content.
  - b. Lower early strength of the concrete shall be considered in deciding when to remove formwork.
- E. Slump for Pumped Concrete: When a water-reducing admixture is not used, maximum slump shall be 4 inches. When a water-reducing admixture is used, maximum slump shall be 6 inches and when a high-range water-reducing admixture (superplasticizers) is used, maximum slump shall be 8 inches.
- F. Design Air Content: Design air content for concrete required to be air entrained shall be 6 percent by volume, with an allowable tolerance of plus or minus 1.5 percent for total air content, except as otherwise specified. Use air-entraining admixture, not air-entrained cement. Concrete to be air-entrained shall be exterior slabs, ramps, and stairs.
- G. ACI 301, Section 4.2.2.3: Change article to read as follows:
  - 4.2.2.3 - Size of Coarse Aggregates:
    - 4.2.2.3.a Normal Weight Concrete: Coarse aggregates shall conform to graduation requirements for various sizes as tabulated in Table No. 2 of ASTM C 33. The sizes of coarse aggregates for various classes of Work shall be as follows with all percentages being determined by weight.
    - 4.2.2.3.c For concrete Work having a minimum cross-sectional dimension of not more than 6 inches, the coarse aggregate shall be a well graded mixture of No. 67 (3/4" to No. 4) and No. 57 (1" to No. 4), provided that not more than 50 percent nor less than 30 percent shall be Size No. 67 and not more than 70 percent nor less than 50 percent shall be Size No. 57.
    - 4.2.2.3.d For concrete Work having a minimum cross-sectional dimension greater than 6 inches and not more than 12 inches, including concrete floors, the coarse aggregate shall consist of a mixture of No. 67, No. 57 and No. 467 (1 1/2" to No. 4), providing that not more than 25 percent nor less than 10 percent shall be Size No. 67 and not more than 40 percent shall be Size No. 467.
    - 4.2.2.3.e For concrete Work having a minimum cross-sectional dimension of more than 12 inches, the coarse aggregate shall consist of a mixture of No. 67, No. 57 and No. 357 (2" to No. 4), providing not more than 25 percent nor less than 10 percent shall be Size No. 67 and not more than 40 percent shall be Size No. 357.
- H. Admixtures: Do not use admixtures in concrete unless specified or approved in writing by the Architect.
- I. ACI 301, Section 4.1.2.1 - Mixture Proportions:
  - 1. Add the following to paragraph 4.1.2.1:
    - Proposed design mix(es) for pumped concrete and the pumping equipment shall have been tested under actual field conditions with the maximum horizontal run and vertical lift required for this project.

## 2.03 JOINTS

- A. ACI 301, Section 5.3.2.6 - Construction joints and other bonded joints:
  - 1. Delete the following subparagraphs:

- Use an acceptable surface retarder in accordance with manufacturer's recommendations.
  - Roughen the surface in an acceptable manner that exposes the aggregate uniformly and does not leave laitance, loosened particles of aggregate, or damaged concrete at the surface; or
- B. ACI 301, Section 10.2.5 – Isolation-joint filler materials:
1. Add the following paragraphs:
    - Except as otherwise shown on the Drawings, expansion joints shall be as follows:
    - In joints required to receive a sealant, the joint filler shall be 1/2 inch thick and recessed as required to form a caulking slot.
    - In joints not required to receive a sealant, the joint filler shall be 1/2 inch thick and extend through the full cross-section of the concrete.
    - Tool edges of concrete with 1/8 inch radius edging tool.

## **2.04 PRODUCTION OF CONCRETE**

- A. Provide ready-mixed concrete, either central-mixed or truck-mixed, unless otherwise approved in writing by the Architect.
- B. ACI 301, Section 5.3.2.1 Weather considerations
1. Delete paragraph under 5.3.2.1.c - Hot Weather, and add the following:
    - 5.3.2.1.c Provide adequate controls to insure that the temperature of the concrete when placed does not exceed 90 degrees F., and make every effort to place it at a lower temperature. The temperature of the concrete as placed shall not be so high as to cause difficulty from loss of slump, flash set or cold joints. Ingredients may be cooled before mixing by shading the aggregates, fog spraying the coarse aggregate, chilling the mixing water or other approved means. Mixing water may be chilled with flake ice or well-crushed ice of a size that will melt completely during mixing, providing the water equivalent of the ice is calculated into the total amount of mixing water.
- C. Protect concrete from physical damage or reduced strength due to weather extremes during mixing, placement and curing.
1. In cold weather, comply with ACI 306R.
    - a. When air temperature is below 40 degrees F (4 degrees C) heat the mixing water and, if necessary, the aggregates to obtain a concrete mixture temperature of not less than 50 degrees F (10 degrees C) and not more than 80 degrees F (27 degrees C) at point of placement. If the mixing water is heated, do not exceed a temperature of 140 degrees F at the time it is added to the cement and aggregates.
  2. In hot weather, comply with ACI 305R.
    - a. When air temperature is between 85 degrees F (30 degrees C ) and 90 degrees F (32 degrees C), reduce mixing and delivery time from 1 1/2 hours to 75 minutes, and when air temperature is above 90 degrees F (32 degrees C), reduce mixing and delivery time to 60 minutes.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION AND PREPARATION**

- A. Do not use items of aluminum for mixing, chuting, conveying, forming or finishing concrete, except magnesium alloy tools may be used for finishing.
- B. Check items of aluminum required to be embedded in the concrete and insure that they are coated, painted or otherwise isolated in an approved manner.
- C. Install water stops in accordance with manufacturer's printed instructions.
- D. Hardened concrete, reinforcement, forms, and earth which will be in contact with fresh concrete shall be free from frost at the time of concrete placement.
- E. Do not deposit concrete in water. Keep excavations free of water by pumping or by other approved methods.
- F. Prior to placement of concrete, remove all hardened concrete spillage and foreign materials from the space to be occupied by the concrete.

### **3.02 ADMIXTURE ADDITIONS AT THE SITE**

- A. Site additions shall be limited to high-range water-reducers, non-chloride accelerators, and corrosion inhibitors. Comply with manufacturers' printed instructions for discharge of admixtures shall be furnished.
- B. High-Range Water-Reducers:
  - 1. Concrete shall arrive at a slump of 2 to 4 inches (50 to 100 mm). Water additions at the Site shall be limited to comply with water-to-cementitious ratio requirements.
  - 2. Following addition of high-range water-reduced concrete, a minimum of 70 revolutions or 5 minutes of mixing shall be completed to assure a consistent mixture.
- C. All concrete with other admixture additions shall mix a minimum of 70 revolutions or 5 minutes to assure a consistent mixture.

### **3.03 PLACING**

- A. ACI 301, Section 5.3.2.3 Conveying equipment:
  - 1. Add the following paragraphs:
    - 5.3.2.3.d When pumping concrete, the lubricating mortar for the delivery line shall not be discharged into an area of concrete placement.
    - 5.3.2.3.e The inside diameter of the delivery lines for pumped concrete shall be the greater of either a minimum of 5 inches or 3 times the maximum size of coarse aggregate.
- B. ACI 301, Section 5.3.2.2 - Conveying:
  - 1. Add the following paragraph:
    - Operation of truck mixers and agitators and discharge limitations shall conform to the requirements of ASTM C 94.
- C. ACI 301, Section 5.3.2.4 - Depositing:
  - 1. Add the following paragraph:
    - Do not allow concrete to free fall more than 4 feet.

### **3.04 REPAIRING SURFACE DEFECTS**

- A. ACI 301, Section 5.3.7 – Repair of surface defects:
1. Add the following paragraph:
    - 5.3.7.1.a Finish patched areas to match the texture of the surrounding surface.
- B. ACI 301, Section 5.3.7.2 - Repair of tie holes:
1. Delete last paragraph in 5.3.7.2 and replace with the following:
    - The patch mixture shall consist of a mixture of dry-pack mortar, consisting of one part Portland cement to 2-1/2 parts fine aggregate passing a No. 16 mesh sieve, using only enough water as required for placing and handling. For surfaces exposed to view, blend white Portland cement and standard Portland cement so that, when dry, patching mortar will match surrounding color. Provide test areas at inconspicuous locations to verify mixture and color match before proceeding with patching. Compact mortar in place and strike-off slightly higher than surrounding surface.

### **3.05 FINISHING FORMED SURFACES**

- A. Finish Schedule: Except where indicated otherwise on the Drawings, provide the finishes below:
1. Rough Form Finish (Unspecified – as-cast finish) for concrete surfaces not exposed to view.
  2. Smooth Form Finish (Surface Finish-3.0, ACI 301-16 5.3.3.3) for interior and exterior concrete surfaces exposed to view. Remove forms as soon as removal operations will not damage concrete. Patch holes, remove projections and rub concrete to provide a Surface Tolerance Class A as specified in ACI 117.

### **3.06 SLABS**

- A. Slabs On Grade: Provide saw-cut type control joints unless otherwise shown, using the early entry dry saw-cut method. Saw-cut joints within 4 hours of finishing the slab. All slab joints are to be filled with a polyurea joint filler as specified above. Slab to cure a minimum of 28 days prior to filling joints.
- B. ACI 301, Section 5.3.4 – Finishing unformed surfaces:
1. Add the following paragraph to section 5.3.4.1 Placement:
    - Provide monolithic finishes on concrete floors and slabs without the addition of mortar or other filler material. Finish surfaces in true planes, true to line, with particular care taken during screeding to maintain an excess of concrete in front of the screed so as to prevent low spots. Screed and darby concrete to true planes while plastic and before free water rises to the surface. Do not perform finishing operations during the time free water (bleeding) is on the surface. Refer to flatness and levelness requirements below.
- C. Finish Schedule: Except where indicated otherwise on the Drawings, provide the finishes below:
1. Floated Finish for:
    - a. Treads and platforms of exterior steps and stairs.
    - b. Slabs and fill over which waterproofing, roofing, vapor barrier, insulation, terrazzo, or resin bound flooring is required.
  2. Troweled Finish for:
    - a. Interior slabs that are to be exposed to view.

- b. Slabs and fill over which resilient wood flooring, resilient tile or sheet flooring, carpet, or thin-film coating system is required.
    - c. Slabs and fill over which thin-set ceramic tile is required, except fine-broom finished surface.
    - d. Treads and platforms of interior steps and stairs.
  - 3. Broom or Belt Finish for:
    - a. Exterior slab. Texture as approved by the Architect's Representative.
  - 4. Scratched Finish for:
    - a. Surfaces to be covered with ceramic tile set in a bonded thick mortar bed, except screed to a Class B tolerance.
    - b. Surfaces to be covered with floor topping.
- D. ACI 302 Chapter 8.2.8.2 - Tools for jointing; Saw-cutting.
  - 1. Add the following paragraph:
    - Early-entry dry-cut saws are required in place of conventional wet-cut saws.

E. Floor flatness and levelness tolerances:

| <u>Class</u> | <u>Locations</u>                                                                                          | <u>Finish</u>                  | <u>Flatness F(f)</u> | <u>Levelness (F(l))</u> |
|--------------|-----------------------------------------------------------------------------------------------------------|--------------------------------|----------------------|-------------------------|
| 1            | Basements, Mech Rooms.<br>Areas to receive thick set tile.<br>Slab under gymnasium and<br>Stage flooring. | Normal Steel-troweled finish   | 20                   | 15                      |
| 2            | Carpeted and VCT tile areas                                                                               | Light steel-troweled<br>Finish | 25                   | 20                      |
| 3            | Exterior Walks                                                                                            | Broome Finish                  | 35                   | 25                      |
| 4            | Areas to receive thin-set<br>Terrazzo or file finishes                                                    | Normal steel-troweled finish   | 35                   | 25                      |

### 3.07 CURING AND PROTECTION

- A. Cure all exposed concrete using supervised wet cure or an approved curing compound.
- B. Hot Weather Concreting: Comply with ACI 305R whenever the atmospheric temperature or the form surface temperature is at or above 90 degrees F., or climatic conditions of wind and/or low humidity will cause premature drying of the concrete.
- C. Curing Temperature: Maintain the temperature of the concrete at 50 degrees F. or above during the curing period. Keep the concrete temperature as uniform as possible and protect from rapid atmospheric temperature changes. Avoid temperature changes in concrete which exceeds 5 degrees F. in any one hour and 50 degrees F. in any 24-hour period.
- D. Curing of Slabs to Receive Moisture-Sensitive Finish Flooring, including vinyl composition tile (VCT), rubber flooring, sheet vinyl, resilient tile, carpet, ceramic tile, wood flooring, and laminates:
  - Cure the slab by covering with a moisture retaining cover as defined above for a period of 7 days.

- Do not add water (ponding or wet bulap)
- Do not use curing compounds or cure-and-seal materials unless approved in writing by the Architect. Architect will require written approval from the adhesive and floor covering manufacturer that the curing compound or cure-and-seal material will not compromise the adhesion of the floor covering to the concrete slab, and will not require removal of the curing compound or cure-and-seal material prior to placement of the finish floor covering.

**END OF SECTION**



**SECTION 03 3001**  
**CONCRETE SIDEWALKS, CURBS AND EXTERIOR CONCRETE FLATWORK**

**PART 1 GENERAL**

**1.01 SUMMARY**

- A. This Section includes exterior Portland cement concrete paving for the following:
  - 1. Curbs.
  - 2. Walkways.
  - 3. Equipment pads.

**1.02 SUBMITTALS**

- A. General: Submit the following according to the Conditions of the Contract and Division 1 Specification Sections.
- B. Product data for proprietary materials and items, including reinforcement and forming accessories, admixtures, joint systems, curing compounds, dry-shake finish materials, and others if requested by Architect/Engineer.
- C. Design mixes for each class of concrete. Include revised mix proportions when characteristics of materials, project conditions, weather, test results, or other circumstances warrant adjustments.
- D. Laboratory test reports for evaluation of concrete materials and mix design tests.

**1.03 QUALITY ASSURANCE**

- A. Concrete Standards: Comply with provisions of the following standards, except where more stringent requirements are indicated.
  - 1. American Concrete Institute (ACI) 301, "Specification for Structural Concrete for Buildings."
  - 2. ACI 318-14, "Building Code Requirements for Reinforced Concrete".
  - 3. Concrete Reinforcing Steel Institute (CRSI) "Manual of Standard Practice".
- B. Concrete Manufacturer Qualifications: Manufacturer of ready-mixed concrete products complying with ASTM C94 requirements for production facilities and equipment.
- C. Preinstallation Conference: Conduct conference at Project Site to comply with Requirements of Division 1 Section "Project Meetings" and the following:
  - 1. Before installing Portland cement concrete paving, meet with representatives of Owner, Architect, consultants, independent testing agency, and other concerned entities to review requirements. Notify participants at least three (3) working days before conference.

**1.04 PROJECT CONDITIONS**

- A. Traffic Control: Maintain access for vehicular and pedestrian traffic as required for other construction activities.

**PART 2 PRODUCTS**

**2.01 FORMS**

- A. Form Materials: Plywood, metal, metal-framed plywood, or other acceptable panel-type materials to provide full-depth, continuous, straight, smooth exposed surfaces.
  - 1. Use flexible or curved forms for curves of a 100 feet or less radius.
- B. Form Release Agent: Provide commercial formulation form-release agent with a maximum of 350 g/L volatile organic compounds (VOCs) that will not bond with, stain, or adversely affect concrete surfaces and will not impair subsequent treatments of concrete surfaces.

**2.02 REINFORCING MATERIALS**

- A. Reinforcing Bars and Tie Bars: ASTM A 615, Grade 60, deformed.
- B. Deformed-Steel Welded Wire Fabric: ASTM A 497.
  - 1. Furnish in flat sheets, not rolls, unless otherwise acceptable to Architect.

- C. Supports for Reinforcement: Chairs, spacers, dowel bar supports and other devices for spacing, supporting, and fastening reinforcing bars, welded wire fabric, and dowels in place. Use wire bar-type supports complying with CRSI specifications.
  - 1. Use supports with sand plates or horizontal runners where base material will not support chair legs.
  - 2. Use of concrete brick, pieces of broken concrete, stone, soil, and other items deemed unacceptable to Architect, are prohibited for support of reinforcement.

### 2.03 CONCRETE MATERIALS

- A. Portland Cement: ASTM C 150, Type I.
  - 1. Use one brand of cement throughout Project unless otherwise acceptable to Architect/Engineer.
- B. Fly Ash: ASTM C 618, Type F.
- C. Normal-Weight Aggregates: ASTM C 33, Class 4, and as follows. Provide aggregates from a single source.
  - 1. Maximum Aggregate Size: 1-1/2 inch.
  - 2. Do not use fine or coarse aggregates that contain substances that cause spalling.
  - 3. Local aggregates not complying with ASTM C 33 that has been shown to produce concrete of adequate strength and durability by special tests or actual service may be used when acceptable to Architect/Engineer.
- D. Water: Portable, having maximum acceptable 0.5 mg/l total chlorine residual.
- E. Fiber Reinforcement: Provide mandatory inclusion of synthetic fibers engineered and designed for secondary reinforcement of concrete slabs, complying with ASTM C 116, Type III.

### 2.04 ADMIXTURES

- A. Provide concrete admixtures that contain not more than 0.1 percent chloride ions.
- B. Air-Entraining Admixtures: ASTM C 260, certified by manufacturer to be compatible with other required admixtures.
- C. Water-Reducing Admixture: ASTM C 494, Type A.
- D. High-Range Water-Reducing Admixture: ASTM C 494, Type F or Type G.
- E. Water-Reducing and Accelerating Admixture: ASTM C 494, Type E.
- F. Water-Reducing and Retarding Admixture: ASTM C 494, Type D.
- G. Available Products: Subject to compliance with requirements, products that may be incorporated in the Work include, but are not limited to, the following:
  - 1. Air-Entraining Admixture:
    - a. Air-Mix; Euclid Chemical Co.
    - b. Darex AEA or Daravair; GCP Applied Technologies.
    - c. MasterAir AE 200; BASF.
    - d. Sika AIR; Sika Corp.
  - 2. Water-Reducing Admixture:
    - a. Eucon A+; Euclid Chemical Co.
    - b. ADVA 198; GCP Applied Technologies.
    - c. MasterPozzoloth 200; BASF.
    - d. Plastocrete 161; Sika Corp.
  - 3. High-Range Water-Reducing Admixture:
    - a. Eucon 37; Euclid Chemical Co.
    - b. ADVA 190 or Daracem 100; GCP Applied Technologies.
    - c. MasterRheobuild 1000; BASF.
    - d. Sikament 686; Sika Corp.
  - 4. Water-Reducing and Accelerating Admixture:
    - a. Accelguard 80; Euclid Chemical Co.

- b. Duraset 400; GCP Applied Technologies.
- c. MasterSet FP20; BASF.
- d. Sika Set NC; Sika Corp.
- 5. Water-Reducing and Retarding Admixture:
  - a. Eucon Retarder 75; Euclid Chemical Co.
  - b. Daratard-17; GCP Applied Technologies.
  - c. MasterSet R122; BASF.
  - d. Plastiment; Sika Corporation.

## 2.05 CURING MATERIAL

- A. Absorptive Cover: Burlap cloth made from jute or kenaf, weighing approximately 9 ounces per square yard, complying with AASHTO M 182, Class 2.
- B. Moisture-Retaining Cover: One (1) of the following, complying with ASTM C 171.
  - 1. Waterproof paper.
  - 2. Polyethylene film.
  - 3. White burlap-polyethylene sheet.
- C. Clear Solvent-Borne Liquid Membrane-Forming Curing Compound: ASTM C 309, Type I, Class A or B, wax free.
  - 1. Provide material that has a maximum volatile organic compound (VOC) rating of 350 g/L.
- D. Evaporation Control: Monomolecular film-forming compound applied to exposed concrete slab surfaces for temporary protection from rapid moisture loss.
- E. Products: Subject to compliance with requirements, provide one of the following:
  - 1. Clear Solvent-Borne Liquid Membrane-Forming Curing Compound:
    - a. Diamond Clear VOX; Euclid Chemical Co.
    - b. Masterkure; BASF.
    - c. 3100 Series; W.R. Meadows, Inc.
    - d. Kure-N-Seal; Sonneborn-Chemrex.
  - 2. Evaporation Control:
    - a. Eucobar; Euclid Chemical Co.
    - b. Confilm; BASF.

## 2.06 RELATED MATERIAL

- A. Bonding Agent: Acrylic or styrene butadiene.
- B. Epoxy Adhesive: ASTM C 881, 2-component material suitable for dry or damp surfaces. Provide material type, grade, and class to suit requirements.
- C. Available Products: Subject to compliance with requirements, products that may be incorporated in the Work include, but are not limited to, the following:
  - 1. Bonding Agent:
    - a. Day-Chem Ad Bond (J-40); Dayton Superior Corp.
    - b. SBR Latex; Euclid Chemical Co.
    - c. Daraweld C; GCP Applied Technologies.
    - d. MasterProtect; BASF.
    - e. Sonocrete; Sonneborn-Chemrex.
  - 2. Epoxy Adhesive:
    - a. Resi-Bond (J-58); Dayton Superior.
    - b. Euco Epoxy System #452; Euclid Chemical Co.
    - c. MasterEmaco; BASF.
    - d. Sikadur 32 Hi-Mod; Sika Corp.
- D. Anti-spalling Compound: Combination of boiled linseed oil, curer seal and mineral spirits; complying with AASHTO M-233 Standard, or approved equivalent.

- E. Preformed Joint Filler: ASTM D-1056, SCAE1, 2CI, RE41E1 closed cell expanded neoprene manufactured by Williams Products, Inc., or approved equivalent.

## **2.07 CONCRETE MIX**

- A. Prepare design mixes for each type and strength of normal-weight concrete by either laboratory trial batch or field experience methods as specified in ACI 301. For the trial batch method, use a qualified independent testing agency for preparing and reporting proposed mix designs.
  - 1. Do not use the Owner's field quality-control testing agency as the independent testing agency.
  - 2. Limit use of fly ash to 15 percent of cement content by absolute weight.
- B. Proportion mixes according to ACI 211.1 and ACI 31 to provide normal-weight concrete with the following properties:
  - 1. Compressive Strength (28-Day): 5000 psi, minimum.
  - 2. Maximum Water-Cement Ratio at Point of Placement: 0.42.
  - 3. Slump Limit at Point of Placement: 3 inches.
    - a. Slump limit for concrete containing high-range water-reducing admixture (superplasticizers): Not more than 8 inches after adding admixture to site verified 2 inch to 3 inch slump concrete.
  - 4. Minimum 650 pounds Portland cement per cubic yard of concrete.
- C. Add air-entraining admixture at manufacturer's prescribed rate to result in concrete at point of placement having an air content as follows with a tolerance of plus or minus 1 percent:
  - 1. Air Content:
    - 5.5 percent for 1-1/2 inch nominal maximum aggregate size.
    - 6.0 percent for 1 inch nominal maximum aggregate size.
    - 6.0 percent for 3/4 inch nominal maximum aggregate size.
    - 7.0 percent for 1/2 inch nominal maximum aggregate size.
- D. Fiber Reinforcement: Polypropylene fibers engineered and designed for secondary reinforcement of concrete slabs, complying with ASTM C 1116, Type III. Add to mix at rate of 1.5 pounds per cubic yard, unless manufacturer recommends otherwise.
- E. Adjustment to Concrete Mixes: Mix design adjustments may be requested by Contractor when characteristics of materials, project conditions, weather, test results, or other circumstances warrant.

## **2.08 CONCRETE MIXING**

- A. Ready-Mixed Concrete: Comply with requirements and with ASTM C 94.
  - 1. When air temperature is between 85 degrees F and 90 degrees F, reduce mixing and delivery time from 1-1/2 hours to seventy-five (75) minutes; when air temperature is above 90 degrees F, reduce mixing and delivery time to sixty (60) minutes.

## **PART 3 EXECUTION**

### **3.01 SURFACE PREPARATION**

- A. Proof-roll prepared subbase surface to check for unstable areas and verify need for additional compaction. Do not begin paving work until such conditions have been corrected and are ready to receive paving.
- B. Remove loose material from compacted subbase surface immediately before placing concrete.

### **3.02 EDGE FORMS AND SCREED CONSTRUCTION**

- A. Set, brace, and secure edge forms, bulkheads, and intermediate screed guides for paving to required lines, grades, and elevations. Install forms to allow continuous progress of Work and so that forms can remain in place at least twenty-four (24) hours after concrete placement.
- B. Check completed formwork and screeds for grade and alignment to following tolerances:
  - 1. Top of Forms: Not more than 1/8 inch in 10 feet.
  - 2. Vertical Face on Longitudinal Axis: Not more than 1/4 inch in 10 feet.

- C. Clean forms after each use and coat with form release agent as required to ensure separation from concrete without damage.

### **3.03 PLACING REINFORCEMENT**

- A. General: Comply with Concrete Reinforcing Steel Institute's recommended practice for "placing reinforcing bars" for placing and supporting reinforcement.
- B. Clean reinforcement of loose rust and mill scale, earth, ice, or other bond-reducing materials.
- C. Arrange, space, and securely tie bars and bar supports to hold reinforcement in position during concrete placement. Maintain minimum cover to reinforcement in accordance with ACI 318.
- D. Install welded wire fabric in lengths as long as practicable. Lap adjoining pieces at least the greater of one (1) full mesh and/or 12 inch minimum lace splices with wire. Offset laps of adjoining widths to prevent continuous laps in either direction.
- E. Install fabricated bar mats in lengths as long as practicable. Handle units to keep them flat and free of distortions. Straighten bends, kinks, and other irregularities or replace units as required before placement. Set mats for a minimum 12 inch overlap to adjacent mats.

### **3.04 JOINTS**

- A. General: Construct contraction (control), construction, and isolation (expansion) joints true to line with faces perpendicular to surface plane of concrete. Construction transverse joints at right angles to the centerline, unless indicated otherwise.
  - 1. When joining existing paving, place transverse joints to align with previously placed joints, unless indicated otherwise.
- B. Contraction Joints: Provide weakened-plane contraction joints, sectioning concrete into areas as shown on Drawings. Construct contraction joints for a depth equal to at least one-quarter of the concrete slab thickness, as follows:
  - 1. Tooled Joints: Form contraction joints in fresh concrete by grooving and finishing each edge of joint with a radiused jointer tool.
  - 2. Inserts: Form contraction joints by inserting premolded sponge rubber strips into fresh concrete until top surface of strip is at least 1/2 inch below paving surface. Radius each joint edge with a jointer tool. Clean groove of loose debris after concrete has hardened and apply approved caulking material to upper exposed portion of joint.
- C. Construction Joints: Set construction joints at side and end terminations of paving and at locations where paving operations are stopped for more than 1/2 hour, unless paving terminates at isolation joints.
  - 1. Continue reinforcement across construction joints unless indicated otherwise. Do not continue reinforcement through sides of strip paving unless indicated.
  - 2. Provide tie bars at sides of paving strips where indicated.
  - 3. Use bonding agent on existing concrete surfaces that will be joined with fresh concrete.
- D. Isolation Joints: Form isolation joints of preformed sponge rubber joint filler strips abutting concrete curbs, curb corners, catch basins, manholes, inlets, structures, walks, other fixed objects, and where indicated.
  - 1. Located expansion joints at intervals of 60 feet, unless indicated otherwise.
  - 2. Extend joint fillers full width and depth of joint, not less 1/2 inch or more than 1 inch below finished surface where joint sealant is indicated. Place top of joint filler flush with finished concrete surface when no joint sealant is required.
  - 3. Furnish Joint fillers in 1-piece lengths for full width being placed wherever possible. Where more than one length is required, lace or clip joint filler sections together.
  - 4. Protect top edge of joint filler during concrete placement with a metal, plastic, or other temporary preformed cap. Remove protective cap after concrete has been placed on both sides of joint.
- E. Install dowel bars and support assemblies at joints where indicated. Lubricate or asphalt-coat one-half of dowel length to prevent concrete bonding to one (1) side of joint.

### 3.05 CONCRETE PLACEMENT

- A. Inspection: Before placing concrete, inspect and compete formwork installation, reinforcing steel, and items to be embedded or cast in. Notify other trades to permit installation of their Work.
- B. Remove snow, ice, or frost from sub-base surface and reinforcing before placing concrete. Do not place concrete on surfaces that are frozen or have standing water.
- C. Moisten sub-base to provide a uniform dampened condition at the time concrete is placed. Do not place concrete around manholes or other structures until they are at the required finish elevation and alignment.
- D. Comply with requirements and with ACI 304R for measuring, mixing, transporting, and placing concrete.
- E. Deposit and spread concrete in a continuous operation between transverse joints. Do not push or drag concrete into place or use vibrators to move concrete into place.
  - 1. When concrete placing is interrupted for more than 1/2 hour, place a construction joint.
- F. Use a bonding agent at locations where fresh concrete is placed against hardened or partially hardened concrete surface.
- G. Consolidate concrete by mechanical vibrating equipment supplemented by hand-spading, rodding, or tamping. Use equipment and procedures to consolidate concrete complying with ACI 309 R.
  - 1. Consolidate concrete along face of forms and adjacent to transverse joints with an internal vibrator. Keep vibrator away from join assemblies, reinforcement, or side forms. Use only square-faced shovels for hand-spreading and consolidation. Consolidate with care to prevent dislocation reinforcing, dowels, and joint devices.
- H. Screed paved surfaces with a straightedge and strike off. Use bull floats or darbies to form a smooth surface plane before excess moisture or bleed water appears on the surface. Do not further disturb concrete surfaces prior to beginning finishing operations.
- I. Curbs and Gutters: When automatic machine placement is used for curb and gutter placement, submit revised mix design and laboratory test that meet or exceed requirements. Produce curbs and gutters to required cross section, lines, grades, finish, and jointing as specified for formed concrete. If results are not acceptable, remove and replace with formed concrete.
- J. Cold-Weather Placement: Comply with provisions of ACI 3060R and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.
  - 1. When air temperature has fallen to or is expected to fall below 40 degrees F, uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 degrees F and not more than 80 degrees F at point of placement.
  - 2. Do not use frozen materials or materials containing ice or snow.
  - 3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise accepted in mix designs.
- K. Hot-Weather Placement: Place concrete complying with ACI 305 R and as specified when hot weather conditions exist.
  - 1. Cool ingredients before mixing to maintain concrete temperature at time of placement to below 90 degrees F. Mixing water may be chilled or chopped ice may be used to control temperature, provided water equivalent of ice is calculated to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
  - 2. Cover reinforcing steel with water-soaked burlap if it becomes too hot, so that steel temperature will not exceed the ambient air temperature immediately before embedding in concrete.
  - 3. Fog spray forms, reinforcing steel, and subgrade just before placing concrete. Keep subgrade moisture uniform without standing water, soft spots, or dry areas.

### **3.06 CONCRETE FINISHING**

- A. Float Finish: Begin floating when bleed water sheen has disappeared and the concrete surface has stiffened sufficiently to permit operations. Float surface with power-driven floats, or by hand-floating if area is small or inaccessible to power units. Finish surfaces to true planes within a tolerance of 1/4 inch in 10 feet as determined by a 10-foot-long straightedge placed anywhere on the surface in any direction. Cut down high spots and fill low spots. Refloat surface immediately to a uniform granular texture.
  - 1. Medium-to-Coarse-Textured Broom Finish: Provide a coarse finish by striating surface 1/16 inch deep with a stiff-bristled broom, perpendicular to line of traffic.
- B. Final Tooling: Tool edges of paving, gutters, curbs, and joints formed in fresh concrete with a jointing tool to following radius. Repeat tooling of edges and joints after applying surface finishes. Eliminate tool marks on concrete surfaces.
  - 1. Radius: 3/8 inch.

### **3.07 CONCRETE PROTECTION AND CURING**

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with the recommendation of ACI 306 R for cold weather protection and ACI 305 R for hot weather protection during curing.
- B. Evaporation Control: In hot, dry, and windy weather, protect concrete from rapid moisture loss before and during finishing operations with an evaporation-control material. Apply according to manufacturer's instructions after screeding and bull floating, but before floating.
- C. Begin curing after finishing concrete but not before free water has disappeared from concrete surface.
- D. Curing Methods: Cure concrete by moisture curing, moisture-retaining-cover curing, curing compound, or a combination of these as follows:
  - 1. Moisture Curing: Keep surfaces continuously moist for not less than 14 days with the following materials:
    - a. Water.
    - b. Continuous water-fog spray.
    - c. Absorptive surfaces and edges with a minimum 12 inch lap over adjacent absorptive covers.
  - 2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inch minimum, and sealed by waterproof tape or adhesive. Immediately repair any holes or tears during curing period using cover material and waterproof tape.
  - 3. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's directions. Recoat areas subjected to heavy rainfall within three (3) hours after initial application. Maintain continuity of coating and repair damage during curing period.
- E. Anti-spalling Treatment: Apply treatment to concrete surfaces no sooner than twenty-eight (28) days after placement, to clean, dry concrete free of oil, dirt, and other foreign material. Apply curing and sealing compound at a maximum coverage rate of 300 square feet per gallon. Apply anti-spalling compound in two (2) sprayed applications, taking care to insure that spray application is in a fine mist (the formation of large droplets in spray application is prohibited). First application shall be applied at a rate of at least 40 square yards per gallon; second application shall be applied at a rate of at least 60 square yards per gallon. Allow complete drying between applications of anti-spalling treatment compound.

### **3.08 REPAIRS AND PROTECTION**

- A. Remove and replace concrete paving that is broken, damaged, or defective, or does not meet the Requirements of the Section.
- B. Drill test cores where directed by Architect/Engineer when necessary to determine magnitude of cracks or defective areas. Fill drilled core holes in satisfactory pavement areas with Portland

cement concrete bonded to paving with epoxy adhesive.

- C. Protect concrete from damage. Exclude traffic from paving for at least fourteen (14) days after placement. When construction traffic is permitted, maintain paving as clean as possible by removing surface stains and spillage of materials as they occur.
- D. Maintain concrete paving free of stains, discoloration, dirt, and other foreign material. Sweep concrete paving not more than two (2) days prior to date scheduled for Substantial Completion inspections.

**END OF SECTION**



**SECTION 03 3533  
STAMPED CONCRETE FINISHING**

**PART 2 PRODUCTS**

**1.01 STAMPED CONCRETE APPLICATIONS**

**1.02 STAMPING MATERIALS**

- A. Stamping Mats: Mat type imprinting tools for texturing freshly placed concrete, in pattern and texture to achieve required surface profile and design.
  - 1. Mat Composition: Polyurethane.
- B. Release Agent: Bond breaker compound capable of releasing stamping forms from concrete without creating surface defects or leaving any residue; type as recommended by stamping mat manufacturer; compatible with concrete, form materials and specified coloring agents.

**END OF SECTION**

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**SECTION 03 4100  
PRECAST STRUCTURAL CONCRETE**

**PART 1 GENERAL**

**1.01 REFERENCE STANDARDS**

- A. ACI 318 - Building Code Requirements for Structural Concrete 2019, with Errata (2021).
- B. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement 2020.
- C. ASTM A1064/A1064M - Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete 2018a.
- D. PCI MNL-116 - Manual for Quality Control for Plants and Production of Precast and Prestressed Concrete Products 1999.

**PART 2 PRODUCTS**

**2.01 PRECAST UNITS**

- A. Precast Structural Concrete Units: Comply with PCI MNL-116, PCI MNL-120, PCI MNL-123, PCI MNL-135, ACI 318 and applicable codes.
  - 1. Design components to withstand dead loads and design loads in the configuration indicated on drawings and as follows:
  - 2. Calculate structural properties of framing members in accordance with ACI 318.
  - 3. Design system to accommodate construction tolerances, deflection of other building structural members and clearances of intended openings.

**2.02 MATERIALS**

**2.03 REINFORCEMENT**

- A. Reinforcing Steel: ASTM A615/A615M, Grade 40 (40,000 psi).
- B. Steel Welded Wire Reinforcement: ASTM A1064/A1064M plain type or deformed type; in flat sheets; unfinished.

**2.04 FABRICATION**

- A. Comply with fabrication procedures specified in PCI MNL-116.

**2.05 FINISHES**

- A. Ensure exposed-to-view finish surfaces of precast concrete members are uniform in color and appearance.

**END OF SECTION**

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**SECTION 04 0511  
MORTAR AND MASONRY GROUT**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Mortar for masonry.
- B. Grout for masonry.

**1.02 RELATED REQUIREMENTS**

- A. Section 04 2000 - Unit Masonry: Installation of mortar and grout.
- B. Section 04 7200- Cast Stone Masonry: Installation of Mortar and Grout.
- C. Section 08 1113 - Hollow Metal Doors and Frames: Products and execution for grouting steel door frames installed in masonry.

**1.03 REFERENCE STANDARDS**

- A. TMS 402/602 - Building Code Requirements and Specification for Masonry Structures 2016.
- B. ASTM C5 - Standard Specification for Quicklime for Structural Purposes 2018.
- C. ASTM C91/C91M - Standard Specification for Masonry Cement 2018.
- D. ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete 2021b.
- E. ASTM C144 - Standard Specification for Aggregate for Masonry Mortar 2018.
- F. ASTM C150/C150M - Standard Specification for Portland Cement 2021.
- G. ASTM C207 - Standard Specification for Hydrated Lime for Masonry Purposes 2018.
- H. ASTM C270 - Standard Specification for Mortar for Unit Masonry 2019a.
- I. ASTM C387/C387M - Standard Specification for Packaged, Dry, Combined Materials for Concrete and High Strength Mortar 2017.
- J. ASTM C404 - Standard Specification for Aggregates for Masonry Grout 2018.
- K. ASTM C476 - Standard Specification for Grout for Masonry 2020.
- L. ASTM C780 - Standard Test Method for Preconstruction and Construction Evaluation of Mortars for Plain and Reinforced Unit Masonry 2020.
- M. ASTM C979/C979M - Standard Specification for Pigments for Integrally Colored Concrete 2016.
- N. ASTM C1019 - Standard Test Method for Sampling and Testing Grout for Masonry 2020.
- O. ASTM C1314 - Standard Test Method for Compressive Strength of Masonry Prisms 2021.
- P. ASTM E514/E514M - Standard Test Method for Water Penetration and Leakage Through Masonry 2020.
- Q. ASTM E518/E518M - Standard Test Methods for Flexural Bond Strength of Masonry 2021.

**1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Include design mix and indicate whether the Proportion or Property specification of ASTM C270 is to be used. Also include required environmental conditions and admixture limitations.
- C. Samples: Submit two samples of mortar, illustrating mortar color and color range.
- D. Reports: Submit reports on mortar indicating compliance of mortar to property requirements of ASTM C270 and test and evaluation reports per ASTM C780.
- E. Reports: Submit reports on grout indicating compliance of component grout materials to requirements of ASTM C476 and test and evaluation reports to requirements of ASTM C1019.
- F. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.

- G. Manufacturer's Installation Instructions: Submit packaged dry mortar manufacturer's installation instructions.

#### **1.05 QUALITY ASSURANCE**

- A. Comply with provisions of TMS 402/602, except where exceeded by requirements of Contract Documents.
  - 1. Maintain one copy of each document on project site.

#### **1.06 PRECONSTRUCTION TESTING**

- A. Testing will be conducted by an independent test agency, in accordance with provisions of Section 01 4000 - Quality Requirements.
- B. Mortar Mixes: Test mortars prebatched by weight in accordance with ASTM C780 recommendations for preconstruction testing.
- C. Grout Mixes: Test grout batches in accordance with ASTM C1019 procedures.

#### **1.07 DELIVERY, STORAGE, AND HANDLING**

- A. Maintain packaged materials clean, dry, and protected against dampness, freezing, and foreign matter.

#### **1.08 FIELD CONDITIONS**

- A. Cold and Hot Weather Requirements: Comply with requirements of TMS 402/602 or applicable building code, whichever is more stringent.

### **PART 2 PRODUCTS**

#### **2.01 MORTAR AND GROUT APPLICATIONS**

- A. At Contractor's option, mortar and grout may be field-mixed from packaged dry materials, made from factory premixed dry materials with addition of water only, or ready-mixed.
- B. Mortar Mix Designs: ASTM C270, Property Specification.
  - 1. Historic Exterior Masonry Pointing Mortar: Type O; color to match existing.
  - 2. Masonry below grade and in contact with earth: Type S.
  - 3. Exterior Masonry Veneer: Type N.
  - 4. Exterior Cavity Walls: Type S mortar with Type N pointing mortar.
  - 5. Engineered Masonry: Type M.
  - 6. Exterior, Loadbearing Masonry: Type N.
  - 7. Exterior, Non-loadbearing Masonry: Type N.
  - 8. Exterior Repointing Mortar: Type N with maximum 2 percent ammonium stearate or calcium stearate per cement weight.
  - 9. Interior, Loadbearing Masonry: Type N.
  - 10. Interior, Non-loadbearing Masonry: Type O.
- C. Grout Mix Designs:
  - 1. Bond Beams and Lintels: 3,000 psi strength at 28 days; 8-10 inches slump; provide premixed type in accordance with ASTM C 94/C 94M.
    - a. Fine grout for spaces with smallest horizontal dimension of 2 inches or less.
    - b. Coarse grout for spaces with smallest horizontal dimension greater than 2 inches.
  - 2. Engineered Masonry: 3,000 psi strength at 28 days; 8-10 inches slump; provide premixed type in accordance with ASTM C 94/C 94M.
    - a. Fine grout for spaces with smallest horizontal dimension of 2 inches or less.
    - b. Coarse grout for spaces with smallest horizontal dimension greater than 2 inches.

#### **2.02 MATERIALS**

- A. Packaged Dry Material for Mortar for Unit Masonry: Premixed masonry cement and mason's sand; complying with ASTM C387/C387M and capable of producing mortar of the specified strength in accordance with ASTM C270 with the addition of water only.
  - 1. Color: Standard gray.
  - 2. Water repellent mortar for use with water repellent masonry units.

3. Manufacturers:
  - a. The QUIKRETE Companies; QUIKRETE® Mason Mix: [www.quikrete.com/#sle](http://www.quikrete.com/#sle).
  - b. Substitutions: See Section 01 6000 - Product Requirements.
- B. Packaged Dry Material for Mortar for Repointing: Premixed Portland cement, graded sand, and chemical admixtures complying with ASTM C91/C91M with the addition of water only.
  1. Color: Natural gray.
- C. Packaged Dry Material for Grout for Masonry: Premixed cementitious materials and dried aggregates; capable of producing grout of the specified strength in accordance with ASTM C476 with the addition of water only.
  1. Type: Fine.
- D. Portland Cement: ASTM C150/C150M.
  1. Type: Type I - Normal; ASTM C150/C150M.
  2. Color: Standard gray.
- E. Masonry Cement: ASTM C91/C91M.
  1. Type: Type N; ASTM C91/C91M.
- F. Hydrated Lime: ASTM C207, Type S.
- G. Quicklime: ASTM C5, non-hydraulic type.
- H. Mortar Aggregate: ASTM C144.
- I. Grout Aggregate: ASTM C404.
- J. Pigments for Colored Mortar: Pure, concentrated mineral pigments specifically intended for mixing into mortar and complying with ASTM C979/C979M.
- K. Water: Clean and potable.
- L. Accelerating Admixture: Nonchloride type for use in cold weather.
- M. Bonding Agent: Latex type.

### **2.03 MORTAR MIXING**

- A. Thoroughly mix mortar ingredients using mechanical batch mixer, in accordance with ASTM C270 and in quantities needed for immediate use.
- B. Maintain sand uniformly damp immediately before the mixing process.
- C. Colored Mortar: Proportion selected pigments and other ingredients to match Architect's sample, without exceeding manufacturer's recommended pigment-to-cement ratio; mix in accordance with manufacturer's instructions, uniform in coloration.
- D. Add admixtures in accordance with manufacturer's instructions; mix uniformly.
- E. Do not use anti-freeze compounds to lower the freezing point of mortar.
- F. If water is lost by evaporation, re-temper only within two hours of mixing.

### **2.04 GROUT MIXING**

- A. Mix grout in accordance with ASTM C94/C94M.
- B. Thoroughly mix grout ingredients in quantities needed for immediate use in accordance with ASTM C476 for fine and coarse grout.
- C. Add admixtures in accordance with manufacturer's instructions; mix uniformly.
- D. Do not use anti-freeze compounds to lower the freezing point of grout.

## **PART 3 EXECUTION**

### **3.01 PREPARATION**

- A. Apply bonding agent to existing concrete surfaces.
- B. Plug clean-out holes for grouted masonry with brick masonry units. Brace masonry to resist wet grout pressure.

### **3.02 INSTALLATION**

- A. Install mortar and grout to requirements of section(s) in which masonry is specified.
- B. Work grout into masonry cores and cavities to eliminate voids.
- C. Do not install grout in lifts greater than 16 inches without consolidating grout by rodding.
- D. Do not displace reinforcement while placing grout.
- E. Remove excess mortar from grout spaces.

### **3.03 GROUTING**

- A. Use either high-lift or low-lift grouting techniques, at Contractor's option, subject to other limitations of Contract Documents.
- B. Low-Lift Grouting:
  - 1. Limit height of pours to 12 inches.
  - 2. Limit height of masonry to 16 inches above each pour.
  - 3. Pour grout only after vertical reinforcing is in place; place horizontal reinforcing as grout is poured. Prevent displacement of bars as grout is poured.
  - 4. Place grout for each pour continuously and consolidate immediately; do not interrupt pours for more than 1-1/2 hours.
- C. High-Lift Grouting:
  - 1. Verify that horizontal and vertical reinforcement is in proper position and adequately secured before beginning pours.
  - 2. Brick: Limit pours to maximum 12 feet in height and 25 feet horizontally.
  - 3. Hollow Masonry: Limit lifts to maximum 4 feet and pours to maximum height of 24 feet.
  - 4. Place grout for spanning elements in single, continuous pour.

### **3.04 FIELD QUALITY CONTROL**

- A. An independent testing agency will perform field tests, in accordance with provisions of Section 01 4533- Special Inspections & Tests.
- B. Test and evaluate mortar in accordance with ASTM C780 procedures.

**END OF SECTION**



## **SECTION 04 2000 UNIT MASONRY**

### **PART 1 GENERAL**

#### **1.01 SECTION INCLUDES**

- A. Concrete block.
- B. Facing brick.
- C. Mortar and Grout.
- D. Reinforcement and Anchorage.
- E. Flashings.
- F. Lintels.
- G. Accessories.

#### **1.02 RELATED REQUIREMENTS**

- A. Section 03 1000 - Concrete Forming and Accessories: Dovetail slots for masonry anchors.
- B. Section 03 2000 - Concrete Reinforcing: Reinforcing steel for grouted masonry.
- C. Section 04 0511 - Mortar and Masonry Grout.
- D. Section 05 5000 - Metal Fabrications: Loose steel lintels.
- E. Section 06 1000 - Rough Carpentry: Nailing strips built into masonry.
- F. Section 07 1113 - Bituminous Dampproofing: Dampproofing parged masonry surfaces.
- G. Section 07 2100 - Thermal Insulation: Insulation for cavity spaces.
- H. Section 07 2500 - Weather Barriers: Water-resistive barriers or air barriers applied to the exterior face of the backing sheathing or masonry.
- I. Section 07 6200 - Sheet Metal Flashing and Trim: Through-wall masonry flashings.
- J. Section 07 9200 - Joint Sealants: Sealing control and expansion joints.
- K. Section 07 9005: Backing rod and sealant at control and expansion joints.

#### **1.03 REFERENCE STANDARDS**

- A. ASTM A1 - Standard Specification for Carbon Steel Tee Rails 2000 (Reapproved 2018).
- B. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware 2016a.
- C. ASTM A580/A580M - Standard Specification for Stainless Steel Wire 2018.
- D. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement 2020.
- E. ASTM A641/A641M - Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire 2019.
- F. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process 2020.
- G. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar 2015.
- H. ASTM A951/A951M - Standard Specification for Steel Wire for Masonry Joint Reinforcement 2016, with Editorial Revision (2018).
- I. ASTM A1064/A1064M - Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete 2018a.
- J. ASTM B370 - Standard Specification for Copper Sheet and Strip for Building Construction 2012 (Reapproved 2019).
- K. ASTM C34 - Standard Specification for Structural Clay Load-Bearing Wall Tile 2017.

- L. ASTM C62 - Standard Specification for Building Brick (Solid Masonry Units Made From Clay or Shale) 2017.
- M. ASTM C90 - Standard Specification for Loadbearing Concrete Masonry Units 2021.
- N. ASTM C129 - Standard Specification for Nonloadbearing Concrete Masonry Units 2017.
- O. ASTM C140/C140M - Standard Test Methods for Sampling and Testing Concrete Masonry Units and Related Units 2021.
- P. ASTM C144 - Standard Specification for Aggregate for Masonry Mortar 2018.
- Q. ASTM C150/C150M - Standard Specification for Portland Cement 2021.
- R. ASTM C207 - Standard Specification for Hydrated Lime for Masonry Purposes 2018.
- S. ASTM C216 - Standard Specification for Facing Brick (Solid Masonry Units Made From Clay or Shale) 2021.
- T. ASTM C270 - Standard Specification for Mortar for Unit Masonry 2019a.
- U. ASTM C315 - Standard Specification for Clay Flue Liners and Chimney Pots 2007 (Reapproved 2021).
- V. ASTM C404 - Standard Specification for Aggregates for Masonry Grout 2018.
- W. ASTM C476 - Standard Specification for Grout for Masonry 2020.
- X. ASTM C652 - Standard Specification for Hollow Brick (Hollow Masonry Units Made From Clay or Shale) 2021.
- Y. ASTM C780 - Standard Test Method for Preconstruction and Construction Evaluation of Mortars for Plain and Reinforced Unit Masonry 2020.
- Z. ASTM C1072 - Standard Test Methods for Measurement of Masonry Flexural Bond Strength 2019.
- AA. ASTM C1148 - Standard Test Method for Measuring the Drying Shrinkage of Masonry Mortar 1992a (Reapproved 2014).
- BB. ASTM C1314 - Standard Test Method for Compressive Strength of Masonry Prisms 2021.
- CC. ASTM C1714/C1714M - Standard Specification for Preblended Dry Mortar Mix for Unit Masonry 2019a.
- DD. ASTM D4637/D4637M - Standard Specification for EPDM Sheet Used in Single-Ply Roof Membrane 2015 (Reapproved 2021).
- EE. ASTM E11 - Standard Specification for Woven Wire Test Sieve Cloth and Test Sieves 2020.
- FF. ASTM E514/E514M - Standard Test Method for Water Penetration and Leakage Through Masonry 2020.
- GG. BIA Technical Notes No. 7 - Water Penetration Resistance – Design and Detailing 2017.
- HH. BIA Technical Notes No. 28B - Brick Veneer/Steel Stud Walls 2005.
- II. BIA Technical Notes No. 46 - Maintenance of Brick Masonry 2017.
- JJ. TMS 402/602 - Building Code Requirements and Specification for Masonry Structures 2016.
- KK. IMIABC (CW) - Recommended Practices & Guide Specifications for Cold Weather Masonry Construction; International Masonry Industry All-Weather Council; 1993.
- LL. IMIABC (HW) - Recommended Practices & Guide Specifications for Hot Weather Masonry Construction; International Masonry Industry All-Weather Council; current edition.
- MM. UL (FRD) - Fire Resistance Directory Current Edition.

#### **1.04 ADMINISTRATIVE REQUIREMENTS**

- A. Preinstallation Meeting: Convene a preinstallation meeting one week before starting work of this section; require attendance by all relevant installers.

## **1.05 SUBMITTALS**

- A. See Section 01 3300 - Submittal Procedures for submittal process.
- B. Product Data: Provide data for masonry units, fabricated wire reinforcement, mortar, and masonry accessories.
- C. Shop Drawings: Indicate pertinent dimensions, materials, anchorage, size and type of fasteners, and accessories for brickwork support system. For Reinforcing shop drawings, provide layout and fabrication drawings for all concrete masonry reinforcing including vertical bars, dowels, bond beams, and anchors to steel and concrete.
- D. Samples: Submit four (4) samples of facing brick units to illustrate finish and appearance, color, texture, and extremes of color range for each type or color of brick or CMU selected.
- E. Manufacturer's Certificate: Certify that masonry units meet or exceed specified requirements.
- F. Manufacturer's Certificate: Certify that water repellent admixture manufacturer has certified masonry unit manufacturer as an approved user of water repellent admixture in the manufacture of concrete block.
- G. Test Reports: Concrete masonry manufacturer's test reports for units with integral water repellent admixture.
- H. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
  - 1. See Section 01 6000 - Product Requirements, for additional provisions.

## **1.06 QUALITY ASSURANCE**

- A. Comply with provisions of TMS 402/602, except where exceeded by requirements of the Contract Documents.
  - 1. Maintain one ( 1) copy of each document on Project Site.
- B. Fire Rated Assemblies: Comply with applicable code and drawing requirements for fire rated masonry construction.
- C. Manufacturer Qualifications: Company specializing in manufacturing the type of products specified in this section with minimum three years of documented experience.
- D. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience.

## **1.07 MOCK-UP**

- A. Construct a masonry wall as a mock-up panel sized 4 feet long x 4 feet high, which includes all specified masonry unit types, mortar and accessories and structural backup.
- B. Locate where directed.

## **1.08 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver, handle, and store masonry units by means that will prevent mechanical damage and contamination by other materials.
- B. Handle and store units in protective cartons or trays. Do not remove from protective packaging until ready for installation.

## **PART 2 PRODUCTS**

### **2.01 CONCRETE MASONRY UNITS**

- A. Concrete Block: Comply with referenced standards and as follows:
  - 1. Size: Standard units with nominal face dimensions of 16 by 8 inches and nominal depths as indicated on drawings for specific locations.
  - 2. Integral Water Repellent: All concrete masonry units used in exterior cavity walls including lintel blocks are to contain the recommended amount of integral known as "Dry-Block System, admix" as manufactured by W.R. Grace Chemical Company or equal.
  - 3. Unit Compressive Strength: Provide units with a minimum average net-area compressive strength of 2,000 psi.
  - 4. Load-Bearing Units: ASTM C90, normal weight.

- a. Hollow block, as indicated shall be two (2) core standard unit and shall be a minimum of 28 days old.
  - b. Exposed faces: Manufacturer's standard neutral color and texture where indicated.
- 5. Non-Loadbearing Units: ASTM C129.
  - a. Hollow block, as indicated shall be two (2) core standard unit and shall be a minimum of 28 days old.
  - b. Normal weight.
- 6. Comply with ASTM C90 for finish and appearance requirements. Do not include units in the Work which do not meet the minimum established requirements.
- B. Concrete Brick:
  - 1. Size: As indicated on drawings.
  - 2. Concrete Building Brick: ASTM C55; lightweight, solid, for interior or concealed use.

## 2.02 BRICK UNITS

- A. Manufacturers:
  - 1. Belden Brick: [www.beldenbrick.com/#sle](http://www.beldenbrick.com/#sle).
  - 2. General Clay or equal.
  - 3. Endicott Clay Products Co: [www.endicott.com/#sle](http://www.endicott.com/#sle).
  - 4. Substitutions: See section 01 6000 - Product Requirements.
- B. Facing Brick: ASTM C216, Type FBS, Grade SW.
  - 1. Color and texture: As selected by Architect/Engineer to match existing face brick units on 1922 building.
  - 2. Nominal size: 2-1/4" x 8" x 4".
  - 3. Compressive strength: 2500 psi, measured in accordance with ASTM C67/C67M.
  - 4. Special shapes: Molded units as required by conditions indicated, unless standard units can be sawn without chipping to produce equivalent effect.

## 2.03 MORTAR AND GROUT MATERIALS

- A. Mortar and Grout: As specified in Section 04 0511.
- B. Mortar mix shall consist of pre-packaged blend of Portland cement and hydrated lime.
  - 1. Portland Cement: ASTM C150/C150M, Type I.
  - 2. Not more than 0.60 percent alkali.
  - 3. Hydrated Lime: ASTM C207, Type S.
  - 4. Mortar Aggregate: ASTM C144.
  - 5. Grout Aggregate: ASTM C404.
- C. Sand shall conform to the requirements of ASTM C 144, except that grading shall comply with the following limits.
  - 1. No. 4 Sieve: 100 percent passing.
  - 2. No. 8 Sieve: 95 to 100 percent passing.
  - 3. No. 16 Sieve: 60 to 100 percent passing.
  - 4. No. 30 Sieve: 35 to 70 percent passing.
  - 5. No. 50 Sieve: 15 to 35 percent passing.
  - 6. No. 100 Sieve: 2 to 15 percent passing.
  - 7. No. 200 Sieve: 0 to 2 percent passing.
- D. Water: Clean and potable.
- E. Moisture-Resistant Admixture: Water repellent compound designed to reduce capillarity.
  - 1. Acceptable Product: Dry Block or equal.
- F. Packaged Dry Material for Mortar for Unit Masonry: Premixed Portland cement, hydrated lime, and sand; complying with ASTM C1714/C1714M and capable of producing mortar of the specified strength in accordance with ASTM C270 with the addition of water only.
  - 1. Type: Type N.
  - 2. Color: to match existing.

## 2.04 REINFORCEMENT AND ANCHORAGE

- A. Manufacturers:
  - 1. WIRE-BOND. [www.wirebond.com/#sle](http://www.wirebond.com/#sle).
  - 2. Substitutions: See Section 01 6000 - Product Requirements.
- B. Reinforcing Steel: Type specified in Section 03 3000; size as indicated on drawings; galvanized finish.
- C. Joint Reinforcement: Use ladder type joint reinforcement.
- D. Single Wythe Joint Reinforcement: ASTM A951/A951M.
  - 1. Type: Ladder.
  - 2. Material: ASTM A1064/A1064M steel wire, hot dip galvanized after fabrication to ASTM A153/A153M Class B.
  - 3. Size: 0.1875 inch side rods with 0.1483 inch cross rods; width as required to provide not less than 5/8 inch of mortar coverage on each exposure.
- E. Adjustable Multiple Wythe Joint Reinforcement: ASTM A951/A951M.
  - 1. Type: Ladder, with adjustable ties or tabs spaced at 16 in on center.
  - 2. Material: ASTM A1064/A1064M steel wire, hot dip galvanized after fabrication to ASTM A153/A153M Class B.
  - 3. Size: 0.1875 inch side rods with 0.1483 inch cross rods and adjustable components of 0.1875 inch wire, width of components as required to provide not less than 5/8 inch of mortar coverage from each masonry face.
  - 4. Vertical adjustment: Not more than 1 1/4 inches.
  - 5. Seismic Feature: Provide lip, hook, or clip on extended leg of wall ties to engage or enclose not less than one continuous horizontal joint reinforcement wire of 0.1483 inch diameter.
  - 6. Insulation Clips: Provide clips at tabs or ties designed to secure insulation against outer face of inner wythe of masonry.
- F. Strap Anchors: Bent steel shapes, 1-1/2 inch width, 0.105 inch thick, 24 inch length, with 1-1/2 inch long, 90 degree bend at each end to form a U or Z shape or with cross pins, hot dip galvanized to ASTM A153/A153M Class B.
- G. Flexible Anchors: 2-piece anchors that permit differential movement between masonry and building frame, sized to provide not less than 5/8 inch of mortar coverage from masonry face.
  - 1. Concrete frame: Dovetail anchors of bent steel strap, nominal 1 inch width x 0.024 in thick, with trapezoidal wire ties 0.1875 inch thick, hot dip galvanized to ASTM A 153/A 153M, Class B.
  - 2. Concrete frame: Dovetail anchors of bent steel strap, nominal 1 inch width x 0.024 in thick, with corrugated strap ties of nominal 1 inch width and 0.075 inch thick, hot dip galvanized to ASTM A 153/A 153M, Class B.
  - 3. Steel frame: Crimped wire anchors for welding to frame, 0.25 inch thick, with trapezoidal wire ties 0.1875 inch thick, hot dip galvanized to ASTM A 153/A 153M, Class B.
- H. Two-Piece Wall Ties: Formed steel wire, 0.1875 inch thick, adjustable, eye and pintle type, hot dip galvanized to ASTM A 153/A 153M, Class B, sized to provide not less than 5/8 inch of mortar coverage from masonry face and to allow vertical adjustment of up to 1-1/4 in.
- I. Masonry Veneer Anchors: 2-piece anchors that permit differential movement between masonry veneer and structural back-up, hot dip galvanized to ASTM A 153/A 153M, Class B2.  
Wood/Metal stud or Concrete block back-up shall be X-SEAL Anchor with X-Seal Tape as manufactured by Hohmann & Barnard or equal. Structural Steel back-up shall be #359 as manufactured by Hohmann & Barnard or equal.
  - 1. Anchor plates: Not less than 0.075 inch thick, designed for fastening to structural backup through sheathing by two fasteners; provide design with legs that penetrate sheathing and insulation to provide positive anchorage.
  - 2. Wire ties: Triangular shape, 0.1875 inch thick. Vee Byna-Tie as manufactured by Hohmann & Barnard, Inc., or equal.

3. Vertical adjustment: Not less than 2 inches.
- J. Metal-to-Metal Fasteners: Self-drilling, self-tapping screws; corrosion resistant finish or hot dip galvanized to ASTM A153/A153M.
  1. Manufacturers:
    - a. ITW Commercial Construction North America; Teks Select Series: [www.ITWBuildex.com/#sle](http://www.ITWBuildex.com/#sle).
    - b. Substitutions: See Section 01 6000 - Product Requirements.

## 2.05 FLASHINGS

- A. Metal Flashing Materials:
  1. Stainless Steel Flashing: ASTM A666, Type 304, soft temper; 26 gage, 0.0187 inch thick; finish 2B to 2D.
- B. Membrane Asphaltic Flashing Materials:
  1. Rubberized Asphalt Flashing: Self-adhering polymer modified asphalt sheet; 40 mils (0.040 inch) minimum total thickness; 8 mil cross-laminated polyethylene bonded to adhesive rubberized asphalt, with a removable release liner.
    - a. Manufacturers:
      - 1) Advanced Building Products, Inc; Strip-N-Flash: [www.advancedbuildingproducts.com/#sle](http://www.advancedbuildingproducts.com/#sle).
      - 2) York Manufacturing, Inc; York Seal: [www.yorkmfg.com/#sle](http://www.yorkmfg.com/#sle).
      - 3) Substitutions: See Section 01 6000 - Product Requirements.
- C. EPDM Flashing: ASTM D4637/D4637M, Type I, 0.040 inch thick.
  1. Manufacturers:
    - a. Heckmann Building Products, Inc: [www.heckmannbuildingprods.com/#sle](http://www.heckmannbuildingprods.com/#sle)
    - b. Hohmann & Barnard, Inc: [www.h-b.com/#sle](http://www.h-b.com/#sle).
    - c. WIRE-BOND: [www.wirebond.com/#sle](http://www.wirebond.com/#sle).
    - d. Substitutions: See Section 01 6000 - Product Requirements.
- D. Lap Sealant: Butyl type flashing mastic as recommended by flashing manufacturer.
- E. Flashing Sealant/Adhesives: Silicone, polyurethane, or silyl-terminated polyether/polyurethane or other type required or recommended by flashing manufacturer; type capable of adhering to type of flashing used.
  1. Manufacturers, Synthetic Rubber Products:
    - a. Mortar Net Solutions: [www.mortarnet.com/#sle](http://www.mortarnet.com/#sle).
  2. Manufacturers, Modified Polyether Products:
    - a. Mortar Net Solutions: [www.mortarnet.com/#sle](http://www.mortarnet.com/#sle).
    - b. York Manufacturing, Inc; UniverSeal US-100 Liquid Tape: [www.yorkmfg.com/#sle](http://www.yorkmfg.com/#sle).
    - c. Substitutions: See Section 01 6000 - Product Requirements.
- F. Termination Bars: Stainless steel; compatible with membrane and adhesives.
  1. Manufacturers:
    - a. York Manufacturing, Inc; Termination Bar: [www.yorkmfg.com/#sle](http://www.yorkmfg.com/#sle).
    - b. Mortar Net Solutions; Termination Bars: [www.mortarnet.com/#sle](http://www.mortarnet.com/#sle).
- G. Drip Edge: Stainless steel; angled drip with hemmed edge; compatible with membrane and adhesives.
  1. Manufacturers:
    - a. Mortar Net Solutions; Metal Drip Edges: [www.mortarnet.com/#sle](http://www.mortarnet.com/#sle).
- H. Lap Sealants and Tapes: As recommended by flashing manufacturer; compatible with membrane and adhesives.

## 2.06 ACCESSORIES

- A. Preformed Control Joints: Rubber material. Provide with corner and tee accessories, fused joints.
- B. Joint Filler: Closed cell polyvinyl chloride; oversized 50 percent to joint width; self expanding; 1 inch wide by maximum lengths available.

- C. Cavity Mortar Control: Semi-rigid polyethylene or polyester mesh panels, sized to thickness of wall cavity, and designed to prevent mortar droppings from clogging weeps and cavity vents and allow proper cavity drainage.
  - 1. Full-Height Airspace Maintenance and Drainage Material: Mesh panels, fitted between masonry ties.
    - a. Manufacturers:
      - 1) Advanced Building Products, Inc.; Mortairvent-CW: [www.advancedbuildingproducts.com/#sle](http://www.advancedbuildingproducts.com/#sle).
      - 2) CavClear/Archovations, Inc; CavClear Masonry Mat: [www.cavclear.com/#sle](http://www.cavclear.com/#sle).
      - 3) CavClear/Archovations, Inc; CavClear Polyisocyanurate Insulation System: [www.cavclear.com/#sle](http://www.cavclear.com/#sle).
      - 4) Substitutions: Not permitted.
  - 2. Mortar Diverter: Semi-rigid mesh designed for installation at flashing locations.
    - a. Manufacturers:
      - 1) Advanced Building Products Inc; Mortar Break DT: [www.advancedbuildingproducts.com/#sle](http://www.advancedbuildingproducts.com/#sle).
      - 2) Advanced Building Products Inc; Mortar Break: [www.advancedflashing.com/#sle](http://www.advancedflashing.com/#sle).
      - 3) Mortar Net Solutions: [www.mortarnet.com/#sle](http://www.mortarnet.com/#sle).
      - 4) York Manufacturing, Inc: [www.yorkmfg.com/#sle](http://www.yorkmfg.com/#sle).
      - 5) Substitutions: See Section 01 6000 - Product Requirements.
- D. Building Paper: ASTM D226/D226M, Type I ("No.15") asphalt felt.
- E. Nailing Strips: Softwood lumber, preservative treated; as specified in Section 06 1000.
- F. Nailing Strips: Softwood lumber, preservative treated for moisture resistance, dovetail shape, sized to masonry joints.
- G. Weeps:
- H. Mortar Maze Cell Vents: Durable polypropylene as manufactured by Advanced Building Products or equal. Color as selected by Architect/Engineer.
- I. Weep: Provide polypropylene weep vents in the head joints in the first course immediately above flashing. Weep vents shall be spaced 24" o.c. maximum. Keep weep vents and cavity areas above flashing free from mortar droppings.
- J. Color(s): As selected by Architect from manufacturer's full range.
- K. Drainage Fabric: Polyester or polypropylene mesh.
  - 1. Manufacturers:
    - a. Advanced Building Products, Inc.; Mortairvent: [www.advancedbuildingproducts.com/#sle](http://www.advancedbuildingproducts.com/#sle).
    - b. Mortar Net Solutions: [www.mortarnet.com/#sle](http://www.mortarnet.com/#sle).
    - c. York Manufacturing, Inc; Weep Armor Weep Vent Protection: [www.yorkmfg.com/#sle](http://www.yorkmfg.com/#sle).
- L. Multicomponent Cavity Wall Drainage System: Combination mortar diverter, flashing and weep system.
  - 1. Membrane Type: Thermoplastic vinyl.
  - 2. Drip Edge: Galvanized steel with factory applied, high-performance organic coating.
  - 3. Drip Edge Color: Selected by Architect from manufacturer's standard custom range.
  - 4. Termination Bar: Polyvinyl chloride (PVC).
  - 5. System Unit Length: 5 feet, 6 inches.
  - 6. Manufacturers:
    - a. Mortar Net Solutions: [www.mortarnet.com/#sle](http://www.mortarnet.com/#sle).
    - b. Substitutions: See Section 01 6000 - Product Requirements.
- M. Air Space Maintenance and Drainage System: Dovetail Mortar Mat or equal.
  - 1. Required thickness of mat for air space between insulation and exterior wythe.

- a. 3/4 inch for air spaces 1 inch to 1-1/8 inches.
- b. 1 inch for air spaces 1-1/4 inches to 1-3/8 inches.
- c. 1-1/4 inch for air spaces greater than or equal to 1-1/2 inches.

N. Cleaning Solution: Non-acidic, not harmful to masonry Work or adjacent materials.

## **2.07 LINTELS**

A. See Lintel Schedule- Drawing S001 & details.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that field conditions are acceptable and are ready to receive masonry. Correct conditions detrimental to timely and proper completion of the Work. Do not proceed until unsatisfactory conditions are corrected.
- B. Verify that related items provided under other Sections are properly sized and located.
- C. Do not commence installation until foundations are clean, rough and level. Remove all laitance and foreign material.
- D. Verify that the foundation elevation is such that the bed joint thickness will be between 1/4 inch and 3/4 inch and that the foundation is true to line with masonry not projecting over more than 1/4 inch.
- E. Verify that built-in items are in proper location and ready for roughing into masonry work.
- F. Clean projecting dowels free from loose scale, dirt, concrete, and other material that will inhibit bond.

### **3.02 PREPARATION**

- A. Direct and coordinate placement of metal anchors supplied for installation under other Sections.
- B. Provide temporary bracing during installation of Masonry Work. Maintain in place until building structure provides permanent bracing.

### **3.03 MORTAR MIXING**

- A. Measuring of materials shall be either by weight or volume such that the specified proportions of mortar materials can be controlled and accurately maintained.
- B. Sand shall not be measured by the shovel.
- C. Mortar shall be mixed in a mechanical batch mixer for at least 3 minutes, but not more than 5 minutes, with the maximum amount of water which will produce a workable consistency.
- D. If, within 2 hours of mixing, excessive water is lost from the mortar by evaporation, re-temper the mortar.
- E. Discard all mortar which is more than 2-1/2 hours old.

### **3.04 COURSING**

- A. Establish lines, levels, and coursing indicated. Protect from displacement.
- B. Maintain masonry courses to uniform dimension. Form vertical and horizontal joints of uniform thickness.
- C. Concrete Masonry Units:
  - 1. Bond: Running, or as otherwise indicated.
  - 2. Coursing: One (1) unit and one mortar joint to equal 8 inches.
  - 3. Mortar Joints: Concave.
- D. Brick Units:
  - 1. Bond: Running, or as otherwise indicated.
  - 2. Coursing: Three (3) units and three mortar joints to equal 8 inches.
  - 3. Mortar Joints: Concave.



### **3.05 PLACING AND BONDING**

- A. Lay solid masonry units in full bed of mortar, with full head joints, uniformly jointed with other work.
- B. Lay hollow masonry units with face shell bedding on head and bed joints.
- C. Lay all masonry in running bond unless otherwise shown on the Contract Drawings. Use only brick that are clean and free from dust and other foreign matter.
- D. Furrowing of bed joints shall not be permitted.
- E. Buttering corners of joints or excessive furrowing of mortar joints is not permitted.
- F. Remove excess mortar as work progresses. Do not permit mortar to drop and accumulate into cavity air space or to plug weeps.
- G. Remove excess mortar with water repellent admixture promptly. Do not use acids, sandblasting or high pressure cleaning methods.
- H. Interlock intersections and external corners, except for units laid in stack bond.
- I. Do not shift or tap masonry units after mortar has achieved initial set. Where adjustment must be made, remove mortar and replace.
- J. Perform Job Site cutting of masonry units with proper tools to provide straight, clean, unchipped edges. Prevent broken masonry unit corners or edges.
- K. Cut mortar joints flush where wall tile is scheduled or resilient base is scheduled.
- L. Isolate masonry partitions from vertical structural framing members with a control joint as indicated.
- M. Isolate top joint of masonry partitions from horizontal structural framing members and slabs or decks with compressible joint filler.
- N. Lay clay tile flue linings vertically, embedded in concrete block units.
  - 1. Install in accordance with ASTM C1283.
  - 2. Extend above chimney cladding 8 inches.
  - 3. Trowel mortar smooth over chimney cladding and slope for positive drainage.
- O. Place precast chimney cap atop chimney masonry; mortar into place; seal to protruding flue.

### **3.06 MINIMUM REQUIREMENTS OF COLD WEATHER CONSTRUCTION**

- A. Air Temperature:
  - 1. Above 40 degrees F:
    - a. Heating of Materials: Normal masonry procedures.
    - b. Protection: Cover walls with plastic or canvas at end of workday to prevent water entering masonry.
  - 2. Below 40 degrees F:
    - a. Do not lay masonry units having a temperature below 20 degrees F. Remove visible ice on masonry units before the unit is laid in the masonry.
    - b. Heating of Materials: Heat mortar sand or mixing water to maintain mortar temperatures between 40 and 120 degrees F at the time of mixing. Maintain mortar above freezing until used in masonry.
    - c. Protection: Cover walls with plastic or canvas at end of work day to prevent water entering masonry.
    - d. Mean daily temperature is between 40 and 32 degrees F:
      - 1) Protect completed masonry from rain or snow by covering with a weather resistive membrane for 24 hours after construction.
  - 3. Below 32 degrees F:
    - a. Heating of Materials: In addition to the above, heat the sand. Frozen sand and frozen wet masonry units must be thawed.
    - b. Protection: With wind velocities over 10 mph, provide windbreaks during the work day and cover walls and materials at the end of the work day to prevent wetting and

- freezing.
- c. Mean daily temperature is between 32 and 25 degrees F:
  - 1) Completely cover masonry with a weather resistive membrane for 24 hours after construction.
- d. Mean daily temperature is between 25 and 20 degrees F:
  - 1) Completely cover completed masonry with insulation blankets or equal protection for 24 hours after construction.
- e. Ambient Temperature Between 25 and 20 degrees F:
  - 1) Use heat sources on both sides of the masonry under construction and install wind breaks when wind velocity is in excess of 10 mph.
- f. Mean daily temperature is below 20 degrees F:
  - 1) Maintain masonry temperature above 32 degrees F for a 24 hour period after construction by enclosure with supplementary heat, by electric heating blankets, by infrared heat lamps, or by other acceptable methods as approved by the Architect/Engineer.
- g. Ambient Temperature Below 20 degrees F:
  - 1) Provide an enclosure for the masonry under construction and use heat source to maintain temperatures above 32 degrees F within the enclosure.

### **3.07 MINIMUM REQUIREMENTS OF HOT WEATHER CONSTRUCTION**

- A. Preparation:
  - 1. When Ambient temperature exceeds 100 degrees F or exceeds 90 degrees F with a wind velocity greater than 8 mph:
    - a. Maintain sand piles in a damp, loose condition.
    - b. Provide necessary conditions and equipment to produce mortar having a temperature below 120 degrees F.
  - 2. When Ambient temperature exceeds 115 degrees F or exceeds 105 degrees F with a wind velocity greater than 8 mph:
    - a. Maintain sand piles in a damp, loose condition.
    - b. Provide necessary conditions and equipment to produce mortar having a temperature below 120 degrees F and shade materials and mixing equipment from direct sunlight.
- B. During Construction:
  - 1. When Ambient temperature exceeds 100 degrees F or exceeds 90 degrees F with a wind velocity greater than 8 mph:
    - a. Maintain temperature of mortar and grout below 120 degrees F.
    - b. Flush mixer, mortar transport container, and mortar boards with cool water before they come into contact with mortar ingredients or mortar.
    - c. Maintain mortar consistency by re-tempering with cool water.
    - d. Use mortar within 2 hours of initial mixing.
  - 2. When Ambient temperature exceeds 115 degrees F or exceeds 105 degrees F with a wind velocity greater than 8 mph:
    - a. Maintain temperature of mortar and grout below 120 degrees F.
    - b. Flush mixer, mortar transport container, and mortar boards with cool water before they come into contact with mortar ingredients or mortar.
    - c. Maintain mortar consistency by re-tempering with cool water.
    - d. Use mortar within 2 hours of initial mixing.
    - e. Use cool mixing water for mortar and grout.
    - f. Ice is permitted in the mixing water prior to use. Do not permit ice in the mixing water when added to the other mortar or grout materials.
- C. Protection:
  - 1. When Ambient temperature exceeds 100 degrees F or exceeds 90 degrees F with a wind velocity greater than 8 mph:
    - a. Fog spray all newly constructed masonry until damp, at least three times a day until the masonry is three days old.

### **3.08 WEEPS/CAVITY VENTS**

- A. Install weeps in veneer and cavity walls at 24 inches on center horizontally on top of through-wall flashing above shelf angles and lintels and at bottom of walls.
- B. Install cavity vents in veneer and cavity walls at 32 inches on center horizontally below shelf angles and lintels and near top of walls.

### **3.09 CAVITY MORTAR CONTROL**

- A. Do not permit mortar to drop or accumulate into cavity air space or to plug weep/cavity vents.
- B. For cavity walls, build inner wythe ahead of outer wythe to accommodate accessories.
- C. Install cavity mortar control panels continuously throughout full height of exterior masonry cavities during construction of exterior wythe, complying with manufacturer's installation instructions.
  - 1. Verify that airspace width is no more than 3/8 inch greater than panel thickness.
  - 2. Hold cavity mortar control panel tight to face wythe.
  - 3. Install horizontally between joint reinforcement.
  - 4. Stagger end joints in adjacent rows.
  - 5. Fit to perimeter construction and penetrations without voids.
- D. Install cavity mortar diverter at base of cavity and at other flashing locations as recommended by manufacturer to prevent mortar droppings from blocking weep/cavity vents.

### **3.10 REINFORCEMENT AND ANCHORAGE - GENERAL, SINGLE WYTHER MASONRY, AND CAVITY WALL MASONRY**

- A. Unless otherwise indicated on drawings or specified under specific wall type, install horizontal joint reinforcement 16 inches on center.
- B. Place masonry joint reinforcement in first and second horizontal joints above and below openings. Extend minimum 16 inches each side of opening.
- C. Place continuous joint reinforcement in first and second joint below top of walls.
- D. Embed longitudinal wires of joint reinforcement in mortar joint with at least 5/8 inch mortar cover on each side.
- E. Lap joint reinforcement ends minimum 6 inches.
- F. Reinforce stacked bonded unit joint corners and intersections with strap anchors 16 inches on center.
- G. Fasten anchors to structural framing and embed in masonry joints as masonry is laid. Unless otherwise indicated on drawings or closer spacing is indicated under specific wall type, space anchors at maximum of 36 inches horizontally and 24 inches vertically.
- H. Embed ties and anchors in mortar joint and extend into masonry unit a minimum of 1-1/2 inches with at least 5/8 inch mortar cover to the outside face of the anchor.

### **3.11 REINFORCEMENT AND ANCHORAGE - SINGLE WYTHER MASONRY**

- A. Install horizontal joint reinforcement 16 inches on vertical center.
- B. Place masonry joint reinforcement in first and second horizontal joints above and below openings. Extend minimum 16 inches each side of opening.
- C. Place continuous joint reinforcement in first and second joint below top of walls.
- D. Lap joint reinforcement ends minimum 6 inches.
- E. Reinforce stacked bonded unit joint corners and intersections with strap anchors 16 inches on center.

### **3.12 REINFORCEMENT AND ANCHORAGE - MASONRY VENEER**

- A. Install horizontal joint reinforcement 16 inches on vertical center.
- B. Place masonry joint reinforcement in first and second horizontal joints above and below openings. Extend minimum 16 inches each side of opening.

- C. Place continuous joint reinforcement in first and second joint below top of walls.
- D. Lap joint reinforcement ends minimum 6 inches.
- E. Masonry Back-Up: Embed anchors to bond veneer at maximum 16 inches on center vertically and 24 inches on center horizontally. Place additional anchors at perimeter of openings and ends of panels, so maximum spacing of anchors is 8 inches on center vertically.
- F. Masonry Back-Up: Embed anchors in masonry back-up to bond veneer at maximum 1.77 sq ft of wall surface per anchor. Place additional anchors at perimeter of openings and ends of panels, so maximum spacing of anchors is 8 inches on center.
- G. Stud Back-Up: Secure veneer anchors to stud framed back-up and embed into masonry veneer at maximum 16 inches on center vertically and 16 inches on center horizontally. Place additional anchors at perimeter of openings and ends of panels, so maximum spacing of anchors is 8 inches on center.
- H. Stud Back-Up: Secure veneer anchors to stud framed back-up and embed into masonry veneer at maximum 1.77 sq ft of wall surface per anchor. Place additional anchors at perimeter of openings and ends of panels, so maximum spacing of anchors is 8 inches on center.
- I. Seismic Reinforcement: Connect veneer anchors with continuous horizontal wire reinforcement before embedding anchors in mortar.
- J. Reinforce stacked bonded unit joint corners and intersections with strap anchors 16 inches on center.

### **3.13 REINFORCEMENT AND ANCHORAGES - CAVITY WALL MASONRY**

### **3.14 REINFORCEMENT AND ANCHORAGES - MULTIPLE WYTHE UNIT MASONRY**

- A. Install horizontal joint reinforcement 16 inches on vertical center.
- B. Place masonry joint reinforcement in first and second horizontal joints above and below openings. Extend minimum 16 inches each side of opening.
- C. Place continuous joint reinforcement in first and second joint below top of walls.
- D. Lap joint reinforcement ends minimum 6 inches.
- E. Use individual metal ties installed in horizontal joints to bond wythes together. Provide ties spaced as indicated on drawings.
- F. Support and secure reinforcing bars from displacement. Maintain position within 1/2 inch of dimensioned position.

### **3.15 MASONRY FLASHINGS**

- A. Whether or not specifically indicated, install masonry flashing to divert water to exterior at all locations where downward flow of water will be interrupted.
  - 1. Extend flashings full width at such interruptions and at least 8 inches minimum into adjacent masonry or turn up at least 8 inches minimum to form watertight pan at non-masonry construction.
  - 2. Remove or cover protrusions or sharp edges that could puncture flashings.
  - 3. Seal lapped ends and penetrations of flashing before covering with mortar.
- B. Terminate flashing up 8 inches minimum on vertical surface of backing:
  - 1. Install vertical leg of flashing behind water-resistive barrier sheet over backing.
  - 2. Install vertical leg of flashing over fluid-applied or self-adhered air/vapor barriers over backing or per manufacturer's directions.
  - 3. Terminate vertical leg of flashing into bed joint in masonry or reglet in concrete.
  - 4. Anchor vertical leg of flashing into backing with a termination bar and sealant.
  - 5. Apply cap bead of sealant on top edge of self-adhered flashing.
- C. Install flashing in accordance with manufacturer's instructions and BIA Technical Notes No. 7.
- D. Extend metal flashings through exterior face of masonry and terminate in an angled drip with hemmed edge. Install joint sealer below drip edge to prevent moisture migration under flashing.

- E. Extend metal flashings to within 1/2 inch of exterior face of masonry and adhere to top of stainless steel angled drip with hemmed edge.
- F. Support flexible flashings across gaps and openings.
- G. Lap end joints of flashings at least 6 inches and seal watertight with flashing sealant/adhesive.

### **3.16 LINTELS**

- A. Install precast concrete lintels over openings. Provide steel lintels in accordance with the lintel schedule as indicated in the Contract Drawings or approved Shop Drawings.
- B. Install reinforced unit masonry lintels over openings where steel or precast concrete lintels are not scheduled. Unless Noted Otherwise on Contract Drawings or approved Shop Drawings:
  - 1. Openings to 42 inches: Place two, No. 4 reinforcing bars 1 inch from bottom web.
  - 2. Openings from 42 inches to 78 inches: Place two, No. 5 reinforcing bars 1 inch from bottom web.
  - 3. Openings over 78 inches: Reinforce openings as detailed.
  - 4. Do not splice reinforcing bars.
  - 5. Support and secure reinforcing bars from displacement. Maintain position within 1/2 inch of dimensioned position.
  - 6. Place and consolidate grout fill without displacing reinforcing.
  - 7. Allow masonry lintels to attain specified strength before removing temporary supports.
- C. Maintain minimum 4" inch bearing on each side of opening.

### **3.17 GROUTED COMPONENTS**

- A. Unless Noted Otherwise on the Contract Drawings or approved Shop Drawings:
  - 1. Reinforce bond beams with 2, No. 5 bars, 1 inch from bottom web.
  - 2. Reinforce columns with 4, No. 5 bars, placed evenly spaced around column perimeter..
- B. General: Perform all grouting in strict accordance with the provisions for high-lift grouting as described in Section 2413(d) of the Uniform Building Code, or use low-lift grouting.
- C. Timing: Do not grout until masonry has cured at least 24 hours.
- D. Lap splices minimum 24 bar diameters.
- E. Support and secure reinforcing bars from displacement. Maintain position within 1/2 inch of dimensioned position.
- F. Place and consolidate grout fill without displacing reinforcing.
- G. At bearing locations, fill masonry cores with grout for a minimum 12 inches either side of opening.

### **3.18 CONTROL AND EXPANSION JOINTS**

- A. Do not continue horizontal joint reinforcement through control or expansion joints.
- B. Form control joint with a sheet building paper bond breaker fitted to one side of the hollow contour end of the block unit. Fill the resultant core with grout fill. Rake joint at exposed unit faces for placement of backer rod and sealant.
- C. Install preformed control joint device in continuous lengths. Seal butt and corner joints in accordance with manufacturer's instructions.
- D. Size control joints as indicated on drawings; if not indicated, 3/4 inch wide and deep.
- E. Size control joint in accordance with Section 07 9005 - Joint Sealers for sealant performance.
- F. Form expansion joint as detailed on drawings.

### **3.19 BUILT-IN WORK**

- A. As Work progresses, install built-in metal door frames and other items to be built into the Work and furnished under other Sections.
- B. Install built-in items plumb, level, and true to line.

- C. Bed anchors of metal door and glazed frames in adjacent mortar joints. Fill frame voids solid with grout.
  - 1. Fill adjacent masonry cores with grout minimum 12 inches from framed openings.
  - 2. Fill adjacent masonry cores with grout minimum one full core from framed openings.
- D. Do not build into masonry construction organic materials that are subject to deterioration.

### **3.20 SITE TOLERANCES**

- A. Install masonry within the site tolerances found in TMS 402/602.
- B. Erect masonry within the following tolerances from the specified dimensions.
  - 1. Dimension of Elements:
    - a. In cross section or elevation: -1/4 inch, + 1/2 inch.
    - b. Mortar Joint Thickness:
      - 1) Bed: +/- 1/8 inch.
      - 2) Head: - 1/4 inch, + 3/8 inch.
      - 3) Collar: - 1/4 inch, + 3/8 inch.
    - c. Grout space of cavity width, except for masonry walls passing framed construction: -1/4 inch, + 3/8 inch.
  - 2. Elements:
    - a. Variation from Level:
      - 1) Bed joints: +/- 1/4 inch in 10 feet; +/- 1/2 inch maximum.
      - 2) Top surfacing of bearing walls: +/- 1/4 inch in 10 feet; +/- 1/2 inch maximum.
    - b. Variation from Plumb:
      - 1) +/- 1/4 inch in 10 feet; +/- 3/8 inch in 20 feet; +/- 1/2 inch maximum.
    - c. True to a Line:
      - 1) +/- 1/4 inch in 10 feet; +/- 3/8 inch in 20 feet; +/- 1/2 inch maximum.
    - d. Alignment of Columns and Walls (bottom versus top):
      - 1) Bearing walls: +/- 1/2 inch.
      - 2) Non-bearing walls: +/- 3/4 inch.
  - 3. Locations of Elements:
    - a. Indicated in plan: +/- 1/2 inch in 20 feet; +/- 3/4 maximum.
    - b. Indicated in elevation: +/- 1/2 inch in story height; +/- 3/4 maximum.
  - 4. If the above conditions cannot be met due to previous construction, notify the Architect/Engineer.
- C. Maximum Variation from Alignment of Columns: 1/4 inch.
- D. Maximum Variation From Unit to Adjacent Unit: 1/16 inch.
- E. Maximum Variation from Plane of Wall: 1/4 inch in 10 ft and 1/2 inch in 20 ft or more.
- F. Maximum Variation from Plumb: 1/4 inch per story non-cumulative; 1/2 inch in two stories or more.
- G. Maximum Variation from Level Coursing: 1/8 inch in 3 ft and 1/4 inch in 10 ft; 1/2 inch in 30 ft.
- H. Maximum Variation of Mortar Joint Thickness: Head joint, minus 1/4 inch, plus 3/8 inch.
- I. Maximum Variation from Cross Sectional Thickness of Walls: 1/4 inch.

### **3.21 CUTTING AND FITTING**

- A. Cut and fit for chases. Coordinate with other sections of work to provide correct size, shape, and location.
- B. Obtain approval prior to cutting or fitting masonry work not indicated or where appearance or strength of masonry work may be impaired.

### **3.22 FIELD QUALITY CONTROL**

- A. An independent testing agency will perform field quality control tests, as specified in Section 01 4533- Special Inspections & Tests.

- B. Clay Masonry Unit Tests: Test each variety of clay masonry in accordance with ASTM C67/C67M requirements, sampling 5 randomly chosen units for each 50,000 installed.
- C. Clay Masonry Unit Tests: Test each variety of clay masonry in accordance with ASTM C67/C67M requirements, sampling 5 randomly chosen units for each 50,000 installed.
- D. Concrete Masonry Unit Tests: Test each variety of concrete unit masonry in accordance with ASTM C140/C140M for compliance with requirements of this specification.
- E. Mortar Tests: Test each type of mortar in accordance with ASTM C780, testing with same frequency as masonry samples.

### **3.23 CLEANING**

- A. Remove excess mortar and mortar droppings.
- B. At the completion of this portion of the Work, visually inspect the Work of this Section. Point or cut out and repoint all holes and defective joints, if necessary.
- C. Replace defective mortar. Match adjacent Work.
- D. Replace defective masonry units not conforming to ASTM appearance requirements.
- E. Thoroughly clean all brick surfaces to be left exposed in the Finished Work by brush, water, and an approved cleaning solution, removing all traces of mortar, grout efflorescence, and foreign matter. In the event ordinary cleaning is not adequate, provide acid cleaning when so directed by the Architect/Engineer and at no additional cost to the Owner.
- F. Clean soiled surfaces with cleaning solution.
- G. Use non-metallic tools in cleaning operations.

### **3.24 PROTECTION**

- A. Without damaging Completed Work, provide protective boards at exposed external corners which may be subject to damage by construction activities.

### **END OF SECTION**

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**SECTION 04 7200  
CAST STONE MASONRY**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Architectural cast stone.
- B. Units required are indicated on drawings as "cast stone".
- C. Units required are:
  - 1. Exterior wall units, including sills and cornice trim & 24" diameter cast stone medallion.

**1.02 RELATED REQUIREMENTS**

- A. Section 04 0511 - Mortar and Masonry Grout: Mortar for setting cast stone.
- B. Section 04 2000 - Unit Masonry: Installation of cast stone in conjunction with masonry.
- C. Section 07 9200 - Joint Sealants: Sealing joints indicated to be left open for sealant.

**1.03 REFERENCE STANDARDS**

- A. ACI 318 - Building Code Requirements for Structural Concrete 2019, with Errata (2021).
- B. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement 2020.
- C. ASTM A767/A767M - Standard Specification for Zinc-Coated (Galvanized) Steel Bars for Concrete Reinforcement 2019.
- D. ASTM A884/A884M - Standard Specification for Epoxy-Coated Steel Wire and Welded Wire Reinforcement 2019, with Editorial Revision (2020).
- E. ASTM A1064/A1064M - Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete 2018a.
- F. ASTM C33/C33M - Standard Specification for Concrete Aggregates 2018.
- G. ASTM C150/C150M - Standard Specification for Portland Cement 2021.
- H. ASTM C270 - Standard Specification for Mortar for Unit Masonry 2019a.
- I. ASTM C494/C494M - Standard Specification for Chemical Admixtures for Concrete 2019.
- J. ASTM C1364 - Standard Specification for Architectural Cast Stone 2019.

**1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Test results of cast stone components made previously by the manufacturer.
  - 1. Include one copy of ASTM C1364 for Architect's use.
- C. Shop Drawings: Include elevations, dimensions, layouts, profiles, cross sections, reinforcement, exposed faces, arrangement of joints, anchoring methods, anchors, and piece numbers.
- D. Mortar Color Selection Samples.
- E. Source Quality Control Test Reports.
- F. Manufacturer's Qualification Data: Documentation showing compliance with specified requirements.

**1.05 QUALITY ASSURANCE**

- A. Manufacturer Qualifications:
  - 1. A firm with a minimum of 5 years experience producing cast stone of types required for project.
  - 2. Adequate plant capacity to furnish quality, sizes, and quantity of cast stone required without delaying progress of the work.

## **1.06 MOCK-UP**

- A. Provide full size cast stone components for installation in mock-up of exterior wall.
- B. See Section 01 4000 - Quality Requirements for additional requirements.
  - 1. Approved mock-up will become standard for appearance and workmanship.
  - 2. Remove mock-up not incorporated into the work and dispose of debris.

## **1.07 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver cast stone components secured to shipping pallets and protected from damage and discoloration. Protect corners from damage.
- B. Number each piece individually to match shop drawings and schedule.
- C. Store cast stone components and installation materials in accordance with manufacturer's instructions.
- D. Store cast stone components on pallets with nonstaining, waterproof covers. Ventilate under covers to prevent condensation. Prevent contact with dirt.
- E. Protect cast stone components during handling and installation to prevent chipping, cracking, or other damage.
- F. Store mortar materials where contamination can be avoided.
- G. Schedule and coordinate production and delivery of cast stone components with unit masonry work to optimize on-site inventory and to avoid delaying the work.

## **PART 2 PRODUCTS**

### **2.01 MANUFACTURERS**

- A. Architectural Cast Stone:
  - 1. Any current producer member of the Architectural Precast Association.
  - 2. Any current producer member of the Cast Stone Institute.
  - 3. Cast Stone Medallion- basis of design: Mfg. by Pineapple Grove Designs- 24" dia.- design to be selected by owner. Pineapple Grove Designs.  
[www.pineapplegrovedesigns.com/#sle..](http://www.pineapplegrovedesigns.com/#sle..)
  - 4. Substitutions: See Section 01 6000 - Product Requirements.

### **2.02 ARCHITECTURAL CAST STONE**

- A. Cast Stone: Architectural concrete product manufactured to simulate appearance of natural limestone, to match the existing building, complying with ASTM C1364.
  - 1. Compressive Strength: As specified in ASTM C1364; calculate strength of pieces to be field cut at 80 percent of uncut piece.
  - 2. Freeze-Thaw Resistance: Demonstrated by laboratory testing in accordance with ASTM C1364.
  - 3. Surface Texture: Fine grained texture, with no bugholes, air voids, or other surface blemishes visible from distance of 20 feet.
  - 4. Color: Match existing.
  - 5. Remove cement film from exposed surfaces before packaging for shipment.
- B. Shapes: Provide shapes indicated on drawings.
  - 1. Variation from Any Dimension, Including Bow, Camber, and Twist: Maximum of plus/minus 1/8 inch or length divided by 360, whichever is greater, but not more than 1/4 inch.
  - 2. Unless otherwise indicated on drawings, provide:
    - a. Wash or slope of 1:12 on exterior horizontal surfaces.
    - b. Drips on projecting components, wherever possible.
    - c. Raised fillets at back of sills and at ends to be built in.
- C. Reinforcement: Provide reinforcement as required to withstand handling and structural stresses; comply with ACI 318.

1. Pieces More than 24 inches in Any Dimension: Provide full length two-way reinforcement of cross-sectional area not less than 0.25 percent of unit cross-sectional area.

## **2.03 MATERIALS**

- A. Portland Cement: ASTM C150/C150M.
  1. For Mortar: Type I or II, except Type III may be used in cold weather.
- B. Coarse Aggregate: ASTM C33/C33M, except for gradation; granite, quartz, or limestone.
- C. Fine Aggregate: ASTM C33/C33M, except for gradation; natural or manufactured sands.
- D. Admixtures: ASTM C494/C494M.
- E. Water: Potable.
- F. Reinforcing Bars: ASTM A615/A615M deformed bars, galvanized.
  1. Galvanized in accordance with ASTM A767/A767M, Class I.
- G. Steel Welded Wire Reinforcement: ASTM A1064/A1064M, galvanized or ASTM A884/A884M, epoxy coated.
- H. Embedded Anchors, Dowels, and Inserts: Type 304 stainless steel, of type and size as required for conditions.
- I. Mortar: Portland cement-lime, as specified in Section 04 0511 ; do not use masonry cement.
- J. Cleaner: General-purpose cleaner designed for removing mortar and grout stains, efflorescence, and other construction stains from new masonry surfaces without discoloring or damaging masonry surfaces; approved for intended use by cast stone manufacturer and by cleaner manufacturer for use on cast stone and adjacent masonry materials.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Examine construction to receive cast stone components. Notify Architect if construction is not acceptable.
- B. Do not begin installation until unacceptable conditions have been corrected.

### **3.02 INSTALLATION**

- A. Install cast stone components in conjunction with masonry, complying with requirements of Section 04 2000.
- B. Mechanically anchor cast stone units indicated; set remainder in mortar.
- C. Setting:
  1. Drench cast stone components with clear, running water immediately before installation.
  2. Set units in a full bed of mortar unless otherwise indicated.
  3. Fill vertical joints with mortar.
  4. Fill dowel holes and anchor slots completely with mortar or non-shrink grout.

### **3.03 TOLERANCES**

- A. Joints: Make all joints 3/8 inch, except as otherwise detailed.
  1. Rake mortar joints 3/4 inch for pointing.
  2. Remove excess mortar from face of stone before pointing joints.
  3. Point joints with mortar in layers 3/8 inch thick and tool to a slight concave profile.
  4. Leave the following joints open for sealant:
    - a. Head joints in top courses, including copings, parapets, cornices, sills, and steps.
    - b. Joints in projecting units.
    - c. Joints between rigidly anchored units, including soffits, panels, and column covers.
    - d. Joints below lugged sills and stair treads.
    - e. Joints below ledge and relieving angles.
    - f. Joints labeled "expansion joint".
- B. Installation Tolerances:
  1. Variation from Plumb: Not more than 1/8 inch in 10 feet or 1/4 inch in 20 feet or more.

2. Variation from Level: Not more than 1/8 inch in 10 feet or 1/4 inch in 20 feet, or 3/8 inch maximum.
3. Variation in Joint Width: Not more than 1/8 inch in 36 inches or 1/4 of nominal joint width, whichever is less.
4. Variation in Plane Between Adjacent Surfaces (Lipping): Not more than 1/16 inch difference between planes of adjacent units or adjacent surfaces indicated to be flush with units.

#### **3.04 REPAIR**

- A. Repair chips and other surface damage noticeable when viewed in direct daylight at 20 feet.
  1. Repair with matching touch-up material provided by the manufacturer and in accordance with manufacturer's instructions.
  2. Repair methods and results subject to Architect 's approval.

#### **3.05 CLEANING**

- A. Keep cast stone components clean as work progresses.
- B. Clean completed exposed cast stone after mortar is thoroughly set and cured.
  1. Wet surfaces with water before applying cleaner.
  2. Apply cleaner to cast stone in accordance with manufacturer's instructions.
  3. Remove cleaner promptly by rinsing thoroughly with clear water.
  4. Do not use acidic cleaners.

#### **3.06 PROTECTION**

- A. Protect completed work from damage.
- B. Clean, repair, or restore damaged or mortar-splashed work to condition of new work.

**END OF SECTION**

**SECTION 05 1200  
STRUCTURAL STEEL FRAMING**

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. Section Includes:
  - 1. Structural shapes.
  - 2. Channels and angles.
  - 3. Hollow structural sections.
  - 4. Structural pipe.
  - 5. Structural plates and bars.
  - 6. Floor plates.
  - 7. Bolts, connectors, and anchors.
  - 8. Shear connectors.
  - 9. Grout.
  - 10. Connection Design

**1.2 PERFORMANCE REQUIREMENTS**

- A. Structural Performance: Structural Steel Connections shall be selected, completed or designed by the fabricator to withstand the design loads indicated.
- B. Delegated Engineering Responsibility. Structural Steel Connection Design is delegated by the Engineer of Record to a qualified licensed professional engineer retained by the structural steel fabricator. The connection design engineer retained by the fabricator shall prepare calculations, shop drawings, and other structural design details for submission to the Engineer of Record with the fabricator's structural steel shop drawings.

**1.3 RELATED SECTIONS**

- A. Code Required Special Inspections and Procedures – Section 01 4533
- B. Cast-In-Place Concrete – Section 03 3000
- C. Unit Masonry – Section 04 2000
- D. Steel Joist Framing – Section 05 2100
- E. Steel Decking – Section 05 3100
- F. Cold Formed Structural Metal Framing – Section 05 4000
- G. Metal Fabrications – 05 5000
- H. Metal Stairs - 055100

**1.4 REFERENCE STANDARDS**

- A. American Institute of Steel Construction:
  - 1. AISC 303 - Code of Standard Practice for Steel Buildings and Bridges.
  - 2. AISC 341 - Seismic Provisions for Structural Steel Buildings.
  - 3. AISC 360 - Specification for Structural Steel Buildings.
- B. American Society of Civil Engineers:
  - 1. ASCE 19 - Standard Applications of Steel Cables for Buildings.
- C. ASTM International:

1. ASTM A36/A36M - Standard Specification for Carbon Structural Steel.
2. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless.
3. ASTM A108 - Standard Specification for Steel Bar, Carbon and Alloy, Cold-Finished.
4. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
5. ASTM A193/A193M - Standard Specification for Alloy-Steel and Stainless Steel Bolting Materials for High-Temperature Service.
6. ASTM A307 - Standard Specification for Carbon Steel Bolts and Studs, 60 000 PSI Tensile Strength.
7. ASTM A325 - Standard Specification for Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength.
8. ASTM A354 - Standard Specification for Quenched and Tempered Alloy Steel Bolts, Studs, and Other Externally Threaded Fasteners.
9. ASTM A449 - Standard Specification for Quenched and Tempered Steel Bolts and Studs.
10. ASTM A490 - Standard Specification for Structural Bolts, Alloy Steel, Heat Treated, 150 ksi Minimum Tensile Strength.
11. ASTM A500/A500M - Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes.
12. ASTM A501 - Standard Specification for Hot-Formed Welded and Seamless Carbon Steel Structural Tubing.
13. ASTM A514/A514M - Standard Specification for High-Yield-Strength, Quenched and Tempered Alloy Steel Plate, Suitable for Welding.
14. ASTM A529/A529M - Standard Specification for High-Strength Carbon-Manganese Steel of Structural Quality.
15. ASTM A563 - Standard Specification for Carbon and Alloy Steel Nuts.
16. ASTM A572/A572M - Standard Specification for High-Strength Low-Alloy Columbium-Vanadium Structural Steel.
17. ASTM A588/A588M - Standard Specification for High-Strength Low-Alloy Structural Steel with 50 ksi (345 MPa) Minimum Yield Point to 4-in. (100-mm) Thick.
18. ASTM A618/A618M - Standard Specification for Hot-Formed Welded and Seamless High-Strength Low-Alloy Structural Tubing.
19. ASTM A786/A786M - Standard Specification for Hot-Rolled Carbon, Low-Alloy, High-Strength Low-Alloy, and Alloy Steel Floor Plates.
20. ASTM A847/A847M - Standard Specification for Cold-Formed Welded and Seamless High Strength, Low Alloy Structural Tubing with Improved Atmospheric Corrosion Resistance.
21. ASTM A852/A852M - Standard Specification for Quenched and Tempered Low-Alloy Structural Steel Plate with 70 ksi (485 MPa) Minimum Yield Strength to 4 in. (100 mm) Thick.
22. ASTM A913/A913M - Standard Specification for High-Strength Low-Alloy Steel Shapes of Structural Quality, Produced by Quenching and Self-Tempering Process (QST).
23. ASTM A992/A992M - Standard Specification for Structural Steel Shapes.
24. ASTM B695 - Standard Specification for Coatings of Zinc Mechanically Deposited on Iron and Steel.
25. ASTM E94 - Standard Guide for Radiographic Examination.
26. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials.
27. ASTM E164 - Standard Practice for Ultrasonic Contact Examination of Weldments.
28. ASTM E165 - Standard Test Method for Liquid Penetrant Examination.
29. ASTM E709 - Standard Guide for Magnetic Particle Examination.
30. ASTM F436 - Standard Specification for Hardened Steel Washers.

31. ASTM F959 - Standard Specification for Compressible-Washer-Type Direct Tension Indicators for Use with Structural Fasteners.
  32. ASTM F1554 - Standard Specification for Anchor Bolts, Steel, 36, 55, and 105-ksi Yield Strength.
  33. ASTM F1852 - Standard Specification for Twist-Off Type Tension Control Structural Bolt/Nut/Washer Assemblies, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength.
  34. ASTM F2329 - Standard Specification for Zinc Coating, Hot-Dip, Requirements for Application to Carbon and Alloy Steel Bolts, Screws, Washers, Nuts, and Special Threaded Fasteners.
- D. American Welding Society:
1. AWS A2.4 - Standard Symbols for Welding, Brazing, and Nondestructive Examination.
  2. AWS D1.1 - Structural Welding Code - Steel.
- E. California Department of Health Services:
1. CA/DHS/EHLB/R-174 - Standard Practice for the Testing of Volatile Organic Emissions from Various Sources Using Small-Scale Environmental Chambers, including 2004 Addenda.
- F. Green Seal:
1. GC-03-2nd Edition, January 7, 1997 - Anti-Corrosive Paints.
- G. Research Council on Structural Connections:
1. RCSC - Specification for Structural Joints Using ASTM A325 or ASTM A490 Bolts.
- H. SSPC: The Society for Protective Coatings:
1. SSPC - Steel Structures Painting Manual.
  2. SSPC Paint 15 - Steel Joist Shop Paint.
  3. SSPC Paint 20 - Zinc-Rich Primers (Type I - Inorganic and Type II - Organic).
  4. SSPC SP 3 - Power Tool Cleaning.
  5. SSPC SP 6 - Commercial Blast Cleaning.
  6. SSPC SP 10 - Near-White Blast Cleaning.

## 1.5 SUBMITTALS

- A. Section 013000 – Administrative Requirements for Submittal Procedures.
- B. Shop Drawings:
1. Indicate profiles, sizes, spacing, and locations of structural members, openings, attachments, and bolts.
  2. Connections. Connections not detailed.
  3. Cambers and loads.
  4. Indicate welded connections with AWS A2.4 welding symbols. Indicate net weld lengths.
- C. Manufacturer's Mill Certificate: Certify products meet or exceed specified requirements.
- D. Mill Test Reports: Submit indicating structural strength, destructive and non-destructive test analysis, and.
- E. Welders Certificates: Certify welders employed on the Work, verifying AWS qualification within previous 12 months.

- F. Qualification data for firms and persons specified in the Qualifications section documenting compliance with the specified requirements.
- G. Connection design calculations, stamped by a licensed NYS Professional Engineer.

## 1.6 QUALITY ASSURANCE

- A. Perform Work in accordance with the following:
  - 1. Structural Steel: AISC 303, ASIC 341 and AISC 360.
  - 2. High Strength Bolted Connections: RCSC Specification for Structural Joints Using ASTM A325 or A490 Bolts.
- B. Perform Work in accordance with 2018 Building Code of New York State.
- C. Maintain one copy of document on site.

## 1.7 QUALIFICATIONS

- A. Fabricator: Company specializing in performing Work of this section with minimum 5 years documented experience with any of the following current AISC Certification:
  - 1. Standard Steel Building Structures (STD).
  - 2. Conventional Steel Building Structures (SBD).
  - 3. Complex Steel Building Structures (CBD).
- B. Erector: Company specializing in performing Work of this section with minimum 5 years documented experience with any of the following current AISC Certification:
  - 1. Certified Steel Erector (CSE).
  - 2. Advanced Certified Steel Erector (ACSE).
- C. Shop Painter: Company specializing in performing Work of this section with minimum 5 years documented experience with any the following current AISC Certification:
  - 1. Sophisticated Paint Endorsement - Enclosed (P1).
  - 2. Sophisticated Paint Endorsement - Covered (P2).
  - 3. Sophisticated Paint Endorsement - Outside (P3).
- D. Welders and Welding Procedures: AWS D1.1 qualified within previous 12 months.
- E. Professional Engineer Qualifications: Current active registration in New York State with experience with structural steel framing connection design similar to that indicated and shown in the contract drawings.

## PART 2 - PRODUCTS

### 2.1 STRUCTURAL STEEL

- A. Structural W-Shapes: ASTM A992/A992M. ASTM A572/A572M; Grade 50. ASTM A913/A913M; Grade 50.
- B. Structural T-Shapes: Cut from structural W-shapes.
- C. Channels and Angles: ASTM A36/A36M.



- D. Round Hollow Structural Sections: ASTM A500/A500M, Grade B.
- E. Rectangular Hollow Structural Sections: ASTM A500/A500M, Grade B.
- F. Structural Pipe: ASTM A53/A53M, Grade B.
- G. Structural Plates and Bars: ASTM A36/A36M.
- H. Floor Plates: ASTM A786/A786M raised pattern.
- I. Sliding Bearing Plates: Teflon coated.

## 2.2 BOLTS, CONNECTORS, AND ANCHORS

- A. Bolts: Heavy hex, structural type.
  - 1. ASTM A325; Type 1, plain, or hot dipped.
- B. Nuts: ASTM A563; heavy hex type.
  - 1. Finish: Plain or Hot dipped galvanized.
- C. Washers: ASTM F436; Type 1, beveled. Furnish clipped washers where space limitations require.
  - 1. Finish: Plain or Hot dipped galvanized.
- D. Compressible-Washer-Type Direct Tension Indicators: ASTM F959; Type 325.
  - 1. Finish: Mechanically galvanized.
- E. Tension Control Assemblies: ASTM F1852; Type 1, heavy hex head, twist off type; complete with washers and heavy hex nuts.
  - 1. Finish: Unfinished.
- F. Anchor Rods: ASTM F1554; Grade 36.
  - 1. Shape: Hooked or Straight.
  - 2. Plate Washers: ASTM A36/A36M.
- G. Threaded Rods: ASTM A36/A36M.
  - 1. Finish: Hot dipped galvanized.
- H. Forged Structural Steel Hardware:
  - 1. Clevises and Turnbuckles: ASTM A108; Grade 1085.
  - 2. Eye Nuts and Eye Bolts: ASTM A108; Grade 1030.
  - 3. Sleeve Nuts: ASTM A108; Grade 1018.
  - 4. Rod Ends, Yoke Ends and Pins, Cotter Pins, and Coupling Nuts: Carbon steel.
- I. Shear Connectors. ASTM A108; headed, unfinished and in accordance with AWS D1.1; Type B

## 2.3 WELDING MATERIALS

- A. Welding Materials: AWS D1.1; type required for materials being welded.

## 2.4 FABRICATION

- A. Continuously seal joined members by intermittent welds and plastic filler. Continuous welds. Grind exposed welds smooth.
- B. Fabricate connections for bolt, nut, and washer connectors.
- C. Develop required camber for members.

## 2.5 FINISHES

- A. Prepare structural component surfaces in accordance with SSPC SP 3.
- B. Shop prime structural steel members to a dry film thickness not less than 1.5 mils. Do not prime surfaces that will be fireproofed, field welded, in contact with concrete, or high strength bolted.
  - 1. Primer: Fabricator's standard lead, chromate, and asphalt free, rust inhibiting primer compatible with architectural finishes.
- C. Galvanizing: ASTM A123/A123M; hot dip galvanize after fabrication.
- D. Galvanizing for Bolts, Connectors, and Anchors:
  - 1. Hot-Dipped Galvanizing:
    - a. Bolts, Nuts, and Washers: ASTM F2329.
    - b. Connectors and Anchors: ASTM A153/A153M.
  - 2. Mechanical Galvanizing: ASTM B695; Class 50 minimum.

## 2.6 ACCESSORIES

- A. Grout: Non-shrink type, pre-mixed compound consisting of non-metallic aggregate, cement, water reducing and plasticizing additives, capable of developing minimum compressive strength of 7,000 psi at 28 days.
- B. Shop Primer: SSPC Paint 15, Type 1, red oxide.
- C. Touch-Up Primer: Match shop primer.

## 2.7 SOURCE QUALITY CONTROL

- A. Section 01 45 33 - Quality Requirements: Testing and inspection requirements.
- B. Shop test bolted and welded connections as specified for field quality control tests.
- C. When fabricator is approved by Architect, submit certificate of compliance indicating Work performed at fabricator's facility conforms to Contract Documents.
  - 1. Specified shop tests are not required for Work performed by approved fabricator.

## **PART 3 - EXECUTION**

### **3.1 EXAMINATION**

- A. Section 01 70 00 - Execution: Requirements for installation examination.
- B. Verify bearing surfaces are at correct elevation.
- C. Verify anchor rods are set in correct locations and arrangements with correct exposure for steel attachment.

### **3.2 PREPARATION**

- A. Section 01 70 00 - Execution: Requirements for installation preparation.
- B. Furnish templates for installation of anchor rods and embedment in concrete and masonry work.

### **3.3 ERECTION**

- A. Allow for erection loads, and for sufficient temporary bracing to maintain structure safe, plumb, and in alignment until completion of erection and installation of permanent bracing.
- B. Field weld components indicated on shop drawings.
- C. Field connect members with threaded fasteners; tighten to snug tight for bearing type connections.
- D. Do not field cut or alter structural members without approval of Architect/Engineer.
- E. After erection, touch up welds and abrasions to match shop finishes.

### **3.4 GROUT INSTALLATION**

- A. Remove defective concrete, laitance, dirt, oil, grease and other foreign material from concrete surfaces by brushing, hammering, chipping or other similar means until sound, clean concrete surface is achieved.
- B. Rough concrete lightly, but not enough to interfere with placement of grout.
- C. Remove foreign materials from metal surfaces in contact with grout.
- D. Align, level and maintain final positioning of components to be grouted.
- E. Saturate concrete surfaces with clean water; remove excess water, leave none standing.
- F. Shim bearing plates and equipment supports to proper elevation as shown on drawings, snug tighten anchor bolts.
- G. Fill void under bearing surface with grout. Install and pack grout to remove air pockets.
- H. Moist cure grout.

- I. Remove forms after grout is set. Trim grout edges to form smooth surface, splayed 45 degrees.
- J. Tighten anchor bolts after grout has cured for a minimum of 3 days.

### 3.5 TOLERANCES

- A. Section 01 40 00 - Quality Requirements: Tolerances.
- B. Maximum Variation From Plumb: 1/4 inch per story, non-cumulative.
- C. Maximum Offset From Alignment: 1/4 inch.

### 3.6 FIELD QUALITY CONTROL

- A. Section 01 45 33 – Special Inspections: Requirements for inspecting, testing.
- B. Section 01 70 00 - Execution: Requirements for testing, adjusting, and balancing.
- C. Bolted Connections: Inspect in accordance with AISC 303.
  - 1. Visually inspect all bolted connections.
  - 2. For Direct Tension Indicators, comply with requirements of ASTM F959. Verify that gaps are less than gaps specified in Table 2.
- D. Welding: Inspect welds in accordance with AWS D1.1.
  - 1. Certify welders and conduct inspections and tests as required. Record types and locations of defects found in work. Record work required and performed to correct deficiencies.
  - 2. Visually inspect all welds.
  - 3. Ultrasonic Inspection: ASTM E164; perform on all full penetration welds.
  - 4. Liquid Penetrant Inspection: ASTM E165.
  - 5. Magnetic Particle Inspection: ASTM E709.
  - 6. Radiographic Inspection: ASTM E94.
- E. Correct defective bolted connections and welds.

**END OF SECTION**

**SECTION 05 2100  
STEEL JOIST FRAMING**

**PART 1 - GENERAL**

**1.1 SUMMARY**

- A. Section Includes:
  - 1. Open web steel joists, with bridging, attached seats and anchors.
  - 2. Loose bearing plates and anchor bolts for site placement.
- B. Related Requirements:
  - 1. Section 01 4533 – Special Inspections and Testing
  - 2. Section 05 1200 - Structural Steel Framing.
  - 3. Section 05 3100 – Steel Decking.
  - 4. Section 05 4000 – Structural Cold Formed Metal Framing
  - 5. Section 09 9000 – Painting and Coating

**1.2 REFERENCE STANDARDS**

- A. American Institute of Steel Construction:
  - 1. AISC 341 - Seismic Provisions for Structural Steel Buildings.
- B. ASTM International:
  - 1. ASTM A36/A36M - Standard Specification for Carbon Structural Steel.
  - 2. ASTM A108 - Standard Specification for Steel Bar, Carbon and Alloy, Cold-Finished.
  - 3. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products.
  - 4. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
  - 5. ASTM A307 - Standard Specification for Carbon Steel Bolts and Studs, 60 000 PSI Tensile Strength.
  - 6. ASTM A354 - Standard Specification for Quenched and Tempered Alloy Steel Bolts, Studs, and Other Externally Threaded Fasteners.
  - 7. ASTM A449 - Standard Specification for Quenched and Tempered Steel Bolts and Studs.
  - 8. ASTM A563 - Standard Specification for Carbon and Alloy Steel Nuts.
  - 9. ASTM A563M - Standard Specification for Carbon and Alloy Steel Nuts (Metric).
  - 10. ASTM B695 - Standard Specification for Coatings of Zinc Mechanically Deposited on Iron and Steel.
  - 11. ASTM F436 - Standard Specification for Hardened Steel Washers.
  - 12. ASTM F436M - Standard Specification for Hardened Steel Washers (Metric).
  - 13. ASTM F1554 - Standard Specification for Anchor Bolts, Steel, 36, 55, and 105-ksi Yield Strength.
  - 14. ASTM F2329 - Standard Specification for Zinc Coating, Hot-Dip, Requirements for Application to Carbon and Alloy Steel Bolts, Screws, Washers, Nuts, and Special Threaded Fasteners.
- C. American Welding Society:
  - 1. AWS D1.1 - Structural Welding Code - Steel.
- D. Steel Joist Institute:
  - 1. SJI K-1.1 - Standard Specifications for Open Web Steel Joists, K-series.
  - 2. SJI LH/DLH-1.1 - Standard Specifications for Longspan Steel Joists, LH-Series and Deep Longspan Steel Joists, DLH-Series.

3. SJI JG-1.1 - Standard Specification for Joist Girders.

- E. SSPC: The Society for Protective Coatings:
1. SSPC - Steel Structures Painting Manual.
  2. SSPC SP 1 - Solvent Cleaning.
  3. SSPC SP 10 - Near-White Blast Cleaning.

### 1.3 SUBMITTALS

- A. Section 01 30 00 – Administrative Requirements for submittal procedures.
- B. Shop Drawings:
1. Indicate standard designations, configuration, sizes, spacing, locations of joists, and joist leg extensions.
  2. Joist coding, bridging, connections, and attachments.
  3. Connection details.
- C. Manufacturer's Certificate: Certify products meet or exceed specified requirements.
- D. Welders' Certificates: Submit manufacturer's certificates, certifying welders employed on the Work, verifying AWS qualification within previous 12 months.
- E. Mill Test Reports: Furnish 3 copies of certified reports of steel component compliance with the requirements of applicable ASTM specifications.

### 1.4 QUALITY ASSURANCE

- A. Perform Work in accordance with the following:
1. SJI K-1.1, SJI LH/DLH-1.1, SJI JG-1.1, including headers and other supplementary framing.
- B. Perform Work in accordance with the 2018 Uniform Fire Prevention and Building Code of New York State.

### 1.5 QUALIFICATIONS

- A. Fabricator: Company specializing in performing Work of this section with minimum 5 years documented experience and a member of the Steel Joist Institute.
- B. Erector: Company specializing in performing Work of this section with minimum 5 years documented experience.
- C. Design connections not detailed on drawings under direct supervision of Professional Engineer experienced in design of this Work and licensed in State of New York.
- D. Welder's Qualifications: Welding shall be performed only by certified welding operators, and tackers who have been qualified as prescribed in the SJI Specifications to perform the type of welding required.

### 1.6 INSPECTION

- A. Manufacturer's Quality Control Shop Inspection: Insure joist manufacturer's compliance with inspection program provisions of the SJI Specifications.

### 1.7 DELIVERY, STORAGE, AND HANDLING

- A. Section 01 60 01 – Materials and Equipment.

## PART 2 - PRODUCTS

### 2.1 MANUFACTURERS

- A. Manufacturers:
  - 1. Vulcraft; Nucor Vulcraft Group; Charlotte, NC 28211.
  - 2. New Millennium Building Systems, Fort Wayne, IN 46804
  - 3. Substitutions: Refer to General Requirements.

### 2.2 MATERIALS

- A. Open Web Joists Members: SJI K Series.
- B. Bolts: ASTM A325; Type 1 or Type 3, plain; heavy hex, structural type.
- C. Nuts: ASTM A563 heavy hex type.
  - 1. Finish: Unfinished.
- D. Washers: ASTM F436; Type 1, circular.
  - 1. Finish: Unfinished.
- E. Structural Steel for Supplementary Framing and Joist Leg Extensions: ASTM A36.
- F. Welding Materials: AWS D1.1; type required for materials being welded.
- G. Shop Primer: SSPC Paint 15, Type 1, red oxide.
- H. Touch-Up Primer: Match shop primer.
- I. Touch-Up Primer for Galvanized Surfaces: SSPC Paint 20 Type I Inorganic.
- J. Bedding Mortar:
  - 1. Cement Grout: 1 part Portland cement conforming to ASTM C150, Type I or III, to 3 parts natural sand complying with ASTM C404, size No. 2, mixed with minimum amount of water required for placement and hydration. Ratio by volume.
  - 2. Shrink-Resistant Grout: Pre-mixed, factory-packaged, non-catalyzed, ferrous aggregate mortar grouting compound selected from the following:
    - a. Embecco 636 by Master Builders.
    - b. Ferrolith G-NC by Sonneborn.
    - c. Ferr-Grout by L&M Construction Chemicals.
    - d. Vibra-Foil by A.C. Horn.

### 2.3 FABRICATION

- A. Do not fabricate work of this section until receipt of approved shop drawings. When drawings are "Approved as Noted", progress fabrication in conformity with the correction notes thereon and submit revised drawings for formal approval and record.
- B. Furnish joists of sizes indicated on the drawings.
- C. Do not use connection which will interfere with bearing of steel deck on top chords.
- D. Bridging: Horizontal bridging complying with the SJI Specifications.

- E. Holes in Chord Members: Punch or drill approved holes in chord members where required for securing related work to joists. Deduct area of holes from chord area when calculating the strength of the member.
- F. Extended Ends: Furnish extended ends on joists where indicated. Use joist manufacturer's standard method complying with Steel Joist Institute requirements and load tables.
- G. Ceiling Extensions: Furnish ceiling extensions in areas where a ceiling is directly attached to or supported by the joist bottom chord. Extend ends to within one inch of finished wall surface. Use joist manufacturer's standard extension system of sufficient strength to support ceiling system.
- H. Joist Ends: Manufacturer's standard ends complying with the SJI Specifications to suit type of supporting construction indicated, unless otherwise specified or shown.
- I. Anchors: Furnish bearing plates, anchor bolts, and other required devices to be built into masonry and concrete construction. Furnish templates necessary for accurate location of anchors in other work.
  - 1. Furnish unfinished threaded fasteners for anchor bolts unless otherwise indicated.
- J. Header Units: Furnish header units to support tail joists at openings in floor and/or roof system not framed with steel shapes.
- L. Furnish bottom and top chord extensions as indicated on drawings.
- M. Fabricate to achieve end bearing of:
  - 1. 2-1/2 inches on steel.
  - 2. 4 inches on masonry.
- N. Frame special sized openings in joist web framing as detailed.

## 2.4 FINISHES

- A. Prepare joist component surfaces in accordance with SSPC SP 2.
- B. Shop prime joists and supplementary framing members. Do not prime surfaces that will be fireproofed, field welded, or in contact with concrete.
- C. Apply one coat of shop paint, resulting in a continuous dry film thickness of not less than 1.0 mil, to the joists, bridging and accessories.
- D. Leave joists and supplementary framing members unprimed.
- E. Galvanizing: ASTM A123/A123M; hot dip galvanize after fabrication.
- F. Galvanizing for Bolts, Connectors, and Anchors:
  - 1. Hot-Dipped Galvanizing:
    - a. Bolts, Nuts, and Washers: ASTM F2329.
    - b. Connectors and Anchors: ASTM A153/A153M.
  - 2. Mechanical Galvanizing: ASTM B695; Class 50 minimum.

## 2.5 SOURCE QUALITY CONTROL

- A. When fabricator is a member of the Steel Joist Institute, submit certificate of compliance indicating Work performed at fabricator's facility conforms to Contract Documents.
  - 1. Specified shop tests are not required for Work performed by an SJI member fabricator.



## **PART 3 - EXECUTION**

### **3.1 EXAMINATION**

- A. Verify bearing plates are set to required location and elevation.
- B. Verify bearing surfaces are ready to receive joists.

### **3.2 ERECTION**

- A. Erect and bear joists on supports.
- B. Allow for erection loads. Install sufficient temporary bracing to maintain framing safe, plumb, and in alignment.
- C. Coordinate placement of anchors in masonry construction for securing bearing plates.
- D. After joist alignment and installation of framing, field weld joist seat to bearing plates.
- E. Position and field weld joist chord extensions and wall attachments as detailed.
- F. Frame roof openings greater than 12 inches with supplementary framing.
- G. Do not permit erection of decking until joists are braced and secured or until completion of erection and installation of permanent bridging and bracing.
- H. Do not field cut or alter structural members without approval of Architect/Engineer.
- I. After erection, prime welds, abrasions, and surfaces not shop primed [except surfaces to be in contact with concrete.

### **3.3 TOLERANCES**

- A. Section 01 4533 - Quality Requirements: Tolerances.
- B. Maximum Variation From Plumb: 1/4.
- C. Maximum Offset From Alignment: 1/4.

### **3.4 FIELD QUALITY CONTROL**

- A. Section 01 45 33 – Special Inspections and Testing.
- B. Field inspect members, connections, welds, and tightening of high strength bolts in slip-critical connections.

END OF SECTION

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**SECTION 05 3100  
STEEL DECKING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Composite steel floor deck
- B. Acoustical steel roof deck
- C. Steel roof deck

**1.02 RELATED WORK SPECIFIED ELSEWHERE**

- A. Structural Steel Framing - Section 05 1200
- B. Cast-In-Place Concrete - Section 03 3000.
- C. Steel Joist Framing – Section 05 2100
- D. Painting and Coating – Section 09 9000

**1.03 REFERENCES**

- A. Comply with the following reference standards unless otherwise shown or specified:
  - 1. Design: "Specification for the Design of Cold-Formed Steel Structural Members" by the American Iron and Steel Institute (AISI Specification).
  - 2. Welding: "Structural Welding Code - Sheet Steel, AWS D 1.3", by the American Welding Society (AWS Code).
  - 3. Steel Deck Institute (SDI): "Design Manual for Composite Decks, Form Decks, and Roof Decks, Publication 26."
  - 4. ASTM A 611 "Standard Specification for Steel, Carbon, Cold Rolled, Structural Quality."
  - 5. ASTM A 525 "Steel Sheet, Zinc Coated, Galvanized by the Hot Dip Process."

**1.04 SUBMITTALS**

- A. Shop Drawings: Show application to project. Prepare separate drawings, coordinated with, but not superimposed on, joist drawings or structural steel erection drawings. Show plan layout, deck span, support locations, edge of deck location of openings and reinforcing at openings, and attachment requirements.
- B. Product Data: Manufacturer's printed specifications and installation instructions.

**1.05 HANDLING AND STORAGE**

- A. Handle and stack materials carefully in order to prevent deformation or damage. During unloading and hoisting, take extra care to prevent damage to ends and sides of individual metal deck panels. Do not place panels in direct contact with the ground. Protect panels from the elements and keep panels dry.
  - 1. If mud, dirt, or other foreign matter is accumulated on panels, remove such accumulation completely prior to installation.

**1.06 QUALITY ASSURANCE**

- A. Fabricator and erector to submit documentation showing a minimum of 5 years experience with project of similar size and scope. All welders to submit documentation showing current AWS certification.

- B. Deck installation inspection: By Owner's Special Inspector in accordance with Specification Section 01 4533 Special Inspections and Testing.

## **PART 2 PRODUCTS**

### **2.01 MATERIALS**

- A. Fluted Deck and Steel Metal Metal Accessories. Sheet steel conforming to ASTM A 653 SQ Grade 33. Before fabrication, sheet steel shall receive ASTM A 525, Class G 90, hot dip zinc coating; Accessories shall be fabricated of not lighter than 26 US Standard Gage sheet steel. Deck standard of function and quality shall be as manufactured by Nucor Vulcraft Steel Roof & Floor Deck of the type, depth, and gauge shown on the drawings.
1. Steel roof deck for the gymnasium to be 3" 20 gauge acoustical deck; Vulcraft NA.
    - a) Bottom surface of gymnasium deck to be shop primed and field finish coated.
    - b) For the gymnasium acoustic deck, furnish and field install inert, non-organic glass fiber sound absorbing batts within deck flutes.
  2. Exposed composite floor deck and steel roof deck to be shop primed and field finish painted. See notes on floor and roof framing plan for areas to be shop primed.
- B. Self-Drilling Fasteners: No. 12-14 x 3/4 inch, hex washer head, self-drilling fastener with pilot point.
- C. Powder Driven Fasteners: Hilti X-EDN19 or equal.
- D. Touch-up primer for galvanized surfaces: SSPC 20, Type I- Inorganic.
- E. Accessories: Shop fabricated accessories, compatible with steel deck, as required to complete the Work, including, but not limited to, the following:
1. Sheet metal cants beneath flashings when required for roofing over steel deck.
  2. Column closures, end closures, Z closures, and cover plates.
  3. Pour stop at deck edges and openings.

### **2.02 FABRICATION**

- A. Furnish units in lengths to be continuous over 3 spans wherever possible.
- B. Unless otherwise indicated or approved, fabricate deck for predetermined openings, and reinforce where required to maintain deck strength, alignment, and profile.
1. Small openings, as recommended by the deck manufacturer, may be field cut.
- C. Progress shop fabrication from "APPROVED" or "APPROVED AS NOTED" detail drawings only.
1. When detail drawings are "APPROVED AS NOTED", progress fabrication in strict accordance with notes thereon.
  2. Fabrication progressed from "DISAPPROVED" or "RETURNED FOR CORRECTION" detail drawings will be rejected. The contractor shall have no claim against the Owner for any costs or delays due to rejection of items fabricated from "DISAPPROVED" or "RETURNED FOR CORRECTION" detail drawings.

- D. Fabricate deck units to provide a minimum of 2" lap over supports. Provide minimum of 1.5" bearing over steel supports.

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

- A. Examine supporting framing and field conditions for compliance with requirements for installation tolerances and other conditions affecting performance of steel deck.
- B. Do not start installation of metal deck until corresponding steel framework has been plumbed, aligned and completed and until temporary shoring, where required, has been installed.
- C. Steel surfaces to which materials, provided under this Section, are to be welded, shall be free of paint, ice, water, oil, dirt, rust and other materials detrimental to welding.
- D. Locate decking bundles to prevent overloading of supporting members

#### **3.02 INSTALLATION**

- A. Install the Work of this Section in accordance with the manufacturer's printed instructions except where shown or specified otherwise.
  - 1. Welding shall comply with the AWS Code.
  - 2. Perform welding free of sharp points.
- B. Place deck units on supporting steel framework and adjust to final position with ends bearing on supporting members and flutes in straight and true alignment through entire length of run before being permanently fastened. Do not stretch or contract side lap interlocks. Install temporary shoring before placing single span deck panels when required to meet manufacturer's recommendations.
- C. End Bearing: Install deck units over supporting framing with a minimum end bearing of 1-1/2 inches, with end joints as follows:
  - 1. Non-Composite Deck End Joints: Lapped 2 inches minimum.
  - 2. Composite Deck End Joints: Butted.
- D. Deck Fastening: Fasten deck units at perimeter supports with arc spot welds (puddle welds) not less than 3/4 inch diameter, at 6 inches on center, or mechanically fasten. At intermediate supports, fasten deck units with arc spot welds (puddle welds) not less than 3/4 inch diameter, at 12 inches on centers, along the supporting members, or mechanically fasten. Weld/fasten the first and last deck flutes. Use welding washers for all deck lighter than 20 gage.
- E. Side lap fastening: Fasten side laps at intervals not exceeding 24 inches with No. 10 diameter self-drilling carbon steel screws, unless more stringent requirements are indicated on the drawings or required by the fire resistance ratings indicated on the drawings.
- F. Immediately after welding deck and other metal components into position, coat welds, burned areas, and damaged surface coating with touch-up prime paint.

**END OF SECTION**

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**SECTION 05 4000  
COLD-FORMED METAL FRAMING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Formed steel stud exterior wall and interior wall framing.
- B. Formed steel joist and purlin framing and bridging.

**1.02 RELATED REQUIREMENTS**

- A. Section 04 2613 - Masonry Veneer: Veneer masonry supported by wall stud metal framing.
- B. Section 05 3100 - Steel Decking.
- C. Section 06 1000 - Rough Carpentry: Wood blocking and miscellaneous framing.
- D. Section 07 2100 - Thermal Insulation: Insulation within framing members.

**1.03 REFERENCE STANDARDS**

- A. AISI S100 - North American Specification for the Design of Cold-Formed Steel Structural Members 2016, with Supplement (2018).
- B. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware 2016a.
- C. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process 2020.
- D. ASTM C955 - Standard Specification for Cold-Formed Steel Structural Framing Members 2018, with Editorial Revision.
- E. ASTM C1007 - Standard Specification for Installation of Load Bearing (Transverse and Axial) Steel Studs and Related Accessories 2020.
- F. ASTM C1177/C1177M - Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing 2017.
- G. ASTM C1396/C1396M - Standard Specification for Gypsum Board 2017.
- H. AWS B2.1/B2.1M - Specification for Welding Procedure and Performance Qualification 2014 (Amended 2015).
- I. AWS D1.1/D1.1M - Structural Welding Code - Steel 2020, with Errata (2021).
- J. AWS D1.3/D1.3M - Structural Welding Code - Sheet Steel 2018.
- K. PS 1 - Structural Plywood 2009 (Revised 2019).
- L. SSPC-Paint 20 - Zinc-Rich Coating (Type I - Inorganic, and Type II - Organic) 2019.

**1.04 ADMINISTRATIVE REQUIREMENTS**

- A. Coordinate with work of other sections that is to be installed in or adjacent to the metal framing system, including but not limited to structural anchors, cladding anchors, utilities, insulation, and firestopping.

**1.05 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide data on standard framing members; describe materials and finish, product criteria, limitations.
- C. Shop Drawings: Indicate component details, framed openings, bearing, anchorage, loading, welds, and type and location of fasteners, and accessories or items required of related work.
  - 1. Indicate stud and ceiling joist layout.
  - 2. Describe method for securing studs to tracks and for bolted framing connections.
  - 3. Design data:
    - a. Shop drawings signed and sealed by a professional structural engineer.

4. Calculations for loadings and stresses of framing, signed and sealed by a professional structural engineer.
  5. Details and calculations for factory-made framing connectors, signed and sealed by a professional structural engineer.
- D. Manufacturer's Installation Instructions: Indicate special procedures, conditions requiring special attention, and special fastening requirements.

## **1.06 QUALITY ASSURANCE**

- A. Designer Qualifications: Design framing system under direct supervision of a Professional Structural Engineer experienced in design of this work and licensed in the State of New York.
- B. Manufacturer Qualifications: Company specializing in manufacturing the types of products specified in this section, and with minimum 5 years of documented experience.
- C. Installer Qualifications: Company specializing in performing the work of this section with minimum three years documented experience.

## **PART 2 PRODUCTS**

### **2.01 MANUFACTURERS**

- A. Metal Framing:
  1. ClarkDietrich: [www.clarkdietrich.com/#sle](http://www.clarkdietrich.com/#sle).
  2. Marino: [www.marinoware.com/#sle](http://www.marinoware.com/#sle).
  3. The Steel Network, Inc: [www.SteelNetwork.com/#sle](http://www.SteelNetwork.com/#sle).
  4. Substitutions: See Section 01 6000 - Product Requirements.
- B. Framing Connectors and Accessories:
  1. Same manufacturer as metal framing.
  2. Substitutions: See Section 01 6000 - Product Requirements.

### **2.02 FRAMING SYSTEM**

- A. Design Criteria: Provide primary and secondary framing members, bridging, bracing, plates, gussets, clips, fittings, reinforcement, and fastenings as required to provide a complete framing system.
- B. Design Requirements: Provide completed framing system having the following characteristics:
  1. Design: Calculate structural characteristics of cold-formed steel framing members according to AISI S100.
  2. Structural Performance: Design, engineer, fabricate, and erect to withstand specified design loads for project conditions within required limits.
  3. Design Loads: In accordance with applicable codes.
  4. Live load deflection meeting the following, unless otherwise indicated:
    - a. Exterior Walls: Maximum horizontal deflection under wind load of 1/240 of span.
    - b. Design non-axial loadbearing framing to accommodate not less than 1/2 in vertical deflection.
  5. Able to tolerate movement of components without damage, failure of joint seals, undue stress on fasteners, or other detrimental effects when subject to seasonal or cyclic day/night temperature ranges.
  6. Able to accommodate construction tolerances, deflection of building structural members, and clearances of intended openings.
- C. Shop fabricate framing system to the greatest extent possible.
- D. Deliver to project site in largest practical sections.

### **2.03 FRAMING MATERIALS**

- A. Studs and Track: ASTM C955; studs formed to channel with punched web; U-shaped track in matching nominal width and compatible height.
  1. Gauge: Framing components shall be formed from steel conforming to the minimum requirements of ASTM A653, CQ, Grade 33, Class 1, possessing a minimum yield strength of 33,000 psi. SSMA 600SXXX-54 studs are to be grade 50 possessing a



minimum yield strength of 50,000 psi

- a. Exterior Studs: SSMA XXXS162-54 (1-5/8 inch flange, 16 gauge). 16 gauge equivalent studs will not be accepted.
  - b. Interior Load Bearing Studs: SSMA XXXS162-33 (1-5/8 inch flange, 20 gauge). 20 gauge equivalent studs will not be accepted.
  - c. Interior Drywall Partition Studs (Non-Load Bearing): SSMA XXXPDS125-19 (1-1/4 inch flange, 20 gauge).
  - d. Track: Match wall stud gauge or heavier.
2. Stud Depth: As indicated on drawings.
  3. Track: Provide deflection track with minimum 2" flange where wall framing is parallel to structural framing system.
  4. Galvanized in accordance with ASTM A653/A653M, G90/Z275 coating.

#### **2.04 JOISTS AND PURLINS: FABRICATED FROM ASTM A653/A653M STEEL SHEET, WITH G90/Z275 HOT DIPPED GALVANIZED COATING.**

1. Base Metal: Structural Steel (SS), Grade 50/340, Class 1.

B. Gauge and Depth: As indicated on drawings.

#### **2.05 FRAMING CONNECTORS: FACTORY-MADE, FORMED STEEL SHEET.**

- A. Material: ASTM A653/A653M SS Grade 33 and 40 (minimum), with G90/Z275 hot dipped galvanized coating for base metal thickness less than 10 gauge, 0.1345 inch, and factory punched holes and slots.
- B. Structural Performance: Maintain load and movement capacity required by applicable code, when evaluated in accordance with AISI S100.
- C. Fixed Connections: Provide non-movement connections for tie-down to foundation, floor-to-floor tie-down, roof-to-wall tie-down, joist hangers, gusset plates, and stiffeners.
- D. Wall Stud Bridging Connections: Provide mechanical load-transferring devices that accommodate wind load torsion and weak axis buckling induced by axial compression loads. Provide bridging connections where indicated on the drawings.
- E. Products:
  1. ClarkDietrich; Spazzer 5400 Bridging Bar: [www.clarkdietrich.com/#sle](http://www.clarkdietrich.com/#sle).
  2. ClarkDietrich; FastBridge Clip: [www.clarkdietrich.com/#sle](http://www.clarkdietrich.com/#sle).
    - a. Simpson Strong Tie: [www.strongtie.com/#sle](http://www.strongtie.com/#sle).
  3. Substitutions: See Section 01 6000 - Product Requirements.

#### **2.06 FASTENERS**

- A. Self-Drilling, Self-Tapping Screws, Bolts, Nuts and Washers: Hot dip galvanized per ASTM A153/A153M.
- B. Anchorage Devices: Powder actuated.
- C. Welding: Comply with AWS D1.1/D1.1M.

#### **2.07 WALL SHEATHING**

- A. Plywood; PS 1, Grade C-D, Exposure I.
- B. Gypsum board; complying with requirements of ASTM C1396/C1396M for gypsum sheathing, V-shaped long edges, 5/8 inch thick, Type X - Fire Resistant
- C. Glass mat faced gypsum board; ASTM C1177/C1177M, square long edges, 5/8 inch thick, Type X - Fire Resistant.

#### **2.08 ACCESSORIES**

- A. Bracing, Furring, Bridging: Formed sheet steel, thickness determined for conditions encountered; finish to match framing components.
- B. Plates, Gussets, Clips: Formed Sheet Steel, thickness determined for conditions encountered; finish to match framing components.

- C. Touch-Up Primer for Galvanized Surfaces: SSPC-Paint 20 Type I - Inorganic, complying with VOC limitations of authorities having jurisdiction.

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

- A. Verify that substrate surfaces are ready to receive work.
- B. Verify field measurements and adjust installation as required.

#### **3.02 CONNECTIONS**

- A. Welds:
  - 1. Welds are to be of the type, size, and location shown in the Contract Drawings or as approved in the Shop Drawings.
  - 2. Welded connections shall be performed in accordance with the American Welding Society (AWS) Specification for Welding Sheet Steel Structures, D1.3.
  - 3. Welders, welding operations, and welding procedures are to be qualified with AWS D1.3.
  - 4. Welds are to be cleaned and coated with rust inhibitive galvanizing paint.
- B. Screws:
  - 1. Screws are to be self-tapping type, size and locations are to be in compliance with the Contract Drawings or the approved Shop Drawings. Screws are to be DrillFlex Structural Fasteners as manufactured by Elco Industries, Inc or approved equal.
  - 2. Screw penetration through joined material is not to be less than three (3) exposed screw threads.
  - 3. Contractor is to refer to installation instructions published by the screw manufacturer and ASTM C954 for minimum spacing and edge distance, and torque requirements.
- C. Concrete Anchors:
  - 1. Anchor Bolts, Epoxy Bolts, Screw Type Fasteners, and Powder Actuated Fasteners are to be of the type indicated on the Contract Drawings or approved Shop Drawings. Fastener locations are to be as indicated on the Contract Drawings or approved Shop

#### **3.03 INSTALLATION OF STUDS**

- A. Install components in accordance with manufacturers' instructions and ASTM C1007 requirements.
- B. Bottom Track is to rest on a continuous bearing surface. If not provided, set bottom track in high strength non-shrink grout.
- C. Load Bearing Studs are to be installed seated squarely against the web of the top and bottom track to assure transfer of axial load. Studs are to be plumbed, aligned, and secured to the continuous runner track at each end and each side before the installation of components that will induce axial load.
- D. Bridging, as approved in the Shop Drawings are to be installed before loading.
- E. Framed wall openings are to include headers and supporting components as shown in the Contract Drawings and approved Shop Drawings.
- F. Provide sealant to concrete or masonry surfaces prior to anchoring tracks.
- G. Construct corners using minimum of three studs. Install double studs at wall openings, door and window jambs.
- H. Install load-bearing studs full length in one piece. Splicing of studs is not permitted.
- I. Install load-bearing studs, brace, and reinforce to develop full strength and achieve design requirements.
- J. Coordinate placement of insulation in multiple stud spaces made inaccessible after erection.
- K. Install intermediate studs above and below openings to align with wall stud spacing.
- L. Provide deflection allowance in stud track, directly below horizontal building framing at non-load bearing framing.

- M. Attach cross studs to studs for attachment of fixtures anchored to walls.
- N. Install framing between studs for attachment of mechanical and electrical items, and to prevent stud rotation.
- O. Cutting of steel framing is to be by saw, shear, or plasma cutting equipment. Gas torch cutting is not permitted.
- P. Install diagonal flat strap bracing as recommended by the manufacturer.
- Q. Touch-up field welds and damaged galvanized surfaces with primer.

#### **3.04 INSTALLATION OF JOISTS AND PURLINS**

- A. Install framing components in accordance with manufacturer's instructions.
- B. Make provisions for erection stresses. Provide temporary alignment and bracing.
- C. Set floor and ceiling joists parallel and level, with lateral bracing and bridging.
- D. Locate joist end bearing directly over load-bearing studs or provide load distributing member to top of stud track.
- E. Provide web stiffeners at reaction points.
- F. Touch-up field welds and damaged galvanized surfaces with primer.

**END OF SECTION**

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**SECTION 05 5000  
METAL FABRICATIONS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Shop fabricated steel and aluminum items.
- B. Downspout boots.

**1.02 RELATED REQUIREMENTS**

- A. Section 03 3000 - Cast-in-Place Concrete: Placement of metal fabrications in concrete.
- B. Section 03 4100 - Precast Structural Concrete: Placement of metal fabrication in precast structural concrete.
- C. Section 03 4500 - Precast Architectural Concrete: Placement of metal fabrication in precast architectural concrete.
- D. Section 04 2000 - Unit Masonry: Placement of metal fabrications in masonry.
- E. Section 04 2613 - Masonry Veneer: Placement of metal fabrications in masonry.
- F. Section 05 1200 - Structural Steel Framing: Structural steel column anchor bolts.
- G. Section 05 2100 - Steel Joist Framing: Structural joist bearing plates, including anchorage.
- H. Section 05 3100 - Steel Decking: Bearing plates for metal deck bearing, including anchorage.
- I. Section 05 5100 - Metal Stairs.
- J. Section 05 5133 - Metal Ladders.
- K. Section 05 5213 - Pipe and Tube Railings.
- L. Section 09 9113 - Exterior Painting: Paint finish.
- M. Section 09 9123 - Interior Painting: Paint finish.

**1.03 REFERENCE STANDARDS**

- A. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum 2020.
- B. ASTM A276/A276M - Standard Specification for Stainless Steel Bars and Shapes 2017.
- C. ASTM A36/A36M - Standard Specification for Carbon Structural Steel 2019.
- D. ASTM A48/A48M - Standard Specification for Gray Iron Castings 2003 (Reapproved 2021).
- E. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless 2020.
- F. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products 2017.
- G. ASTM A283/A283M - Standard Specification for Low and Intermediate Tensile Strength Carbon Steel Plates 2018.
- H. ASTM A307 - Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60 000 PSI Tensile Strength 2021.
- I. ASTM A500/A500M - Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes 2021a.
- J. ASTM A554 - Standard Specification for Welded Stainless Steel Mechanical Tubing 2021.
- K. ASTM A1011/A1011M - Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength 2018a.
- L. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar 2015.
- M. ASTM B210/B210M - Standard Specification for Aluminum and Aluminum-Alloy Drawn Seamless Tubes 2019a.

- N. ASTM B211/B211M - Standard Specification for Aluminum and Aluminum-Alloy Rolled or Cold Finished Bar, Rod, and Wire 2019.
- O. ASTM B26/B26M - Standard Specification for Aluminum-Alloy Sand Castings 2018, with Editorial Revision.
- P. ASTM B85/B85M - Standard Specification for Aluminum-Alloy Die Castings 2018, with Editorial Revision.
- Q. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes 2021.
- R. ASTM F3125/F3125M - Standard Specification for High Strength Structural Bolts and Assemblies, Steel and Alloy Steel, Heat Treated, Inch Dimensions 120 ksi and 150 ksi Minimum Tensile Strength, and Metric Dimensions 830 MPa and 1040 MPa Minimum Tensile Strength 2021.
- S. AWS A2.4 - Standard Symbols for Welding, Brazing, and Nondestructive Examination 2020.
- T. AWS D1.1/D1.1M - Structural Welding Code - Steel 2020, with Errata (2021).
- U. AWS D1.2/D1.2M - Structural Welding Code - Aluminum 2014, with Errata 2020.
- V. SSPC-Paint 15 - Steel Joist Shop Primer/Metal Building Primer 1999 (Ed. 2004).
- W. SSPC-Paint 20 - Zinc-Rich Coating (Type I - Inorganic, and Type II - Organic) 2019.
- X. SSPC-SP 2 - Hand Tool Cleaning 2018.

#### **1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Indicate profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners, and accessories. Include erection drawings, elevations, and details where applicable.
  - 1. Indicate welded connections using standard AWS A2.4 welding symbols. Indicate net weld lengths.

### **PART 2 PRODUCTS**

#### **2.01 MATERIALS - STEEL**

- A. Steel Sections (W Shapes): ASTM A992.
- B. Steel Tubing: ASTM A500/A500M Grade B cold-formed structural tubing.
- C. Plates: ASTM A283/A283M.
- D. Pipe: ASTM A53/A53M, Grade B Schedule 40, black finish.
- E. Stainless Steel, General: ASTM A666, Type 304.
- F. Stainless Steel Tubing: ASTM A554, Type 304, 16 gauge, 0.0625 inch minimum metal thickness, 1-1/2 inch diameter.
- G. Stainless Steel Bars, Shapes and Moldings: ASTM A276/A276M, Type 304.
- H. Mechanical Fasteners: Same material as or compatible with materials being fastened; type consistent with design and specified quality level.
- I. Bolts, Nuts, and Washers: ASTM A307, Grade A, plain.
- J. Bolts, Nuts, and Washers: ASTM F3125/F3125M, Type 1, plain.
- K. Welding Materials: AWS D1.1/D1.1M; type required for materials being welded.
- L. Shop and Touch-Up Primer: SSPC-Paint 15, complying with VOC limitations of authorities having jurisdiction.
- M. Touch-Up Primer for Galvanized Surfaces: SSPC-Paint 20, Type I - Inorganic, complying with VOC limitations of authorities having jurisdiction.

## **2.02 MATERIALS - ALUMINUM**

- A. Extruded Aluminum: ASTM B221 (ASTM B221M), 6063 alloy, T6 temper.
- B. Aluminum-Alloy Drawn Seamless Tubes: ASTM B210/B210M, 6063 alloy, T6 temper.
- C. Aluminum-Alloy Bars: ASTM B211/B211M, 6061 alloy, T6 temper.
- D. Aluminum-Alloy Sand Castings: ASTM B26/B26M.
- E. Aluminum-Alloy Die Castings: ASTM B85/B85M.
- F. Bolts, Nuts, and Washers: Stainless steel.
- G. Welding Materials: AWS D1.2/D1.2M; type required for materials being welded.

## **2.03 FABRICATION**

- A. Fit and shop assemble items in largest practical sections, for delivery to site.
- B. Fabricate items with joints tightly fitted and secured.
- C. Continuously seal joined members by intermittent welds and plastic filler.
- D. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.
- E. Exposed Mechanical Fastenings: Flush countersunk screws or bolts; unobtrusively located; consistent with design of component, except where specifically noted otherwise.
- F. Supply components required for anchorage of fabrications. Fabricate anchors and related components of same material and finish as fabrication, except where specifically noted otherwise.

## **2.04 FABRICATED ITEMS**

- A. Bollards: Steel pipe, concrete filled, crowned cap, as detailed; prime paint finish.
- B. Joist Hangers: Strap anchors, fabricated with sheet steel, 18 gauge, 0.0478 inch minimum base metal thickness; galvanized finish.
- C. Ledge Angles, Shelf Angles, Channels, and Plates Not Attached to Structural Framing: For support of metal decking; prime paint finish.
- D. Lintels: As detailed; prime paint finish.
- E. Sill Angles for Tempered Glass Railing Assemblies: ASTM A36/A36M steel angles with anchoring devices and sizes as indicated in shop drawings for railing assembly, drilled and tapped for fastener types, sizes, and spacing indicated, prime paint finish.

## **2.05 METAL DOWNSPOUT BOOTS**

- A. Downspout Boots: Smooth interior without boxed corners or choke points; include integral lug slots, integral cleanout, cleanout cover, and tamper proof fasteners.
  - 1. Configuration: Angular.
  - 2. Material: Cast iron; ASTM A48/A48M; casting thickness 3/8 inch (9.5 mm), minimum.

## **2.06 FINISHES - STEEL**

- A. Prime paint steel items.
  - 1. Exceptions: Galvanize .
  - 2. Exceptions: Do not prime surfaces in direct contact with concrete, where field welding is required, and items to be covered with sprayed fireproofing.
- B. Prepare surfaces to be primed in accordance with SSPC-SP2.
- C. Clean surfaces of rust, scale, grease, and foreign matter prior to finishing.
- D. Prime Painting: Two coats.
- E. Galvanizing of Structural Steel Members: Galvanize after fabrication to ASTM A123/A123M requirements. Provide minimum 1.7 oz/sq ft galvanized coating.

- F. Galvanizing of Non-structural Items: Galvanize after fabrication to ASTM A123/A123M requirements.
- G. Stainless Steel Finish: No. 4 Bright Polished finish.

## **2.07 FINISHES - ALUMINUM**

- A. Exterior Aluminum Surfaces: Class I color anodized.
- B. Interior Aluminum Surfaces: Class I natural anodized.
- C. Class I Natural Anodized Finish: AAMA 611 AA-M12C22A41 Clear anodic coating not less than 0.7 mils thick.

## **2.08 FABRICATION TOLERANCES**

- A. Squareness: 1/8 inch maximum difference in diagonal measurements.
- B. Maximum Offset Between Faces: 1/16 inch.
- C. Maximum Misalignment of Adjacent Members: 1/16 inch.
- D. Maximum Bow: 1/8 inch in 48 inches.
- E. Maximum Deviation From Plane: 1/16 inch in 48 inches.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that field conditions are acceptable and are ready to receive work.

### **3.02 PREPARATION**

- A. Clean and strip primed steel items to bare metal where site welding is required.
- B. Supply setting templates to the appropriate entities for steel items required to be cast into concrete or embedded in masonry.

### **3.03 INSTALLATION**

- A. Install items plumb and level, accurately fitted, free from distortion or defects.
- B. Provide for erection loads, and for sufficient temporary bracing to maintain true alignment until completion of erection and installation of permanent attachments.
- C. Field weld components as indicated on drawings.
- D. Perform field welding in accordance with AWS D1.1/D1.1M.
- E. Obtain approval prior to site cutting or making adjustments not scheduled.
- F. After erection, prime welds, abrasions, and surfaces not shop primed , except surfaces to be in contact with concrete.

### **3.04 TOLERANCES**

- A. Maximum Variation From Plumb: 1/4 inch per story, non-cumulative.
- B. Maximum Offset From True Alignment: 1/4 inch.
- C. Maximum Out-of-Position: 1/4 inch.

**END OF SECTION**



**SECTION 05 5100  
METAL STAIRS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Stairs with concrete treads.
- B. Structural steel stair framing and supports.
- C. Handrails and guards.
- D. Prefabricated stair treads and nosings.

**1.02 RELATED REQUIREMENTS**

- A. Section 03 3000 - Cast-in-Place Concrete: Concrete fill in stair pans; mesh reinforcement for landings.
- B. Section 03 3000 - Cast-in-Place Concrete: Placement of metal anchors in concrete.
- C. Section 04 2000 - Unit Masonry: Placement of metal fabrications in masonry.
- D. Section 09 9123 - Interior Painting: Paint finish.

**1.03 REFERENCE STANDARDS**

- A. ADA Standards - Americans with Disabilities Act (ADA) Standards for Accessible Design 2010.
- B. AISC 201 - AISC Certification Program for Structural Steel Fabricators, Standard for Steel Building Structures 2006.
- C. AWS A2.4 - Standard Symbols for Welding, Brazing, and Nondestructive Examination 2020.
- D. AWS D1.1/D1.1M - Structural Welding Code - Steel 2020, with Errata (2021).
- E. SSPC-Paint 15 - Steel Joist Shop Primer/Metal Building Primer 1999 (Ed. 2004).
- F. SSPC-SP 2 - Hand Tool Cleaning 2018.
- G. UL 1994 - Luminous Egress Path Marking Systems Current Edition, Including All Revisions.

**1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Indicate profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners, and accessories.
  - 1. Indicate welded connections using standard AWS A2.4 welding symbols. Indicate net weld lengths.
  - 2. Include the design engineer's seal and signature on each sheet of shop drawings.
- C. Welders' Certificates.
- D. Designer's Qualification Statement.
- E. Fabricator's Qualification Statement: Provide documentation showing steel fabricator is certified under AISC 201.

**1.05 QUALITY ASSURANCE**

- A. Structural Designer Qualifications: Professional Structural Engineer experienced in design of this work and licensed in the State in which the Project is located, or personnel under direct supervision of such an engineer.
- B. Welder Qualifications: Show certification of welders employed on the Work, verifying AWS qualification within the previous 12 months.
- C. Fabricator Qualifications:
  - 1. A qualified steel fabricator that is certified by the American Institute for Steel Construction (AISC) under AISC 201.
  - 2. A company specializing in manufacturing products specified in this section, with not less than ten years of documented experience.

## **PART 2 PRODUCTS**

### **2.01 METAL STAIRS - GENERAL**

- A. Metal Stairs: Provide stairs of the design specified, complete with landing platforms, vertical and horizontal supports, railings, and guards, fabricated accurately for anchorage to each other and to building structure.
  - 1. Regulatory Requirements: Provide stairs and railings that comply with most stringent requirements of local, state, and federal regulations; where requirements of Contract Documents exceed those of regulations, comply with Contract Documents.
  - 2. Handrails: Comply with applicable accessibility requirements of ADA Standards.
  - 3. Structural Design: Provide complete stair and railing assemblies that comply with the 2020 Building Code of New York State .
  - 4. Dimensions: As indicated on drawings.
  - 5. Shop assemble components; disassemble into largest practical sections suitable for transport and access to site.
  - 6. No sharp or rough areas on exposed travel surfaces and surfaces accessible to touch.
  - 7. Separate dissimilar metals using paint or permanent tape.
- B. Metal Jointing and Finish Quality Levels:
  - 1. Architectural: All joints as inconspicuous as possible, whether welded or mechanical.
    - a. Welded Joints: Continuously welded and ground smooth and flush.
    - b. Mechanical Joints: Butted tight, flush, and hairline; concealed fastenings only.
    - c. Exposed Edges and Corners: Eased to small uniform radius.
    - d. Metal Surfaces to be Painted: Sanded or ground smooth, suitable for highest quality gloss finish.
- C. Fasteners: Same material or compatible with materials being fastened; type consistent with design and specified quality level.
- D. Anchors and Related Components: Same material and finish as item to be anchored, except where specifically indicated otherwise; provide all anchors and fasteners required.

### **2.02 METAL STAIRS WITH CONCRETE TREADS**

- A. Jointing and Finish Quality Level: Architectural, as defined above.
- B. Risers: Closed.
- C. Treads: Metal pan with field-installed concrete fill.
  - 1. Concrete Depth: 1-1/2 inches, minimum.
  - 2. Tread Pan Material: Steel sheet.
  - 3. Tread Pan Thickness: As required by design; 14 gauge, 0.075 inch minimum.
  - 4. Concrete Reinforcement: Welded wire mesh.
  - 5. Concrete Finish: For resilient floor covering.
- D. Risers: Same material and thickness as tread pans.
  - 1. Riser/Nosing Profile: Sloped riser with rounded nosing of minimum radius.
  - 2. Nosing Depth: Not more than 1 inch overhang.
  - 3. Nosing Return: Flush with top of concrete fill, not more than 1/2 inch wide.
- E. Stringers: Rolled steel channels.
  - 1. Stringer Depth: 10 inches.
  - 2. End Closure: Sheet steel of same thickness as risers welded across ends.
- F. Railings: Steel pipe railings.
- G. Finish: Shop- or factory-prime painted.
- H. Under Side of Stair: Exposed to view, to be finished same as specified for other exposed to view surfaces.

### **2.03 HANDRAILS AND GUARDS**

- A. Refer to Specification Section 05 5213.

- B. Guards:
  - 1. End and Intermediate Posts: Same material and size as top rails.
    - a. Horizontal Spacing: As indicated on drawings.

## **2.04 ACCESSORIES**

- A. Integral vinyl treads and riser: Formed vinyl tread and risers with textured edge warning strip.
  - 1. Color: To be selected by Architect from manufacturer's full range.
  - 2. Attachment: Provide manufacturer approved field applied adhesive.
  - 3. Integral textured edge strip at nose of each tread, min. 2" wide.
- B. Welding Materials: AWS D1.1/D1.1M; type required for materials being welded.
- C. Shop and Touch-Up Primer: SSPC-Paint 15, and comply with VOC limitations of authorities having jurisdiction.

## **2.05 SHOP FINISHING**

- A. Clean surfaces of rust, scale, grease, and foreign matter prior to finishing.
- B. Do not prime surfaces in direct contact with concrete or where field welding is required.
- C. Prime Painting: Use specified shop- and touch-up primer.
  - 1. Preparation of Steel: In accordance with SSPC-SP 2 Hand Tool Cleaning.
  - 2. Number of Coats: One.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that field conditions are acceptable and are ready to receive work.
- B. Field Measurements: Field verify floor to floor and horizontal dimensions of spaces where stairs will be installed prior to fabrication of stairs.
- C. Discrepancies: In the event of a discrepancy, notify the Architect/Engineer/Construction Manager. Do not proceed with the fabrication/installation in areas of discrepancies until such discrepancies have been resolved.

### **3.02 PREPARATION**

- A. When field welding is required, clean and strip primed steel items to bare metal.
- B. Supply items required to be cast into concrete and embedded in masonry with setting templates.

### **3.03 INSTALLATION**

- A. Install components plumb and level, accurately fitted, free from distortion or defects.
- B. Provide anchors, plates, angles, hangers, and struts required for connecting stairs to structure.
- C. Allow for erection loads, and for sufficient temporary bracing to maintain true alignment until completion of erection and installation of permanent attachments.
- D. Provide welded field joints where specifically indicated on shop drawings. Perform field welding in accordance with AWS D1.1/D1.1M.
- E. Other field joints may be either welded or bolted provided the result complies with the limitations specified for jointing quality levels.
- F. Obtain approval prior to site cutting or creating adjustments not scheduled.
- G. After erection, prime welds, abrasions, and surfaces not shop primed, except surfaces to be in contact with concrete.

### **3.04 TOLERANCES**

- A. Maximum Variation From Plumb: 1/4 inch per story, non-cumulative.
- B. Maximum Offset From True Alignment: 1/4 inch.

## **END OF SECTION**

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**SECTION 05 5213  
PIPE AND TUBE RAILINGS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Free-standing railings at steps and ramps.
- B. Cupola- aluminum railings. (Alternate GC-3).

**1.02 RELATED REQUIREMENTS**

- A. Section 03 3000 - Cast-in-Place Concrete: Placement of anchors in concrete.
- B. Section 04 2000 - Unit Masonry: Placement of anchors in masonry.
- C. Section 05 5100 - Metal Stairs: Handrails other than those specified in this section.
- D. Section 06 1000 - Rough Carpentry: Wood blocking for anchoring railings.
- E. Section 09 9113 - Exterior Painting: Paint finish.

**1.03 REFERENCE STANDARDS**

- A. AAMA 2604 - Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix) 2017a.
- B. ADA Standards - Americans with Disabilities Act (ADA) Standards for Accessible Design 2010.
- C. AISC 201 - AISC Certification Program for Structural Steel Fabricators, Standard for Steel Building Structures 2006.
- D. ANSI 117 - Standard Specification for Structural Glued Laminated Timber of Softwood Species 2020.
- E. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless 2020.
- F. ASTM A500/A500M - Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes 2021a.
- G. ASTM B241/B241M - Standard Specification for Aluminum and Aluminum-Alloy Seamless Pipe and Seamless Extruded Tube 2016.
- H. ASTM B429/B429M - Standard Specification for Aluminum-Alloy Extruded Structural Pipe and Tube 2020.
- I. ASTM B483/B483M - Standard Specification for Aluminum and Aluminum-Alloy Drawn Tube and Drawn Pipe for General Purpose Applications 2021.
- J. ICC (IBC)-2021 - International Building Code 2021.

**1.04 SUBMITTALS**

- A. See Section 01 3300, for submittal procedures.
- B. Shop Drawings: Indicate profiles, sizes, connection attachments, anchorage, size and type of fasteners, and accessories.
- C. Welder's Qualifications Statement.
- D. Fabricator's Qualification Statement.

**1.05 QUALITY ASSURANCE**

- A. Structural Designer Qualifications: Professional Structural Engineer experienced in design of this work and licensed in the State in which the Project is located, or personnel under direct supervision of such an engineer.
- B. Welder Qualifications: Show certification of welders employed on the Work, verifying AWS qualification within the previous 12 months.
- C. Fabricator Qualifications:

1. A qualified steel fabricator that is certified by the American Institute for Steel Construction (AISC) under AISC 201.

## **PART 2 PRODUCTS**

### **2.01 MANUFACTURERS**

- A. Handrails and Railings:
  1. Alumi-Guard: [www.alumi-guard.com/#sle](http://www.alumi-guard.com/#sle).
  2. Superior Aluminum Products, Inc; Series 500: [www.superioraluminum.com/#sle](http://www.superioraluminum.com/#sle).
  3. The Wagner Companies; [ ]: [www.wagnercompanies.com/#sle](http://www.wagnercompanies.com/#sle).
  4. Substitutions: See Section 01 6000 - Product Requirements.

### **2.02 RAILINGS - GENERAL REQUIREMENTS**

- A. Design, fabricate, and test railing assemblies in accordance with the most stringent requirements of applicable local code.
- B. Allow for expansion and contraction of members and building movement without damage to connections or members.
- C. Dimensions: See drawings for configurations and heights.
  1. Top Rails and Wall Rails: 1-1/2 inches diameter, round.
  2. Intermediate Rails: 1-1/2 inches diameter, round.
  3. Posts: 1-1/2 inches diameter, round.
- D. Provide anchors and other components as required to attach to structure, made of same materials as railing components unless otherwise indicated; where exposed fasteners are unavoidable provide flush countersunk fasteners.
  1. For anchorage to concrete, provide inserts to be cast into concrete, for bolting anchors.
  2. For anchorage to masonry, provide brackets to be embedded in masonry, for bolting anchors.
  3. Posts: Provide adjustable flanged brackets.
- E. Provide welding fittings to join lengths, seal open ends, and conceal exposed mounting bolts and nuts, including but not limited to elbows, T-shapes, splice connectors, flanges, escutcheons, and wall brackets.
- F. Thermal Movements: Allow for thermal movements from ambient and surface temperature changes acting on exterior metal fabrications by preventing buckling, opening of joints, overstressing of components, failure of connections, and other detrimental effects.
  1. Temperature Change: 120 degree F, ambient; 180 degree F, material surfaces.
- G. Control of Corrosion: Prevent galvanic action and other forms of corrosion by insulating metals and other materials from direct contact with incompatible materials.

### **2.03 ALUMINUM MATERIALS**

- A. Aluminum Tube: Minimum wall thickness of 0.127 inch; ASTM B429/B429M, ASTM B241/B241M, or ASTM B483/B483M.
- B. Welding Fittings: No exposed fasteners; cast aluminum.

### **2.04 STEEL RAILING SYSTEM**

- A. Steel Tube: ASTM A500/A500M Grade B cold-formed structural tubing.
- B. Steel Pipe: ASTM A53/A53M Grade B Schedule 80, black finish.
- C. Welding Fittings: Factory- or shop-welded from matching pipe or tube; seams continuously welded; joints and seams ground smooth.

### **2.05 FABRICATION**

- A. Accurately form components to suit specific project conditions and for proper connection to building structure.
- B. Fabricate railings to comply with requirements indicated for design, dimensions, member sizes and spacing, details, finish, and anchorage, but not less than that required to support structural

loads.

- C. Fit and shop assemble components in largest practical sizes for delivery to site.
- D. Fabricate components with joints tightly fitted and secured. Provide spigots and sleeves to accommodate site assembly and installation.
- E. Welded Joints:
  - 1. Exterior Components: Continuously seal joined pieces by intermittent welds and plastic filler. Drill condensate drainage holes at bottom of members at locations that will not encourage water intrusion.
  - 2. Interior Components: Continuously seal joined pieces by intermittent welds and plastic filler.
  - 3. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.
- F. Handrails shall return to wall, guard or the walking surface or shall be continuous to the handrail of the adjacent flight of stairs or ramp run.
- G. Where handrails are not continuous between flights, the handrails shall extend horizontally not less than 12" beyond the top riser and continue to slope for the depth of one tread minimum beyond the bottom riser.
- H. At ramps where handrails are not continuous, between runs, the handrail shall extend horizontally above the landing 12" minimum beyond the top and bottom of ramp runs.
- I. The extensions of handrails shall be in the same direction as the flights of stairs at stairways and the ramp runs at ramps.
- J. Comply with ICC ANSI.117.12009, ADA 2010 and NYS 2020IBC.
- K. Handrails and guards shall be designed to resist a linear load of 50 lbs. per lineal foot, and a concentrated load of 200 pounds. Intermediate rails, ballusters, and panel fillers shall be designed to resist a concentrated load of 50 lbs.

## **2.06 ALUMINUM FINISHES**

- A. High Performance Organic Coating System: AAMA 2604 multiple coat, thermally cured fluoropolymer system.
- B. Color: To be selected by Architect from manufacturer's full line.
- C. Touch-Up Materials: As recommended by coating manufacturer for field application.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that field conditions are acceptable and are ready to receive work.
- B. Examine plaster and gypsum board assemblies, where reinforced to receive anchors, to verify that locations of concealed reinforcements have been clearly marked for installer. Locate reinforcements and mark locations if not already done.

### **3.02 PREPARATION**

- A. Apply one coat of bituminous paint to concealed aluminum surfaces that will be in contact with cementitious or dissimilar materials.

### **3.03 INSTALLATION**

- A. Install in accordance with manufacturer's instructions.
- B. Install components plumb and level, accurately fitted, free from distortion or defects, with tight joints.
- C. Anchor railings securely to structure and capable of withstanding design loads.
- D. Conceal anchor bolts and screws whenever possible. Where not concealed, use flush countersunk fastenings.

### **3.04 TOLERANCES**

- A. Maximum Variation From Plumb: 1/4 inch per floor level, non-cumulative.
- B. Maximum Offset From True Alignment: 1/4 inch.
- C. Maximum Out-of-Position: 1/4 inch.

**END OF SECTION**



**SECTION 05 7500  
DECORATIVE FORMED METAL**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Interior fabrications made of formed metal sheet, secondary supports, and anchors to structure, including:
  - 1. Factory fabricated column covers.

**1.02 RELATED REQUIREMENTS**

- A. Section 05 5000 - Metal Fabrications: Non-decorative metal fabrications.

**1.03 REFERENCE STANDARDS**

- A. ASTM A36/A36M - Standard Specification for Carbon Structural Steel 2019.
- B. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products 2017.
- C. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware 2016a.
- D. ASTM A276/A276M - Standard Specification for Stainless Steel Bars and Shapes 2017.
- E. ASTM A449 - Standard Specification for Hex Cap Screws, Bolts and Studs, Steel, Heat Treated, 120/105/90 ksi Minimum Tensile Strength, General Use 2014 (Reapproved 2020).
- F. ASTM A480/A480M - Standard Specification for General Requirements for Flat-Rolled Stainless and Heat-Resisting Steel Plate, Sheet, and Strip 2020a.
- G. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar 2015.
- H. ASTM B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate 2014.
- I. ASTM B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate (Metric) 2014.
- J. ASTM B209/B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate 2021.
- K. ASTM B633 - Standard Specification for Electrodeposited Coatings of Zinc on Iron and Steel 2019.
- L. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2021a.
- M. ASTM E488/E488M - Standard Test Methods for Strength of Anchors in Concrete Elements 2018.
- N. ASTM F593 - Standard Specification for Stainless Steel Bolts, Hex Cap Screws, and Studs 2017.
- O. ASTM F594 - Standard Specification for Stainless Steel Nuts 2009 (Reapproved 2020).
- P. ASTM F1941/F1941M - Standard Specification for Electrodeposited Coatings on Mechanical Fasteners, Inch and Metric 2016.
- Q. NAAMM AMP 500-06 - Metal Finishes Manual 2006.

**1.04 SUBMITTALS**

- A. See Section 01 3300-Administrative Requirements, for submittal procedures.
- B. Product Data - Sheet Metal Material: Manufacturer's data sheets on each product to be used, including:
  - 1. Preparation instructions and recommendations.
  - 2. Storage and handling requirements and recommendations.
  - 3. Installation methods.
  - 4. Specimen warranty.

- C. Shop Drawings: Show layout and elevations, dimensions and thickness of panels, connections, details and location of joints, sealants and gaskets, method of anchorage, number of anchors, supports, reinforcement, trim, flashings, and accessories.
  - 1. Differentiate between shop and field fabrication.
  - 2. Indicate substrates and adjacent work with which the fabrications must be coordinated.
  - 3. Include large-scale details of anchorages and connecting elements.
  - 4. Include large-scale details or schematic, exploded or isometric diagrams to fully explain flashing.
- D. Verification Samples: For each finish product specified, minimum size 12 inches square, representing actual product in color and texture.
- E. Fabricator's Qualification Statement.
- F. Maintenance Data: Care of finishes and warranty requirements.

### **1.05 QUALITY ASSURANCE**

- A. Fabricator Qualifications: Company specializing in fabricating products specified in this section.
  - 1. With not less than three years of documented experience.
- B. Mock-Up: Provide a mock-up for evaluation of fabrication workmanship.
  - 1. Locate where directed.
  - 2. Provide products finished as specified.
  - 3. Mock-up may remain as part of the Work.

### **1.06 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver products in manufacturer's original, unopened, undamaged containers with identification labels intact.
  - 1. Protect finishes by applying heavy duty removable plastic film during production.
  - 2. Package for protection against transportation damage.
  - 3. Provide markings to identify components consistently with drawings.
  - 4. Exercise care in unloading, storing and installing panels to prevent bending, warping, twisting and surface damage.
- B. Store products protected from exposure to harmful weather conditions and at temperature conditions recommended by manufacturer.
  - 1. Store in well-ventilated space out of direct sunlight.
  - 2. Protect from moisture and condensation with tarpaulins or other suitable weathertight covering installed to provide ventilation.
  - 3. Store at a slope to ensure positive drainage of accumulated water.
  - 4. Do not store in enclosed space where ambient temperature can exceed 120 degrees F.
  - 5. Avoid contact with other materials that might cause staining, denting, or other surface damage.

### **1.07 WARRANTY**

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.

## **PART 2 PRODUCTS**

### **2.01 MANUFACTURERS**

- A. Factory Fabricated Column Covers:
  - 1. Basis of Design: SAF Metal Fabrication, a division of Southern Aluminum Finishing Company, Inc: [www.saf.com/#sle](http://www.saf.com/#sle).
  - 2. Substitutions: See Section 01 6000 - Product Requirements.

### **2.02 FACTORY FABRICATED COLUMN COVERS**

- A. Factory Fabricated Column Covers: Factory fabricated and factory finished, sheet metal column covers, mechanically fastened to structural support.
  - 1. Material: Aluminum sheet, ASTM B209/B209M alloy 3003 or 5005.
  - 2. Sheet Thickness: 0.125 inch, minimum.

3. Column Section Length: 12 feet, maximum, between horizontal joints.
4. Fasteners: Self-drilling; ASTM A449 heat treated steel, with manufacturer's standard corrosion resistant coating.
5. Stainless Steel Finish: Manufacturer's standard No.4 brushed mechanical finish.
6. Color: To be selected by Architect from manufacturer's standard range.
7. Manufacturers:
  - a. SAF Metal Fabrication- Series M-1000; a division of Southern Aluminum Finishing Company, Inc: [www.saf.com/#sle](http://www.saf.com/#sle).
  - b. Substitutions: See Section 01 6000 - Product Requirements.

## **2.03 MATERIALS**

- A. General: Provide sheet metal without pitting, seam marks, roller marks, stains, discolorations, or other imperfections exposed to view on finished units.
- B. Aluminum Sheet: ASTM B209/B209M, 5005-H32 minimum; alloy and temper recommended by aluminum producer and finisher for use and finish indicated.
- C. Anchors, Clips and Accessories: Use one of the following:
  1. Stainless steel complying with ASTM A276/A276M, ASTM A480/A480M, or ASTM A666.
  2. Steel complying with ASTM A36/A36M and hot-dipped galvanized to ASTM A153/A153M.
  3. Steel complying with ASTM A36/A36M and hot-dipped galvanized to ASTM A123/A123M Coating Grade 35.
  4. Interior Locations: Carbon steel; zinc coated in accordance with ASTM B633 or ASTM F1941/F1941M Class Fe/Zn 5.
  5. Exterior Locations or in Contact with Stainless Steel:
    - a. Bolts: Stainless steel; ASTM F593, Group 1 (A1).
    - b. Nuts: Stainless steel; ASTM F594.
  6. Structural Anchors: Provide anchors where work is indicated to comply with design loads.
    - a. Type: Provide chemical or torque-controlled expansion anchors.
    - b. Capacity: When tested according to ASTM E488/E488M; four times the load imposed when installed in concrete.
  7. Nonstructural Anchors: Provide powder-actuated fasteners where work is not indicated to comply with design loads. Provide size and number required for load, installation, and as recommended by manufacturer, unless indicated otherwise.

## **2.04 FINISHES**

- A. Finishes, General: Comply with NAAMM AMP 500-06.
  1. Complete mechanical finishes before fabrication. After fabrication, finish joints, bends, abrasions and surface blemishes to match sheet.
  2. Protect mechanical finishes on exposed surfaces from damage.
  3. Apply organic and anodic finishes to formed metal after fabrication unless otherwise indicated.
  4. Appearance: Limit variations in appearance of adjacent pieces to one-half of range represented in approved samples. Noticeable variations in same piece are not acceptable. Install components within range of approved samples to minimize contrast.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify dimensions, tolerances, and interfaces with other work.
- B. Verify substrate on-site to determine that conditions are acceptable for product installation in accordance with manufacturer's written instructions.
- C. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
- D. Notify Architect in writing of conditions detrimental to proper and timely completion of work. Do not proceed with erection until unsatisfactory conditions have been corrected.

### **3.02 PREPARATION**

- A. Protect adjacent work areas and finish surfaces from damage during installation.
- B. Deliver anchorage items to be cast into concrete or built into masonry to appropriate installer(s) together with setting templates.

### **3.03 INSTALLATION - SHEET METAL AND PLATE FABRICATIONS**

- A. Locate and place decorative formed sheet metal items level and plumb; align with adjacent construction. Cut, drill and fit as required to install.
- B. Do not cut or abrade sheet metal finishes that cannot be completely restored in the field. Return such items to manufacturer or fabricator for required alterations and refinishing or provide new items.
- C. Use concealed anchorages where possible. Provide washers where needed on bolts or screws to protect metal surfaces and make weathertight connection.
- D. Form tight joints with exposed connections accurately fitted together. Provide reveals and openings for sealants and joint fillers indicated.
- E. Corrosion Protection: Apply permanent separation materials on concealed surfaces where metals would otherwise be in direct contact with incompatible substrate materials. Prevent corrosion damage to material and finish.

### **3.04 CLEANING**

- A. Restore finishes damaged during installation and construction period. Return items that cannot be refinished in the field to manufacturer or fabricator. Refinish entire unit or provide new units.
- B. Remove protective film after installation of joint sealers, after cleaning of adjacent materials, and immediately prior to completion of work.
- C. Remove temporary coverings and protection of adjacent work areas.
- D. Clean installed products in accordance with manufacturer's instructions.

### **3.05 PROTECTION**

- A. Protect installed products from damage during construction.

**END OF SECTION**

**SECTION 06 1000  
ROUGH CARPENTRY**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Rough opening framing for doors, windows, and roof openings.
- B. Subflooring.
- C. Roof-mounted curbs.
- D. Roofing nailers.
- E. Preservative treated wood materials.
- F. Fire retardant treated wood materials.
- G. Communications and electrical room mounting boards.
- H. Concealed wood blocking, nailers, and supports.

**1.02 RELATED REQUIREMENTS**

- A. Section 05 5000 - Metal Fabrications: Miscellaneous steel connectors and support angles for wood framing.
- B. Section 07 6200 - Sheet Metal Flashing and Trim: Sill flashings.
- C. Section 07 7200 - Roof Accessories: Prefabricated roof curbs.

**1.03 REFERENCE STANDARDS**

- A. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware 2016a.
- B. ASTM C557 - Standard Specification for Adhesives for Fastening Gypsum Wallboard to Wood Framing 2003 (Reapproved 2017).
- C. ASTM D3498 - Standard Specification for Adhesives for Field-Gluing Wood Structural Panels (Plywood or Oriented Strand Board) to Wood Based Floor System Framing 2019a.
- D. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2021a.
- E. AWPA U1 - Use Category System: User Specification for Treated Wood 2021.
- F. PS 1 - Structural Plywood 2009 (Revised 2019).
- G. PS 2 - Performance Standard for Wood-Based Structural-Use Panels 2010.
- H. PS 20 - American Softwood Lumber Standard 2020.

**1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Blocking details and anchorage for items listed in this section or noted on the drawings.

**1.05 DELIVERY, STORAGE, AND HANDLING**

- A. General: Cover wood products to protect against moisture. Support stacked products to prevent deformation and to allow air circulation.
- B. Fire Retardant Treated Wood: Prevent exposure to precipitation during shipping, storage, or installation.

**1.06 WARRANTY**

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.

**PART 2 PRODUCTS**

**2.01 GENERAL REQUIREMENTS**

- A. Dimension Lumber: Comply with PS 20 and requirements of specified grading agencies.

1. If no species is specified, provide any species graded by the agency specified; if no grading agency is specified, provide lumber graded by any grading agency meeting the specified requirements.
2. Grading Agency: Any grading agency whose rules are approved by the Board of Review, American Lumber Standard Committee ([www.alsc.org](http://www.alsc.org)) and who provides grading service for the species and grade specified; provide lumber stamped with grade mark unless otherwise indicated.

## **2.02 DIMENSION LUMBER FOR CONCEALED APPLICATIONS**

- A. Sizes: Nominal sizes as indicated on drawings, S4S.
- B. Moisture Content: S-dry or MC19.
- C. Joist, Rafter, and Small Beam Framing (2 by 6 through 4 by 16 ):
- D. Miscellaneous Framing, Blocking, Nailers, Grounds, and Furring:
  1. Lumber: S4S, No. 2 or Standard Grade.
  2. Boards: Standard or No. 3.

## **2.03 CONSTRUCTION PANELS**

- A. Subfloor/Underlayment Combination: Any PS 2 type, rated Single Floor.
  1. Bond Classification: Exterior.
  2. Span Rating: 48.
  3. Performance Category: 1-1/8 PERF CAT.
- B. Subflooring: Any PS 2 type, rated Sheathing.
  1. Bond Classification: Exterior.
  2. Span Rating: 48.
  3. Performance Category: 3/4 PERF CAT.
- C. Roof Sheathing: Any PS 2 type, rated Structural I Sheathing.
  1. Bond Classification: Exterior.
  2. Span Rating: 60.
  3. Performance Category: 3/4 PERF CAT.
  4. Thickness: As indicated on drawings.
- D. Communications and Electrical Room Mounting Boards: PS 1 A-D plywood, or medium density fiberboard; 3/4 inch thick; flame spread index of 25 or less, smoke developed index of 450 or less, when tested in accordance with ASTM E84.

## **2.04 ACCESSORIES**

- A. Fasteners and Anchors:
  1. Metal and Finish: Hot-dipped galvanized steel complying with ASTM A153/A153M for high humidity and preservative-treated wood locations, unfinished steel elsewhere.
- B. Subfloor Adhesives: Waterproof, air cure type, cartridge dispensed; adhesives designed for subfloor applications and complying with either ASTM C557 or ASTM D3498.
  1. Manufacturers:
    - a. Franklin International, Inc; Titebond PROvantage Weatherproof Subfloor Adhesive: [www.titebond.com/#sle](http://www.titebond.com/#sle).
    - b. Huber Engineered Woods, LLC; AdvanTech Subfloor Adhesive: [www.huberwood.com/#sle](http://www.huberwood.com/#sle).
    - c. Liquid Nails, a brand of PPG Architectural Coatings; LN-950 Polyurethane Adhesive (Low VOC): [www.liquidnails.com/#sle](http://www.liquidnails.com/#sle).
- C. Construction Adhesives: Adhesives complying with ASTM C557 or ASTM D3498.
  1. Manufacturers:
    - a. Franklin International, Inc; Titebond Fast Set Polyurethane Construction Adhesive: [www.titebond.com/#sle](http://www.titebond.com/#sle).
- D. General Purpose Construction Adhesives:
  1. Manufacturers:

- a. ADFAST Corporation; ADBOND EX 5690: [www.adfastcorp.com/#sle](http://www.adfastcorp.com/#sle).

## **2.05 FACTORY WOOD TREATMENT**

- A. Treated Lumber and Plywood: Comply with requirements of AWP A U1 - Use Category System for wood treatments determined by use categories, expected service conditions, and specific applications.
  - 1. Fire-Retardant Treated Wood: Mark each piece of wood with producer's stamp indicating compliance with specified requirements.
- B. Fire Retardant Treatment:
  - 1. Interior Type A: AWP A U1, Use Category UCFA, Commodity Specification H, low temperature (low hygroscopic) type, chemically treated and pressure impregnated; capable of providing a maximum flame spread index of 25 when tested in accordance with ASTM E84, with no evidence of significant combustion when test is extended for an additional 20 minutes.
    - a. Kiln dry wood after treatment to a maximum moisture content of 19 percent for lumber and 15 percent for plywood.
    - b. Treat rough carpentry items as indicated .
    - c. Do not use treated wood in applications exposed to weather or where the wood may become wet.

## **PART 3 EXECUTION**

### **3.01 INSTALLATION - GENERAL**

- A. Select material sizes to minimize waste.
- B. Reuse scrap to the greatest extent possible; clearly separate scrap for use on site as accessory components, including: shims, bracing, and blocking.
- C. Where treated wood is used on interior, provide temporary ventilation during and immediately after installation sufficient to remove indoor air contaminants.

### **3.02 BLOCKING, NAILERS, AND SUPPORTS**

- A. Provide framing and blocking members as indicated or as required to support finishes, fixtures, specialty items, and trim.
- B. Secure blocking to structure with fasteners of adequate size and spacing to resist specified design loads for grab bars, handrails, guards, wind, etc. If not specified, follow building code requirements.
- C. In framed assemblies that have concealed spaces, provide solid wood fireblocking as required by applicable local code, to close concealed draft openings between floors and between top story and roof/attic space; other material acceptable to code authorities may be used in lieu of solid wood blocking.
- D. In metal stud walls, provide continuous blocking around door and window openings for anchorage of frames, securely attached to stud framing.
- E. In walls, provide blocking attached to studs as backing and support for wall-mounted items, unless item can be securely fastened to two or more studs or other method of support is explicitly indicated.
- F. Where ceiling-mounting is indicated, provide blocking and supplementary supports above ceiling, unless other method of support is explicitly indicated.

### **3.03 ROOF-RELATED CARPENTRY**

- A. Coordinate installation of roofing carpentry with deck construction, framing of roof openings, and roofing assembly installation.
- B. Provide prefabricated curbs at all roof openings except where specifically indicated otherwise. Form corners by alternating lapping side members.
- C. Place horizontal members with crown side up.
- D. Construct curb members of single pieces.

### **3.04 INSTALLATION OF CONSTRUCTION PANELS**

- A. Subflooring/Underlayment Combination: Glue and nail to framing; staples are not permitted.
- B. Subflooring: Glue and nail to framing; staples are not permitted.
- C. Roof Sheathing: Secure panels with long dimension perpendicular to framing members, with ends staggered and over firm bearing.
  - 1. Nail panels to framing; staples are not permitted.
- D. Communications and Electrical Room Mounting Boards: Secure with screws to studs with edges over firm bearing; space fasteners at maximum 24 inches on center on all edges and into studs in field of board.
  - 1. At fire-rated walls, install board over wall board indicated as part of the fire-rated assembly.
  - 2. Where boards are indicated as full floor-to-ceiling height, install with long edge of board parallel to studs.
  - 3. Install adjacent boards without gaps.

### **3.05 FIELD QUALITY CONTROL**

- A. See Section 01 4000 - Quality Requirements, for additional requirements.

### **3.06 CLEANING**

- A. Waste Disposal: Comply with the requirements of Section 01 7419 - Construction Waste Management and Disposal.
  - 1. Comply with applicable regulations.
  - 2. Do not burn scrap on project site.
  - 3. Do not burn scraps that have been pressure treated.
  - 4. Do not send materials treated with pentachlorophenol, CCA, or ACA to co-generation facilities or "waste-to-energy" facilities.
- B. Do not leave any wood, shavings, sawdust, etc. on the ground or buried in fill.
- C. Prevent sawdust and wood shavings from entering the storm drainage system.

**END OF SECTION**



**SECTION 06 2000  
FINISH CARPENTRY**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Finish carpentry items.
- B. Finished hardwood benches at locker rooms.
- C. Hardboard at Platform floor.
- D. Window Sills.
- E. PVC Column covers at Cuploa.
- F. Cellular PVC Trim and Mouldings.

**1.02 RELATED REQUIREMENTS**

- A. Section 01 6116 - Volatile Organic Compound (VOC) Content Restrictions.
- B. Section 06 1000 - Rough Carpentry: Support framing, grounds, and concealed blocking.
- C. Section 06 4100 - Architectural Wood Casework: Shop fabricated custom cabinet work.

**1.03 REFERENCE STANDARDS**

- A. ANSI A135.4 - Basic Hardboard 2012 (R2020).
- B. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2021a.
- C. AWI (QCP) - Quality Certification Program Current Edition.
- D. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards, 2nd Edition 2014, with Errata (2016).
- E. AWMAC/WI (NAAWS) - North American Architectural Woodwork Standards 2021, with Errata.
- F. BHMA A156.9 - Cabinet Hardware 2020.
- G. WDMA I.S. 4 - Industry Specification for Preservative Treatment for Millwork 2015a.

**1.04 ADMINISTRATIVE REQUIREMENTS**

- A. Sequence installation to ensure utility connections are achieved in an orderly and expeditious manner.

**1.05 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data:
  - 1. Provide manufacturer's product data, storage and handling instructions for factory-fabricated units.
  - 2. Provide data on fire retardant treatment materials and application instructions.
- C. Shop Drawings: Indicate materials, component profiles, fastening methods, jointing details, and accessories.
  - 1. Provide the information required by AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS).
- D. Fabricator's Qualifications as listed in Quality Assurance.
- E. Submit manufacturer's certifications for each type of fire retardant coating and/or preservative treatment, signed by the manufacturer, certifying that materials and substrate conditions comply with specified performance characteristics and physical properties.

**1.06 QUALITY ASSURANCE**

- A. Fabricator Qualifications: Company specializing in fabricating the products specified in this section with minimum five years of documented experience.

## **1.07 DELIVERY, STORAGE, AND HANDLING**

- A. Store finish carpentry items under cover, elevated above grade, and in a dry, well-ventilated area not exposed to heat or sunlight.
- B. Protect from moisture damage.
- C. Handle materials and products to prevent damage to edges, ends, or surfaces.

## **PART 2 PRODUCTS**

### **2.01 FINISH CARPENTRY ITEMS**

- A. Quality Standard: Custom Grade, in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), unless noted otherwise.
- B. Surface Burning Characteristics: Provide materials having fire and smoke properties as required by applicable code.
- C. Interior Woodwork Items:
  - 1. Window Sills: Solid surface as shown on construction documents.
  - 2. Finished hardwood benches in Locker Rooms. See details on construction documents..
- D. Factory-Fabricated Cellular PVC Column Covers:
  - 1. Column Style Shape: Round- tapered.
  - 2. Column Style Face: Plain.
  - 3. Cap Style: Box.
  - 4. Base Style: Box.
  - 5. Column Bottom Shaft Width: As indicated on drawings.
  - 6. Column Overall Height: As indicated on drawings.
  - 7. Column Wall Thickness: 3/8 inch.
  - 8. Shaft, Cap, and Base Construction: Two corner halves for field assembly.
  - 9. Products:
    - a. Royal Corinthian; RoyalWrap™ PVC Column Wraps: [www.royalcorinthian.com/#sle](http://www.royalcorinthian.com/#sle).
    - b. Substitutions: See Section 01 6000 - Product Requirements.

### **2.02 WOOD-BASED COMPONENTS**

- A. Provide sustainably harvested wood, certified or labeled as specified in Section 01 6000 - Product Requirements.

### **2.03 LUMBER MATERIALS**

- A. Hardwood Lumber: [ ] species, [ ] sawn, maximum moisture content of 6 percent ; with vertical grain , of quality suitable for transparent finish.

### **2.04 SHEET MATERIALS**

- A. Hardboard: ANSI A135.4 Pressed wood fiber with resin binder, Class 1 - Tempered, 1/4 inch thick, smooth one side (S1S).

### **2.05 FASTENINGS**

- A. Adhesive for Purposes Other Than Laminate Installation: Suitable for the purpose; not containing formaldehyde or other volatile organic compounds.
- B. Adhesive for factory-fabricated units: Manufacturer's recommended adhesive for application.
- C. Fasteners for Exterior Applications: Stainless steel; length required to penetrate wood substrate 1-1/2 inch minimum.

### **2.06 ACCESSORIES**

- A. Adhesive: Type recommended by fabricator to suit application.
- B. Lumber for Shimming, Blocking, and [ ]: Softwood lumber of [ ] species.
- C. Cellular PVC Trim and Moldings: Extruded, expanded PVC; UV-resistant, heat-stabilized, and rigid material; for exterior use only.
  - 1. Density: 31 pounds per cubic foot, minimum.

2. Flame Spread: ASTM E84, 75, maximum.
3. Manufacturers:
  - a. AZEK Building Products, Inc; PVC Trim: [www.azek.com/#sle](http://www.azek.com/#sle).
  - b. Fypon LLC; [www.fypon.com/#sle](http://www.fypon.com/#sle).
  - c. Royal Corinthian; RoyalPVC: [www.royalcorinthian.com/#sle](http://www.royalcorinthian.com/#sle).
  - d. Substitutions: See Section 01 6000 - Product Requirements.
- D. Primer: Alkyd primer sealer.
- E. Wood Filler: Solvent base, tinted to match surface finish color.

## **2.07 HARDWARE**

- A. Hardware: Comply with BHMA A156.9.
- B. Specialty Workstation and Countertop Brackets:
  1. Material: Steel.
  2. Finish: Manufacturer's standard, factory-applied powder coat.
  3. Color: Selected by Architect from manufacturer's standard range.
  4. Manufacturers:
    - a. A&M Hardware, Inc ; Concealed Brackets: <http://www.aandmhardware.com/#sle>.
    - b. Substitutions: See Section 01 6000 - Product Requirements.

## **2.08 WOOD TREATMENT**

- A. Fire Retardant Treatment (FR-S Type): Chemically treated and pressure impregnated; capable of providing flame spread index of 25, maximum, and smoke developed index of 450, maximum, when tested in accordance with ASTM E84; [ ] manufactured by [ ].
- B. Water Repellent Preservative Treatment by Dipping Method: WDMA I.S. 4, with 0.25 percent retainage.
- C. Wood Preservative (Surface Application): Colored, [ ] type, [ ] manufactured by [ ].
- D. Shop pressure treat wood materials requiring fire rating to concealed wood blocking.
- E. Provide identification on fire retardant treated material.
- F. Redry wood after pressure treatment to maximum [ ] percent moisture content.

## **2.09 SITE FINISHING MATERIALS**

- A. Stain, Shellac, Varnish, and Finishing Materials: In compliance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), unless noted otherwise.
- B. Finishing: Field finished as specified in Section 09 9123.

## **2.10 FABRICATION**

- A. Shop assemble work for delivery to site, permitting passage through building openings.
- B. Fit exposed sheet material edges with 3/8 inch matching hardwood edging. Use one piece for full length only.
- C. When necessary to cut and fit on site, provide materials with ample allowance for cutting. Provide trim for scribing and site cutting.

## **2.11 SHOP FINISHING**

- A. Sand work smooth and set exposed nails and screws.
- B. Apply wood filler in exposed nail and screw indentations.
- C. On items to receive transparent finishes, use wood filler that matches surrounding surfaces and is of type recommended for the applicable finish.
- D. Finish work in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), Section 5 - Finishing for grade specified and as follows:
  1. Transparent:

- a. System - 1, Lacquer, Nitrocellulose.
- b. Sheen: Flat.

E. Prime paint surfaces in contact with cementitious materials.

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

- A. Verify adequacy of backing and support framing.
- B. Verify mechanical, electrical, and building items affecting work of this section are placed and ready to receive this work.

#### **3.02 INSTALLATION**

- A. Install custom fabrications in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS) requirements for grade indicated.
- B. Set and secure materials and components in place, plumb and level.
- C. Carefully scribe work abutting other components, with maximum gaps of 1/32 inch. Do not use additional overlay trim to conceal larger gaps.

#### **3.03 SITE APPLIED WOOD TREATMENT**

- A. Apply preservative treatment in accordance with manufacturer's instructions.
- B. Brush apply one coats of preservative treatment on wood in contact with cementitious materials. Treat site-sawn cuts.
- C. Allow preservative to dry prior to erecting members.

#### **3.04 PREPARATION FOR SITE FINISHING**

- A. Set exposed fasteners. Apply wood filler in exposed fastener indentations. Sand work smooth.

#### **3.05 PROTECTION**

- A. Protect installed material and products from damage from weather or other causes during construction.
- B. Remove and replace finish carpentry material that is wet, moisture damaged, and mold damaged.
  - 1. Indications that materials are wet or moisture damaged include, but not limited to, discoloration, sagging, or irregular shape.
  - 2. Indications that materials are mold damaged include, but not limited to, fuzzy or splotchy surface contamination and discoloration.

#### **3.06 TOLERANCES**

- A. Maximum Variation from True Position: 1/16 inch.
- B. Maximum Offset from True Alignment with Abutting Materials: 1/32 inch.

### **END OF SECTION**

**SECTION 06 4100  
ARCHITECTURAL WOOD CASEWORK**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Specially fabricated millwork units.
- B. Hardware.

**1.02 RELATED REQUIREMENTS**

- A. Section 06 1000 - Rough Carpentry: Support framing, grounds, and concealed blocking.
- B. Section 12 3600 - Countertops.

**1.03 REFERENCE STANDARDS**

- A. AWI (QCP) - Quality Certification Program Current Edition.
- B. AWMAC/WI (NAAWS) - North American Architectural Woodwork Standards 2021, with Errata.
- C. NEMA LD 3 - High-Pressure Decorative Laminates 2005.

**1.04 ADMINISTRATIVE REQUIREMENTS**

- A. Preinstallation Meeting: Convene a preinstallation meeting not less than one week before starting work of this section; require attendance by all affected installers.

**1.05 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Indicate materials, component profiles, fastening methods, jointing details, and accessories.

**1.06 QUALITY ASSURANCE**

- A. Fabricator Qualifications: Company specializing in fabricating the products specified in this section with minimum five years of documented experience.
  - 1. Company with at least one project in the past 5 years with value of woodwork within 20 percent of cost of woodwork for this Project.
  - 2. Accredited participant in the specified certification program prior to the commencement of fabrication and throughout the duration of the project.
  - 3. Single Source Responsibility: Provide and install this work from single fabricator.
- B. Quality Certification:
  - 1. Comply with AWI (QCP) woodwork association quality certification service/program in accordance with requirements for work specified in this section: [www.awiqcp.org/#sle](http://www.awiqcp.org/#sle).
  - 2. Provide designated labels on shop drawings as required by certification program.
  - 3. Provide designated labels on installed products as required by certification program.
  - 4. Submit certifications upon completion of installation that verifies this work is in compliance with specified requirements.
  - 5. Replace, repair, or rework all work for which certification is refused.

**1.07 DELIVERY, STORAGE, AND HANDLING**

- A. Protect units from moisture damage.

**PART 2 PRODUCTS**

**2.01 CUSTOM MILLWORK**

- A. Quality Standard: Custom Grade, in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), unless noted otherwise.
- B. Plastic Laminate Faced custom units: Custom grade.
- C. Locations: Administration- Rm. #112; Nurse's Office #122.
- D. Reference Drawing: See Sheet A911 for details on custom units.

## **2.02 WOOD-BASED COMPONENTS**

- A. Wood fabricated from old growth timber is not permitted.

## **2.03 LAMINATE MATERIALS**

- A. Manufacturers:
  - 1. Formica Corporation: [www.formica.com/#sle](http://www.formica.com/#sle).
  - 2. Panolam Industries International, Inc; Nevamar Standard HPL: [www.panolam.com/#sle](http://www.panolam.com/#sle).
  - 3. Wilsonart LLC: [www.wilsonart.com/#sle](http://www.wilsonart.com/#sle).
  - 4. Substitutions: See Section 01 6000 - Product Requirements.
- B. High Pressure Decorative Laminate (HPDL): NEMA LD 3, types as recommended for specific applications.
- C. Provide specific types as indicated.
  - 1. Vertical Surfaces: VGS, 0.028 inch nominal thickness, finish as indicated.

## **2.04 CUSTOM MILLWORK UNIT TOPS**

- A. Countertops and custom millwork tops are specified in Section 12 3600.

## **2.05 ACCESSORIES**

- A. Grommets: Standard plastic grommets for cut-outs, in color to match adjacent surface.

## **2.06 HARDWARE**

- A. Fixed Specialty Workstation and Countertop Brackets:
  - 1. Material: Steel.
  - 2. Finish: Manufacturer's standard, factory-applied powder coat.
  - 3. Color: Selected by Architect from manufacturer's standard range.
  - 4. Manufacturers:
    - a. Centerline Brackets; [www.countertopbracket.com/#sle](http://www.countertopbracket.com/#sle).
    - b. Substitutions: See Section 01 6000 - Product Requirements.

## **2.07 SITE FINISHING MATERIALS**

- A. Finishing: Field finished as specified in Section 09 9300.

## **2.08 FABRICATION**

- A. Assembly: Shop assemble cabinets for delivery to site in units easily handled and to permit passage through building openings.
- B. Plastic Laminate: Apply plastic laminate finish in full uninterrupted sheets consistent with manufactured sizes. Fit corners and joints hairline; secure with concealed fasteners.
  - 1. Cap exposed plastic laminate finish edges with material of same finish and pattern.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify adequacy of backing and support framing.

### **3.02 INSTALLATION**

- A. Set and secure custom cabinets in place, assuring that they are rigid, plumb, and level.

### **3.03 ADJUSTING**

- A. Adjust installed work.
- B. Adjust moving or operating parts to function smoothly and correctly.

### **3.04 CLEANING**

- A. Clean casework, counters, shelves, hardware, fittings, and fixtures.

## **END OF SECTION**

**SECTION 06 8000  
COMPOSITE FABRICATIONS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Fiberglass Polymercomposite Columns.
- B. Polyurethane trims and mouldings.

**1.02 RELATED REQUIREMENTS**

- A. Section 06 7100 - Structural Composite Shapes and Plates: Structural composite supporting assemblies for composite fabrications.

**1.03 DEFINITIONS**

- A. Fiber-Reinforced Polymer (FRP): Material that consists of polymer resin-based matrix with fibers of either glass, carbon, or aramid, and hybrid combinations of these fiber types.

**1.04 REFERENCE STANDARDS**

- A. ACMA (FRP) - Guidelines and Recommended Practices for Fiber-Reinforced-Polymer (FRP) Architectural Products 2016.
- B. ANSI/ACMA/PIC (CSP) - Code of Standard Practice, Industry Guidelines for Fabrication and Installation of Pultruded FRP Structures 2011 (Reapproved 2012).
- C. ASTM D8069 - Standard Test Method for Determining Flexural Modulus of Full Section Pultruded Fiber Reinforced Polymer (FRP) Composite Members with Doubly Symmetric Cross Sections under Bending 2017a.
- D. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2021a.
- E. ICC (IBC) - International Building Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

**1.05 ADMINISTRATIVE REQUIREMENTS**

- A. See Section 01 7000 - Execution and Closeout Requirements for additional requirements relating to preinstallation meetings.
- B. Preinstallation Meeting: Conduct preinstallation meeting at least one week prior to start of work of this section; require attendance by affected installers.
  - 1. Review quality control requirements and setting diagrams.

**1.06 SUBMITTALS**

- A. See Section -01 3300- Administrative Requirements for submittal procedures.
- B. Product Data: Include profiles and sizes.
- C. Shop Drawings:
  - 1. Elevations, Plans, and Sections: Include elevations and dimensions, indicating locations of members and connections.
    - a. Drawing Scale: 1 1/2 inch to 1 foot, minimum.
  - 2. Details: Include fastener details.
  - 3. Documentation demonstrating compliance with specified performance requirements; signed and sealed by Engineer of Record for design of composite fabrications.
- D. Samples: Submit two samples of trims, minimum 12 inches in length, indicating specified profile, size, and color.
- E. Manufacturer's Instructions: Manufacturer's published installation instructions.
- F. Source Quality Control Submittals: Report documenting compliance with quality control section of ANSI/ACMA/PIC (CSP).
- G. Fabricator's qualification statement.

- H. Warranty Documentation: Manufacturer warranty; ensure that forms have been completed in Owner's name and registered with manufacturer.

### **1.07 QUALITY ASSURANCE**

- A. Fabrication Qualifications: Company specializing in manufacturing products specified in this section, with not less than ten years of documented experience.

### **1.08 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver materials to project site in original, unbroken packages, or bundles bearing label of manufacturer and component identification markings.
- B. Store materials under cover and elevated above grade.
- C. Protect composite fabrication units from damage including cracking or chipping.
- D. Comply with handling and storage requirements of ACMA (FRP).
- E. Packaging Waste Management: See Section 01 7419 - Construction Waste Management and Disposal.

### **1.09 WARRANTY**

- A. See Section 01 7800 - Closeout Submittals for additional warranty requirements.
- B. Provide manufacturer's standard three-year warranty for against defective products.

## **PART 2 PRODUCTS**

### **2.01 COMPOSITE FABRICATIONS**

- A. Glass-Fiber-Reinforced Polymer (FRP) Composites, or Polyurethane Trims and Mouldings:
  - 1. FRP structural composite shapes manufactured by pultrusion process; composed of fiberglass reinforcement and resin, in qualities and quantities as required to meet specified performance requirements.
  - 2. Finished Surfaces, General: Smooth, resin-rich, free of voids; without dry spots, cracks, crazes, or unreinforced areas.
  - 3. Resins: Fiberglass-reinforced vinyl ester resin, with chemical formulation as required to meet specified performance requirements.
  - 4. Surface Burning Characteristics: Flame spread rating of 25 or less when tested in accordance with ASTM E84.

### **2.02 FIBERGLASS POLYMERCOMPOSITE COLUMNS**

- A. Manufacturer - Basis of Design: Architectural Fiberglass, Inc; [www.fiberglass-afi.com/#sle](http://www.fiberglass-afi.com/#sle):
- B. Type: Centifugal spun cast Fiberglass Reinforced Polymer (FRP) composite columns; round, non-tapered with Tuscan base and cap.
- C. Size: Outside Diameter: 10"- height as shown on drawings.
- D. Installation: follow manufacturer's recommended methods for installation. Coordinate with existing structure present to receive new column covers and verify in field that conditions exist for fit and best execution for proposed outcome prior to order or placement of columns. Refer to construction documents for additional details.
  - 1. Substitutions: See Section 01 6000 - Product Requirements.

### **2.03 POLYURETHANE TRIM AND MOULDING**

- A. Manufacturers - Basis of Design: Fypon: [www.fypon.com/#sle](http://www.fypon.com/#sle).
  - 1. Substitutions: See Section 01 6000 - Product Requirements.
- B. Crown moulding: Fypon # MLD511-12.
- C. Trim: 3/4" thick flatstock trim to be field cut as required. Smooth face ready for field applied paint.
- D. Design Criteria
  - 1. Comply with requirements for Contractor's design-related professional design services indicated in Section 01 4000 - Quality Requirements.



- E. Performance Requirements:
  - 1. Provide coordination of assemblies composed of columns and trim work, attachments, and anchorage devices capable of resisting specified performance criteria indicated below and transferring loads through assembly components to structure without damage to components.

#### **2.04 FABRICATION**

- A. Fabricate composite fabrications in accordance with ANSI/ACMA/PIC (CSP).
- B. Shop-assemble components in largest practical sizes for delivery to site.
- C. Fabricate components for tightly fitted and secured joints.

#### **2.05 ANCHORING ACCESSORIES**

- A. Anchorage devices for attachment to structure; designed to comply with specified structural load performance requirements.

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

- A. Verify dimensions, tolerances, and interfaces with related work; verify location of supporting assemblies.
- B. Verify support work has been constructed to allow accurate placement and alignment of anchor bolts and other connections to supporting assemblies.

#### **3.02 PREPARATION**

- A. Supply items required to be cast into concrete or embedded in masonry with sleeves for concrete embedment, for subsequent installation of composite fabrication assemblies.

#### **3.03 INSTALLATION - GENERAL**

- A. Anchor composite fabrications securely to structure.
- B. Install composite fabrications in accordance with manufacturer's installation instructions and as required to meet specified performance requirements.
- C. Install components plumb and level, accurately fitted, free from distortion or defects, with tight joints.
- D. Perform cutting, drilling, and fitting of composite fabrications as required for accurately aligned installation.

#### **3.04 TOLERANCES**

- A. Maximum Variation From Plumb: 1/4 inch per floor level, noncumulative.
- B. Maximum Offset From True Alignment: 1/4 inch.
- C. Maximum Out-of-Position: 1/4 inch.

#### **3.05 CLEANING**

- A. Clean composite fabrications in accordance with manufacturer's instructions.
- B. See Section 01 7419 - Construction Waste Management and Disposal for additional requirements.

#### **3.06 PROTECTION**

- A. Protect installed composite fabrications from subsequent construction operations.

### **END OF SECTION**

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**SECTION 07 0553  
FIRE AND SMOKE ASSEMBLY IDENTIFICATION**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Identification markings for fire and smoke rated partitions, and fire rated walls.

**1.02 REFERENCE STANDARDS**

- A. ICC (IBC) - International Building Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

**1.03 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Manufacturer's printed product literature for each type of marking, indicating font, foreground and background colors, wording, and overall dimensions.
- C. Schedule: Completely define scope of proposed marking, and indicate location of affected walls and partitions, and number of markings.
- D. Samples: Submit one sample of each type of marking proposed for use, of size similar to that required for project, illustrating font, wording, and method of application.

**1.04 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of documented experience.

**1.05 FIELD CONDITIONS**

- A. Do not install adhered markings when ambient temperature is lower than recommended by label or sign manufacturer.

**PART 2 PRODUCTS**

**2.01 MANUFACTURERS**

- A. Partition Identification Labels:
  - 1. Fire Wall Signs, Inc: [www.firewallsigns.com/#sle](http://www.firewallsigns.com/#sle).
  - 2. Safety Supply Warehouse, Inc: [www.safetysupplywarehouse.com/#sle](http://www.safetysupplywarehouse.com/#sle).
  - 3. My Safety Sign: [www.mysafetysign.com](http://www.mysafetysign.com).
  - 4. Smart Sign: [www.smartsign.com](http://www.smartsign.com).
  - 5. Seton: [www.seton.com](http://www.seton.com).
  - 6. Or approved equal.

**2.02 FIRE AND SMOKE ASSEMBLY IDENTIFICATION**

- A. Regulatory Requirements: Comply with "Marking and Identification" requirements of "Fire-Resistance Ratings and Fire Tests" chapter of ICC (IBC).
- B. Adhered Fire and Smoke Assembly Identification Signs: Printed vinyl sign with factory applied adhesive backing.
- C. Include lettering not less than 3 inches in height with a minimum 3/8-inch stroke in a contrasting color incorporating the suggested wording "1 HR RATED FIRE AND/OR SMOKE BARRIER - PROTECT ALL OPENINGS AND PENETRATIONS". Substitute the "1 HR" wording with the appropriate hourly fire ratings noted on the drawing plans. A sample sign is illustrated below:



D. Languages: Provide sign markings in English.

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

A. Verify that substrate surfaces are ready to receive work.

#### **3.02 PREPARATION**

A. Prepare substrate per manufacturer's recommendations.

#### **3.03 INSTALLATION**

- A. Locate markings as required by ICC (IBC).
  - 1. Permanently and effectively mark all fire walls, fire barriers, fire partition, smoke barriers, smoke partitions and any other wall required to have protected openings or penetrations with signs.
  - 2. Locate in accessible concealed spaces below floors, above ceilings and in attic spaces.
  - 3. Locate in non-occupied service rooms such as mechanical, electrical and equipment rooms.
  - 4. Locate markings on both sides of walls.
  - 5. Locate within 15 feet of the end of each wall and at intervals not exceeding 30 feet measured horizontally along the wall or partition.
- B. Install adhered markings in accordance with manufacturer's instructions.
- C. Install neatly, with horizontal edges level.
- D. Protect from damage until Date of Substantial Completion; repair or replace damaged markings.

**END OF SECTION**

**SECTION 07 1113  
BITUMINOUS DAMPPROOFING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Bituminous dampproofing.

**1.02 RELATED REQUIREMENTS**

- A. Section 07 2100 - Thermal Insulation: Rigid insulation board used as protection board.

**1.03 REFERENCE STANDARDS**

**1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide properties of primer, bitumen, and mastics.
- C. Manufacturer's Installation Instructions: Indicate special procedures and perimeter conditions requiring special attention.

**1.05 QUALITY ASSURANCE**

- A. Installer Qualifications: Company specializing in performing the work of this section with at least three years of documented experience.

**1.06 FIELD CONDITIONS**

- A. Maintain ambient temperatures above 40 degrees F for 24 hours before and during application until dampproofing has cured.

**PART 2 PRODUCTS**

**2.01 MANUFACTURERS**

- A. Bituminous Dampproofing Manufacturers:
  - 1. Karnak Corporation: [www.karnakcorp.com/#sle](http://www.karnakcorp.com/#sle).
  - 2. Mar-Flex Systems, Inc: [www.mar-flex.com/#sle](http://www.mar-flex.com/#sle).
  - 3. W. R. Meadows, Inc: [www.wrmeadows.com/#sle](http://www.wrmeadows.com/#sle).
  - 4. Substitutions: See Section 01 6000 - Product Requirements.

**2.02 BITUMINOUS DAMPPROOFING**

- A. Bituminous Dampproofing: Cold-applied, spray-grade; asphalt base, volatile petroleum solvents, and other content, suitable for application by spray, brush, roller, or squeegee; asbestos-free; suitable for application on vertical and horizontal surfaces.
  - 1. Composition: ASTM D4479/D4479M Type I, minimum, asbestos free.
  - 2. VOC Content: Not more than permitted by local, State, and federal regulations.
  - 3. Applied Thickness: 1/16 inch, minimum, wet film.
  - 4. Products:
    - a. W. R. Meadows, Inc; Sealastic Semi-Mastic: [www.wrmeadows.com/#sle](http://www.wrmeadows.com/#sle).
    - b. Substitutions: See Section 01 6000 - Product Requirements.
- B. Primers, Mastics, and Related Materials: Type as recommended by dampproofing manufacturer.

**2.03 ACCESSORIES**

- A. Protection Board: Type recommended by waterproofing manufacturer.

**PART 3 EXECUTION**

**3.01 EXAMINATION**

- A. Verify existing conditions are acceptable prior to starting this work.
- B. Verify substrate surfaces are durable, free of matter detrimental to adhesion or application of dampproofing system.
- C. Verify that items penetrating surfaces to receive dampproofing are securely installed.

### **3.02 PREPARATION**

- A. Protect adjacent surfaces not designated to receive dampproofing.
- B. Clean and prepare surfaces to receive dampproofing in accordance with manufacturer's instructions.
- C. Do not apply dampproofing to surfaces unacceptable to manufacturer.
- D. Apply mastic to seal penetrations, small cracks, or minor honeycombs in substrate.

### **3.03 APPLICATION**

- A. Elevator Pit Foundation Walls: Apply two coats of dampproofing.
- B. Prime surfaces at a rate approved by manufacturer for application indicated, and allow primer to dry thoroughly.
- C. Apply bitumen with roller.
- D. Seal items watertight with mastic, that project through dampproofing surface.
- E. Place protection board directly over dampproofing, butt joints, and adhere to tacky dampproofing.
- F. Scribe and cut boards around projections, penetrations, and interruptions.

**END OF SECTION**

**SECTION 07 1400  
FLUID-APPLIED WATERPROOFING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Fluid-Applied Waterproofing:
  - 1. Modified-polymer elastomeric waterproofing.

**1.02 RELATED REQUIREMENTS**

- A. Section 03 3000 - Cast-in-Place Concrete: Concrete substrate.
- B. Section 14 2100 - Electric Traction Elevators: Waterproofing the elevator pit.

**1.03 REFERENCE STANDARDS**

- A. ASTM C661 - Standard Test Method for Indentation Hardness of Elastomeric-Type Sealants by Means of a Durometer 2015 (Reapproved 2022).
- B. ASTM C1306/C1306M - Standard Test Method for Hydrostatic Pressure Resistance of a Liquid-Applied Waterproofing Membrane 2008, with Editorial Revision (2016).
- C. ASTM D2370 - Standard Test Method for Tensile Properties of Organic Coatings 2016 (Reapproved 2021).
- D. ASTM D5385/D5385M - Standard Test Method for Hydrostatic Pressure Resistance of Waterproofing Membranes 2020.
- E. ASTM E96/E96M - Standard Test Methods for Gravimetric Determination of Water Vapor Transmission Rate of Materials 2021.
- F. NRCA (WM) - The NRCA Waterproofing Manual 2005.

**1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide data for membrane, surface conditioner, flexible flashings, joint cover sheet, and joint and crack sealants.
- C. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
- D. Manufacturer's Installation Instructions: Indicate special procedures, perimeter conditions requiring special attention, and acceptable installation temperatures.
- E. Warranty Documentation:
  - 1. Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

**1.05 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than three years documented experience.
- B. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience.

**1.06 FIELD CONDITIONS**

- A. Maintain ambient temperatures above 40 degrees F for 24 hours before and during application and until cured.

**1.07 WARRANTY**

- A. See Section 01 7800 - Closeout Submittals for additional warranty requirements.

**PART 2 PRODUCTS**

**2.01 MANUFACTURERS**

- A. Modified-Polymer Elastomeric Waterproofing:
  - 1. Hyload, Inc; Hyproof LAM (Liquid Applied Membrane): [www.hyload.com/#sle](http://www.hyload.com/#sle).

## **2.02 WATERPROOFING APPLICATIONS**

- A. Modified-Polymer Elastomeric Waterproofing:

## **2.03 FLUID APPLIED WATERPROOFING MATERIALS**

- A. Modified-Polymer Elastomeric Waterproofing:
  - 1. Cured Thickness: 55 mils, 0.055 inch, minimum.
  - 2. Suitable for installation over concrete substrates.
  - 3. Tensile Strength: 95 psi, minimum, measured in accordance with ASTM D2370.
  - 4. Ultimate Elongation: 350 percent, minimum, measured in accordance with ASTM D2370.
  - 5. Hardness: 55, minimum, measured in accordance with ASTM C661, using Type 00 durometer.
  - 6. Water Vapor Permeability: 0.07 perm inch, maximum, measured in accordance with ASTM E96/E96M.
  - 7. Products:
    - a. Carlisle Coatings & Waterproofing, Inc; MiraSEAL: [www.carlisleccw.com/#sle](http://www.carlisleccw.com/#sle).
    - b. Hyload, Inc., Hyproof LAM (Liquid Applied Membrane).

## **2.04 ACCESSORIES**

- A. Surface Conditioner: type, compatible with membrane compound; as recommended by membrane manufacturer.
- B. Sealant for Joints and Cracks in Substrate: Type compatible with waterproofing material and as recommended by waterproofing manufacturer.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify existing conditions before starting work.
- B. Verify substrate surfaces are free of frozen matter, dampness, loose particles, cracks, pits, projections, penetrations, or foreign matter detrimental to adhesion or application of waterproofing system.
- C. Verify that substrate surfaces are smooth, free of honeycomb or pitting, and not detrimental to full contact bond of waterproofing materials.

### **3.02 PREPARATION**

- A. Clean and prepare surfaces to receive waterproofing in accordance with manufacturer's instructions; vacuum substrate clean.
- B. Do not apply waterproofing to surfaces unacceptable to waterproofing manufacturer.
- C. Fill non-moving joints and cracks with a filler compatible with waterproofing materials.
- D. Seal moving cracks with sealant and non-rigid filler, using procedures recommended by sealant and waterproofing manufacturers.

### **3.03 INSTALLATION**

- A. Install waterproofing to specified minimum thickness in accordance with manufacturers instructions and NRCA (WM) applicable requirements.
- B. Seal membrane and flashings to adjoining surfaces.

### **3.04 FIELD QUALITY CONTROL**

- A. See Section 01 4000 - Quality Requirements for additional requirements.
- B. Owner will provide testing services and Contractor to provide temporary construction and materials for testing.
- C. Provide daily on-site attendance of roofing and insulation manufacturer's representative during installation of this work.

**END OF SECTION**



## **SECTION 07 2100 THERMAL INSULATION**

### **PART 1 GENERAL**

#### **1.01 SECTION INCLUDES**

- A. Board insulation and integral vapor retarder at cavity wall construction, perimeter foundation wall, underside of floor slabs, and interior wall with facer providing exposed finish.
- B. Batt insulation and vapor retarder in exterior wall, ceiling, and roof construction.
- C. Batt insulation for filling perimeter window and door shim spaces and crevices in exterior wall and roof.

#### **1.02 RELATED REQUIREMENTS**

- A. Section 06 1000 - Rough Carpentry: Installation requirements for board insulation over steep slope roof sheathing or roof structure.
- B. Section 07 5300 - Elastomeric Membrane Roofing: Installation requirements for board insulation over low slope roof deck specified in this section.

#### **1.03 REFERENCE STANDARDS**

- A. ASTM C557 - Standard Specification for Adhesives for Fastening Gypsum Wallboard to Wood Framing 2003 (Reapproved 2017).
- B. ASTM C578 - Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation 2019.
- C. ASTM C665 - Standard Specification for Mineral-Fiber Blanket Thermal Insulation for Light Frame Construction and Manufactured Housing 2017.
- D. ASTM C1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board 2021.
- E. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2021a.
- F. ASTM E136 - Standard Test Method for Assessing Combustibility of Materials Using a Vertical Tube Furnace at 750°C 2019a.
- G. NFPA 285 - Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Wall Assemblies Containing Combustible Components 2019.

#### **1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. ABAA Field Quality Control Submittals: Submit third-party reports of testing and inspection required by ABAA QAP.
- C. ABAA Manufacturer Qualification: Submit documentation of current evaluation of proposed manufacturer and materials.
- D. ABAA Installer Qualification: Submit documentation of current contractor accreditation and current installer certification. Keep copies of contractor accreditation and installer certification on project site during and after installation. Present on-site documentation upon request.

#### **1.05 QUALITY ASSURANCE**

- A. Air Barrier Association of America (ABAA) Quality Assurance Program (QAP); [www.airbarrier.org/#sle](http://www.airbarrier.org/#sle):
  - 1. Installer Qualification: Use accredited contractors, certified installers, evaluated materials, and third-party field quality control audit.
  - 2. Manufacturer Qualification: Use evaluated materials from a single manufacturer regularly engaged in air barrier material manufacture. Use secondary materials approved in writing by primary material manufacturer.

## 1.06 FIELD CONDITIONS

- A. Do not install insulation adhesives when temperature or weather conditions are detrimental to successful installation.

## PART 2 PRODUCTS

### 2.01 APPLICATIONS

- A. Insulation Under Concrete Slabs: Extruded polystyrene (XPS) board.
- B. Insulation at Perimeter of Foundation: Extruded polystyrene (XPS) board.
- C. Insulation Inside Masonry Cavity Walls: Extruded polystyrene (XPS) carbon black board.
- D. Insulation on Inside of Framed Walls with Exposed Facer Providing Interior Finish: Glass-fiber-reinforced polyisocyanurate with exposed facers.
- E. Insulation in Metal Framed Walls: Batt insulation with integral vapor retarder.

### 2.02 FOAM BOARD INSULATION MATERIALS

- A. Extruded Polystyrene (XPS) Board Insulation: Complies with ASTM C578 with either natural skin or cut cell surfaces.
  - 1. Flame Spread Index (FSI): Class A - 0 to 25, when tested in accordance with ASTM E84.
  - 2. Smoke Developed Index (SDI): 450 or less, when tested in accordance with ASTM E84.
  - 3. Type and Thermal Resistance, R-value: Type IV, 5.0 (0.88) per 1 inch thickness at 75 degrees F mean temperature.
  - 4. Complies with fire resistance requirements indicated on drawings as part of an exterior non-load-bearing exterior wall assembly when tested in accordance with NFPA 285.
  - 5. Board Edges: Square.
  - 6. Type and Water Absorption: Type IV, 0.3 percent by volume, maximum, by total immersion.
  - 7. Products:
    - a. DuPont de Nemours, Inc; Styrofoam Brand [\_\_\_\_]: [building.dupont.com/#sle](http://building.dupont.com/#sle).
    - b. Kingspan Insulation LLC; GreenGuard XPS Type IV, 25 psi: [www.kingspan.com/#sle](http://www.kingspan.com/#sle).
    - c. Owens Corning Corporation; FOAMULAR Extruded Polystyrene (XPS) Insulation: [www.ocbuildingspec.com/#sle](http://www.ocbuildingspec.com/#sle).
    - d. Substitutions: See Section 01 6000 - Product Requirements.
- B. Extruded Polystyrene (XPS) Cavity Wall Insulation Board: Complies with ASTM C578, and manufactured using carbon black technology.
  - 1. Flame Spread Index (FSI): Class A - 0 to 25, when tested in accordance with ASTM E84.
  - 2. Smoke Developed Index (SDI): 450 or less, when tested in accordance with ASTM E84.
  - 3. Type and Thermal Resistance, R-value: Type IV, 5.6 (0.98), minimum, per 1 inch thickness at 75 degrees F mean temperature.
  - 4. Board Size: 15-3/4 inch by 96 inch.
  - 5. Board Thickness: 1-3/4 inch.
  - 6. Board Edges: Square.
  - 7. Products:
    - a. DuPont de Nemours, Inc; Styrofoam Brand Cavitymate Ultra: [building.dupont.com/#sle](http://building.dupont.com/#sle).
- C. Glass-Fiber-Reinforced Polyisocyanurate (ISO) Board Insulation with Facers Both Sides and Providing Interior Finish System: Rigid cellular foam, complying with ASTM C1289.
  - 1. Compressive Strength: 16 psi, minimum.
  - 2. Thermal Resistance, R-value: Type I, Class 2, at 1-1/2 inch thick; 9.0 at 75 degrees F.
  - 3. Flame Spread Index (FSI): Class A - 0 to 25, when tested in accordance with ASTM E84.
  - 4. Smoke Developed Index (SDI): 450 or less, when tested in accordance with ASTM E84.
  - 5. Board Size: 48 inch by 96 inch.
  - 6. Board Thickness: 1 inch.
  - 7. Board Edges: Square.

8. Exposed Facer: 4 mil, 0.004 inch embossed white thermoset-coated aluminum.
9. Non-Exposed Facer: 1.25 mil, 0.00125 inch embossed aluminum.

### **2.03 BATT INSULATION MATERIALS**

- A. Where batt insulation is indicated, either glass fiber or mineral fiber batt insulation may be used, at Contractor's option.
- B. Glass Fiber Batt Insulation: Flexible preformed batt or blanket, complying with ASTM C665; friction fit.
  1. Flame Spread Index: 75 or less, when tested in accordance with ASTM E84.
  2. Smoke Developed Index: 450 or less, when tested in accordance with ASTM E84.
  3. Combustibility: Non-combustible, when tested in accordance with ASTM E136, except for facing, if any.
  4. Formaldehyde Content: Zero.
  5. Thermal Resistance: R-value of 3.5 per inch.
  6. Thickness: 6 inch.
  7. Facing: Aluminum foil, flame spread 25 rated; one side.
  8. Products:
    - a. Owens Corning Corporation; EcoTouch PINK FIBERGLAS Insulation: [www.ocbuildingspec.com/#sle](http://www.ocbuildingspec.com/#sle).
- C. Mineral Fiber Batt Insulation: Flexible or semi-rigid preformed batt or blanket, complying with ASTM C665; friction fit; unfaced flame spread index of 0 (zero) when tested in accordance with ASTM E84.
  1. Flame Spread Index: 25 or less, when tested in accordance with ASTM E84.
  2. Smoke Developed Index: 0 (zero), when tested in accordance with ASTM E84.
  3. Thermal Resistance: R-value of min 15.
  4. Products:
    - a. Johns Manville; MinWool Sound Attenuation Fire Batts: [www.jm.com/#sle](http://www.jm.com/#sle).
    - b. ROCKWOOL (ROXUL, Inc); COMFORTBATT: [www.rockwool.com/#sle](http://www.rockwool.com/#sle).

### **2.04 ACCESSORIES**

- A. Sheet Vapor Retarder: Black polyethylene film for above grade application, 10 mil, 0.010 inch thick.
- B. Interior Vapor Retarder: Modified polyethylene/polyacrylate (PE/PA) film reinforced with polyethylene terephthalate (PET) fibers, 12 mils, 0.012 inch thick.
- C. Tape: Reinforced polyethylene film with acrylic pressure sensitive adhesive.
  1. Application: Sealing of interior circular penetrations, such as pipes or cables.
  2. Width: Are required for application.
  3. Temperature Resistance: Minus 40 degrees F to 212 degrees F
- D. Tape: Bright aluminum self-adhering type, mesh reinforced, 2 inch wide.
- E. Tape joints of rigid insulation in accordance with roofing and insulation manufacturers' instructions.
- F. Adhesive: Type recommended by insulation manufacturer for application.
- G. Adhesive: Gun grade, interior and exterior, and compatible with insulation and substrates; complies with ASTM C557.
  1. Application Temperature: 40 to 100 degrees F at contact surfaces.
- H. Adhesive: Vapor retarder type, trowel consistency; fire retardant, compatible with insulation and substrate, complying with the following:

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that substrate, adjacent materials, and insulation materials are dry and that substrates are ready to receive insulation.

- B. Verify substrate surfaces are flat, free of honeycomb, fins, irregularities, or materials or substances that may impede adhesive bond.

### **3.02 BOARD INSTALLATION AT FOUNDATION PERIMETER**

- A. Adhere a 6 inches wide strip of polyethylene sheet over construction, control, and expansion joints with double beads of adhesive each side of joint.
  - 1. Tape seal joints.
- B. Apply adhesive to back of boards:
  - 1. Three continuous beads per board length.
- C. Install boards horizontally on foundation perimeter.
  - 1. Place boards to maximize adhesive contact.
  - 2. Install in running bond pattern.
  - 3. Butt edges and ends tightly to adjacent boards and to protrusions.
- D. Extend boards over expansion joints, unbonded to foundation on one side of joint.
- E. Cut and fit insulation tightly to protrusions or interruptions to the insulation plane.

### **3.03 BOARD INSTALLATION AT EXTERIOR WALLS**

- A. Install boards horizontally on walls.
  - 1. Install in running bond pattern.
- B. Cut and fit insulation tightly to protrusions or interruptions to the insulation plane.

### **3.04 BOARD INSTALLATION AT CAVITY WALLS**

- A. Install boards to fit snugly between wall ties.
- B. Install boards horizontally on walls.
- C. Cut and fit insulation tightly to protrusions or interruptions to the insulation plane.

### **3.05 BOARD INSTALLATION UNDER CONCRETE SLABS**

- A. Place insulation under slabs on grade after base for slab has been compacted.
- B. Cut and fit insulation tightly to protrusions or interruptions to the insulation plane.
- C. Prevent insulation from being displaced or damaged while placing vapor retarder and placing slab.

### **3.06 BATT INSTALLATION**

- A. Install insulation and vapor retarder in accordance with manufacturer's instructions.
- B. Install in exterior wall and roof spaces without gaps or voids. Do not compress insulation.
- C. Trim insulation neatly to fit spaces. Insulate miscellaneous gaps and voids.
- D. Fit insulation tightly in cavities and tightly to exterior side of mechanical and electrical services within the plane of the insulation.
- E. Tape seal tears or cuts in vapor retarder.

### **3.07 FIELD QUALITY CONTROL**

- A. See Section 01 4000 - Quality Requirements for additional requirements.
- B. Coordination of Air Barrier Association of America (ABAA) Tests and Inspections:
  - 1. Provide testing and inspection required by ABAA Quality Assurance Program (QAP).
  - 2. Notify ABAA in writing of schedule for air barrier work, and allow adequate time for testing and inspection.
  - 3. Cooperate with ABAA testing agency.
  - 4. Allow access to air barrier work areas and staging.
  - 5. Do not cover air barrier work until tested, inspected, and accepted.

### **3.08 PROTECTION**

- A. Do not permit installed insulation to be damaged prior to its concealment.

**END OF SECTION**

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**SECTION 07 2119  
FOAMED-IN-PLACE INSULATION**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Foamed-in-place insulation.
  - 1. In masonry cavity walls.
  - 2. In exterior framed walls.
  - 3. In exterior wall crevices.
  - 4. At junctions of dissimilar wall and roof materials.
  - 5. In underside of roofs and ceilings.
  - 6. In underside of floor decks.
- B. Foamed-in-place intumescent insulation, single-layer monolithic system.
- C. Protective intumescent coating.

**1.02 REFERENCE STANDARDS**

- A. ASTM C518 - Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus 2021.
- B. ASTM D1621 - Standard Test Method for Compressive Properties Of Rigid Cellular Plastics 2016.
- C. ASTM D1622 - Standard Test Method for Apparent Density of Rigid Cellular Plastics 2020.
- D. ASTM D1623 - Standard Test Method for Tensile And Tensile Adhesion Properties of Rigid Cellular Plastics 2017.
- E. ASTM D2842 - Standard Test Method for Water Absorption of Rigid Cellular Plastics 2019.
- F. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2021a.
- G. ASTM E96/E96M - Standard Test Methods for Gravimetric Determination of Water Vapor Transmission Rate of Materials 2021.
- H. ASTM E2178 - Standard Test Method for Determining Air Leakage Rate and Calculation of Air Permeance of Building Materials 2021a.
- I. FM 4880 - Evaluating the Fire Performance of Insulated Building Panel Assemblies and Interior Finish Materials 2017.
- J. NFPA 275 - Standard Method of Fire Tests for the Evaluation of Thermal Barriers 2017.
- K. NFPA 285 - Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Wall Assemblies Containing Combustible Components 2019.
- L. NFPA 286 - Standard Methods of Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth 2019.
- M. UL 1040 - Standard for Safety Fire Test of Insulated Wall Construction Current Edition, Including All Revisions.
- N. UL 1715 - Standard for Safety Fire Test of Interior Finish Material Current Edition, Including All Revisions.

**1.03 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide product description, insulation properties, overcoat properties, and preparation requirements.
- C. Certificates: Certify that products of this section meet or exceed specified requirements.
- D. ABAA Field Quality Control Submittals: Submit third-party reports of testing and inspection as required by ABAA QAP.

- E. ABAA Manufacturer Qualification: Submit documentation of current evaluation of proposed manufacturer and materials.
- F. ABAA Installer Qualification: Submit documentation of current contractor accreditation and current installer certification. Keep copies of all contractor accreditation and installer certification on site during and after installation. Present on-site documentation upon request.

#### **1.04 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Company specializing in manufacturing products of the type specified in this section, with not less than three years of documented experience.
- B. Installer Qualifications: Company specializing in performing work of the type specified, with minimum three years documented experience, and approved by manufacturer.
- C. Air Barrier Association of America (ABAA) Quality Assurance Program (QAP); [www.airbarrier.org/#sle](http://www.airbarrier.org/#sle):
  - 1. Installer Qualification: Use accredited contractor, certified installers, evaluated materials, and third-party field quality control audit.
  - 2. Manufacturer Qualification: Use evaluated materials from a single manufacturer regularly engaged in air barrier material manufacture. Use secondary materials approved in writing by primary material manufacturer.

#### **1.05 FIELD CONDITIONS**

- A. Do not apply foam when temperature is below that specified by the manufacturer for ambient air and substrate.

### **PART 2 PRODUCTS**

#### **2.01 MANUFACTURERS**

- A. Foamed-In-Place Insulation:
  - 1. BASF Corporation; WALLTITE US Series Closed Cell: [www.spf.basf.com/#sle](http://www.spf.basf.com/#sle).
  - 2. Johns Manville; JM Corbond III Closed Cell Spray Polyurethane Foam: [www.jm.com/#sle](http://www.jm.com/#sle).
  - 3. Substitutions: See Section 01 6000 - Product Requirements.
- B. Foamed-In-Place Intumescent Insulation:
  - 1. Preferred Solutions, Inc; Staycell ONE STEP 502 Monolithic System: [www.preferredsolutions.net/#sle](http://www.preferredsolutions.net/#sle).
  - 2. Substitutions: See Section 01 6000 - Product Requirements.

#### **2.02 MATERIALS**

- A. Foamed-In-Place Insulation: Low-density, flexible, open or closed cell, water vapor permeable polyurethane foam; foamed on-site, using blowing agent of water or non-ozone-depleting gas.
  - 1. Regulatory Requirements: Comply with applicable code for flame and smoke, concealment, and fire protection requirements.
    - a. Fire Protection: Provide 15 minute thermal barrier of 1/2 inch gypsum board or equivalent material complying with NFPA 275 test method, or foamed-in-place insulation either exposed or with covering that complies with FM 4880, NFPA 286, UL 1040, or UL 1715.
  - 2. Thermal Resistance: R-value of 3.0, minimum, per 1 inch thickness at 75 degrees F mean temperature when tested in accordance with ASTM C518.
  - 3. Air Permeance: 0.04 cfm per square foot, maximum, when tested at intended thickness in accordance with ASTM E2178 at 1.57 psf.
  - 4. Surface Burning Characteristics: Flame spread/Smoke developed index of 75/450, maximum, when tested in accordance with ASTM E84.
  - 5. Basis of Design:
    - a. Carlisle Spray Foam Insulation; SealTite Pro Open Cell: [www.carlislesfi.com/#sle](http://www.carlislesfi.com/#sle).
  - 6. Other Acceptable Manufacturers:
    - a. BASF Corporation; ENERTITE NM: [www.spf.basf.com/#sle](http://www.spf.basf.com/#sle).
    - b. Johns Manville; JM ocSPF Open Cell Spray Polyurethane Foam: [www.jm.com/#sle](http://www.jm.com/#sle).
  - 7. Substitutions: See Section 01 6000 - Product Requirements.



- B. Foamed-In-Place Insulation: Medium-density, rigid or semi-rigid, open or closed cell polyurethane foam; foamed on-site, using blowing agent of water or non-ozone-depleting gas.
  1. Regulatory Requirements: Comply with applicable code for flame and smoke, concealment, and fire protection requirements.
    - a. Fire Protection: Provide 15 minute thermal barrier of 1/2 inch gypsum board or equivalent material complying with NFPA 275 test method, or foamed-in-place insulation either exposed or with covering that complies with FM 4880, NFPA 286, UL 1040, or UL 1715.
  2. Thermal Resistance: R-value of 5.0, minimum, per 1 inch thickness at 75 degrees F mean temperature when tested in accordance with ASTM C518.
  3. Water Vapor Permeance: Vapor retarder; 2 perms, maximum, when tested at intended thickness in accordance with ASTM E96/E96M, desiccant method.
  4. Water Absorption: Less than 2 percent by volume, maximum, when tested in accordance with ASTM D2842.
  5. Air Permeance: 0.04 cfm per square foot, maximum, when tested at intended thickness in accordance with ASTM E2178 at 1.57 psf.
  6. Closed Cell Content: At least 90 percent.
  7. Surface Burning Characteristics: Flame spread/Smoke developed index of 75/450, maximum, when tested in accordance with ASTM E84.
  8. Basis of Design:
  9. Manufacturers:
    - a. BASF Corporation; WALLTITE US: [www.spf.basf.com/#sle](http://www.spf.basf.com/#sle).
    - b. Carlisle Spray Foam Insulation; SealTite Pro One Zero: [www.carlislesfi.com/#sle](http://www.carlislesfi.com/#sle).
    - c. Johns Manville; JM Corbond III Closed Cell Spray Polyurethane Foam: [www.jm.com/#sle](http://www.jm.com/#sle).
  10. Substitutions: See Section 01 6000 - Product Requirements.
- C. Foamed-In-Place Intumescent Insulation (Single-Layer Monolithic System): Medium-density, rigid, two-part, closed cell polyurethane foam; foamed on-site using blowing agent of non-ozone-depleting gas.
  1. Regulatory Requirements: Comply with applicable code for flame and smoke, concealment, and fire protection requirements.
    - a. Fire Protection: Provide 15 minute thermal barrier of 1/2 inch gypsum board or equivalent material complying with NFPA 275 test method, or foamed-in-place insulation either exposed or with covering that complies with FM 4880, NFPA 286, UL 1040, or UL 1715.
  2. Thermal Resistance: R-value of 5.7, minimum, per 1 inch thickness at 140 degrees F mean temperature, at 90 days, when tested in accordance with ASTM C518.
  3. Water Vapor Permeance: 0.99 perms, maximum, when tested at 3.5 inch thickness in accordance with ASTM E96/E96M.
  4. Air Permeance: 0.002 cfm per sq ft, maximum, when tested at 1 inch thickness in accordance with ASTM E2178 at 1.57 psf.
  5. Closed Cell Content: At least 90 percent.
  6. Density: 2.0 lbs/cu ft, nominal, in accordance with ASTM D1622.
  7. Tensile Strength: 55 psi, minimum, in accordance with ASTM D1623.
  8. Compressive Strength: 22 psi, minimum, in accordance with ASTM D1621.
  9. Surface Burning Characteristics: Flame spread/Smoke developed index of 75/450, maximum, at 4 inch thick when tested in accordance with ASTM E84.
  10. Basis of Design:
    - a. Preferred Solutions, Inc; Staycell ONE STEP 502 Single-Layer Monolithic System: [www.preferredsolutions.net/#sle](http://www.preferredsolutions.net/#sle).
  11. Substitutions: See Section 01 6000 - Product Requirements.

## 2.03 ACCESSORIES

- A. Primer: As required by insulation manufacturer.

- B. Protective Coating: Intumescent coating of type recommended by insulation manufacturer and as required to comply with applicable codes.
  - 1. Coating Type: Single component, water based.
  - 2. Protected Insulation Type: Spray polyurethane foam (SPF).
  - 3. Application: Apply using brush, roller, or airless sprayer.
  - 4. Fire Test: Flame spread index (FSI) of 0 (Zero) and smoke developed index (SDI) of 10 (Ten), when tested in accordance with ASTM E84.
  - 5. Flammability: Comply with applicable building code requirements.
  - 6. Exterior Wall System: Comply with NFPA 285.
  - 7. Color: White.
  - 8. Products:
    - a. International Fireproof Technology Inc; DC315 Intumescent Coating:  
[www.painttoprotect.com/#sle](http://www.painttoprotect.com/#sle).
    - b. Substitutions: See Section 01 6000 - Product Requirements.

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

- A. Verify work within construction spaces or crevices is complete prior to insulation application.
- B. Verify that surfaces are clean, dry, and free of matter that may inhibit insulation or overcoat adhesion.

#### **3.02 PREPARATION**

- A. Mask and protect adjacent surfaces from over spray or dusting.
- B. Apply primer in accordance with manufacturer's instructions.

#### **3.03 APPLICATION**

- A. Apply insulation in accordance with manufacturer's instructions.
- B. Apply protective coating to a uniform minimum thickness, to achieve fire rating required.

#### **3.04 FIELD QUALITY CONTROL**

- A. See Section 01 4000 - Quality Requirements for additional requirements.
- B. Field inspections and tests will be performed by an independent testing agency.
- C. Coordination of ABAA Tests and Inspections:
  - 1. Provide testing and inspection required by ABAA QAP.
  - 2. Notify in ABAA writing of schedule for air barrier work. Allow adequate time for testing and inspection.
  - 3. Cooperate with ABAA testing agency.
  - 4. Allow access to air barrier work areas and staging.
  - 5. Do not cover air barrier work until tested, inspected, and accepted.

#### **3.05 PROTECTION**

- A. Do not permit subsequent construction work to disturb applied insulation.

### **END OF SECTION**

**SECTION 07 2500  
WEATHER BARRIERS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Air Barriers: Materials that form a system to stop passage of air through exterior walls, joints between exterior walls and roof, joints around frames of openings in exterior walls, and doors.

**1.02 RELATED REQUIREMENTS**

- A. Section 06 1000 - Rough Carpentry: Sheathing with integral water-resistive and air barrier.
- B. Section 07 2100 - Thermal Insulation: Vapor retarder installed in conjunction with batt insulation.
- C. Section 07 6200 - Sheet Metal Flashing and Trim: Metal flashings installed in conjunction with weather barriers.

**1.03 DEFINITIONS**

- A. Air Barrier: Air tight barrier made of material that is relatively air impermeable but water vapor permeable, both to the degree specified, with sealed seams and with sealed joints to adjacent surfaces. Note: For the purposes of this specification, vapor impermeable air barriers are classified as vapor retarders.

**1.04 REFERENCE STANDARDS**

- A. ASTM E2178 - Standard Test Method for Determining Air Leakage Rate and Calculation of Air Permeance of Building Materials 2021a.

**1.05 SUBMITTALS**

- A. See Section 01 3300- Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on material characteristics.
- C. Shop Drawings: Provide drawings of special joint conditions.
- D. ABAA Field Quality Control Submittals: Submit third-party reports of testing and inspection required by ABAA QAP.
- E. Manufacturer's Installation Instructions: Indicate preparation.
- F. ABAA Manufacturer Qualification: Submit documentation of current evaluation of proposed manufacturer and materials.
- G. ABAA Installer Qualification: Submit documentation of current contractor accreditation and current installer certification; keep copies of each contractor accreditation and installer certification on site during and after installation, and present on-site documentation upon request.

**1.06 QUALITY ASSURANCE**

- A. Air Barrier Association of America (ABAA) Quality Assurance Program (QAP); [www.airbarrier.org/#sle](http://www.airbarrier.org/#sle):
  - 1. Installer Qualification: Use accredited contractor, certified installers, evaluated materials, and third-party field quality control audit.
  - 2. Manufacturer Qualification: Use evaluated materials from a single manufacturer regularly engaged in air barrier material manufacture, and use secondary materials approved in writing by primary material manufacturer.
- B. Air Barrier Association of America (ABAA) Evaluated Materials Program (EAP); [www.airbarrier.org/#sle](http://www.airbarrier.org/#sle): Use evaluated materials from a single manufacturer regularly engaged in air barrier material manufacture, and use secondary materials approved in writing by primary material manufacturer.

### **1.07 MOCK-UP**

- A. Install air barrier, vapor retarder, and water-resistive barrier materials in mock-up specified in Section 01 4000.

### **1.08 FIELD CONDITIONS**

- A. Maintain temperature and humidity recommended by the materials manufacturers before, during and after installation.

### **1.09 SPECIAL BUILDING ENCLOSURE WARRANTY**

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.

## **PART 2 PRODUCTS**

### **2.01 WEATHER BARRIER ASSEMBLIES**

- A. Air Barrier:
  - 1. On outside surface of sheathing of exterior walls use air barrier sheet, mechanically fastened type.

### **2.02 AIR BARRIER MATERIALS (WATER VAPOR PERMEABLE AND WATER-RESISTIVE)**

- A. Air Barrier Sheet, Mechanically Fastened:
  - 1. Air Permeance: 0.004 cfm/sq ft, maximum, when tested in accordance with ASTM E2178.
  - 2. Surface Burning Characteristics: Flame spread index of 25 or less, and smoke developed index of 50 or less, when tested in accordance with ASTM E84.
  - 3. Complies with NFPA 285 wall assembly requirements.
  - 4. Water Resistance: Comply with applicable water-resistive requirements of ICC-ES AC38.
  - 5. Seam and Perimeter Tape: Polyethylene self adhering type, mesh reinforced, 2 inches wide, compatible with sheet material; unless otherwise specified.
  - 6. Manufacturers:
    - a. DuPont de Nemours, Inc; Tyvek CommercialWrap D with Tyvek Fluid Applied Flashing - Brush Formulation, Tyvek Fluid Applied Flashing and Joint Compound, FlexWrap NF, StraightFlash, StraightFlash VF, Tyvek Wrap Caps, and Tyvek Tape: [building.dupont.com/#sle](http://building.dupont.com/#sle).
    - b. Fortifiber Building Systems Group; WeatherSmart Commercial: [www.fortifiber.com/#sle](http://www.fortifiber.com/#sle).
    - c. Kingspan Insulation LLC; GreenGuard MAX Building Wrap: [www.trustgreenguard.com/#sle](http://www.trustgreenguard.com/#sle).
    - d. National Shelter Products, Inc; DRYLine W: [www.drylinewrap.com/#sle](http://www.drylinewrap.com/#sle).
    - e. Substitutions: See Section 01 6000 - Product Requirements.

### **2.03 ACCESSORIES**

- A. Sealants, Tapes, and Accessories for Sealing Weather Barrier and Sealing Weather Barrier to Adjacent Substrates: As specified or as recommended by weather barrier manufacturer.
- B. Sealant for Cracks and Joints In Substrates: Resilient elastomeric joint sealant compatible with substrates and waterproofing materials.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that surfaces and conditions are ready to accept the work of this section.

### **3.02 PREPARATION**

- A. Remove projections, protruding fasteners, and loose or foreign matter that might interfere with proper installation.
- B. Clean and prime substrate surfaces to receive adhesives in accordance with manufacturer's instructions.

### **3.03 INSTALLATION**

- A. Install materials in accordance with manufacturer's instructions.

- B. Air Barriers: Install continuous air tight barrier over surfaces indicated, with sealed seams and with sealed joints to adjacent surfaces.
- C. Mechanically Fastened Sheets - On Exterior:
  - 1. Install sheets shingle-fashion to shed water, with seams generally horizontal.
  - 2. Overlap seams as recommended by manufacturer but at least 6 inches.
  - 3. Overlap at outside and inside corners as recommended by manufacturer but at least 12 inches.
  - 4. For applications specified to be air tight, seal seams, laps, penetrations, tears, and cuts with self-adhesive tape; use only large-headed, gasketed fasteners recommended by the manufacturer.
  - 5. Where stud framing rests on concrete or masonry, extend lower edge of sheet at least 4 inches below bottom of framing and seal to foundation with sealant.
  - 6. Install air barrier and vapor retarder underneath the jamb flashings.
  - 7. At openings to be filled with frames having nailing flanges, wrap excess sheet into opening; at head, seal sheet over flange and flashing.

#### **3.04 FIELD QUALITY CONTROL**

- A. See Section 01 4000 - Quality Requirements for additional requirements.
- B. Coordination of ABAA Tests and Inspections:
  - 1. Provide testing and inspection required by ABAA QAP.
  - 2. Notify ABAA in writing of schedule for air barrier work, and allow adequate time for testing and inspection.
  - 3. Cooperate with ABAA testing agency.
  - 4. Do not cover air barrier work until tested, inspected, and accepted.
- C. Do not cover installed weather barriers until required inspections have been completed.
- D. Obtain approval of installation procedures by the weather barrier manufacturer based on a mock-up installed in place, prior to proceeding with remainder of installation.

#### **3.05 PROTECTION**

- A. Do not leave materials exposed to weather longer than recommended by manufacturer.

**END OF SECTION**

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**SECTION 07 4213  
METAL WALL PANELS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Manufactured metal panels for soffit panels, with insulation, related flashings, and accessory components.

**1.02 RELATED REQUIREMENTS**

- A. Section 05 4000 - Cold-Formed Metal Framing: Wall panel substrate.
- B. Section 07 9200 - Joint Sealants: Sealing joints between metal wall panel system and adjacent construction.

**1.03 REFERENCE STANDARDS**

- A. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2021a.

**1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data - Soffit System: Manufacturer's data sheets on each product to be used, including:
  - 1. Physical characteristics of components shown on shop drawings.
  - 2. Storage and handling requirements and recommendations.
  - 3. Installation instructions and recommendations.
- C. Manufacturer's qualification statement.

**1.05 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of documented experience.

**1.06 DELIVERY, STORAGE, AND HANDLING**

- A. See Section 01 7419 - Construction Waste Management and Disposal for packaging waste requirements.
- B. Store prefabricated material off the ground and protected from weather; prevent twisting, bending, or abrasion; provide ventilation; slope metal sheets to ensure proper drainage.

**1.07 WARRANTY**

- A. See Section 01 7800 - Closeout Submittals for additional warranty requirements.

**PART 2 PRODUCTS**

**2.01 MANUFACTURERS**

- A. Basis of Design:
  - 1. Metal Soffit Panels: Una-Clad UC-501 manufactured by Firestone Building Products.
- B. Other Acceptable Manufacturers - Metal Soffit Panels:
  - 1. Petersen Aluminum Corporation; PAC-750 Soffit: [www.pac-clad.com/#sle](http://www.pac-clad.com/#sle).
  - 2. Substitutions: See Section 01 6000 - Product Requirements.

**2.02 METAL WALL PANEL MATERIALS**

- A. Soffit Panel System: Factory fabricated prefabricated metal panel system, site assembled.
  - 1. Provide soffit panels.
  - 2. Design and size components to support assembly dead loads, and to withstand live loads caused by positive and negative wind pressure acting normal to plane of wall.
  - 3. Maximum Allowable Deflection of Panel: L/180 for length(L) of span.
  - 4. Movement: Accommodate movement within system without damage to components or deterioration of seals, movement between system and perimeter components when subject to seasonal temperature cycling; dynamic loading and release of loads; and

- deflection of structural support framing.
5. Fabrication: Formed true to shape, accurate in size, square, and free from distortion or defects; pieces of longest practical lengths.
- B. Soffit Panels:
1. Profile: UC-501 Reveal Flush Panel, with venting not provided.
  2. Color: As selected by Architect from manufacturer's standard line.
- C. Internal and External Corners: Same material, thickness, and finish as exterior sheets; profile to suit system; shop cut and factory mitered to required angles.
- D. Expansion Joints: Same material, thickness and finish as exterior sheets; [ ] gauge, [ ] inch thick; manufacturer's standard brake formed type, of profile to suit system.
- E. Trim: Same material, thickness and finish as exterior sheets; brake formed to required profiles.
- F. Anchors: Concealed.

### **PART 3 EXECUTION**

#### **3.01 INSTALLATION**

- A. Install panels on soffits in accordance with manufacturer's instructions.
- B. Use concealed fasteners unless otherwise approved by Architect.

#### **3.02 CLEANING**

- A. See Section 01 7000 - Execution and Closeout Requirements for additional requirements.
- B. Remove site cuttings from finish surfaces.
- C. Remove protective material from wall panel surfaces.

**END OF SECTION**



**SECTION 07 4646  
FIBER-CEMENT SIDING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Fiber-cement siding.

**1.02 RELATED REQUIREMENTS**

- A. Section 05 4000 - Cold-Formed Metal Framing: Water-resistive barrier under siding.
- B. Section 06 1000 - Rough Carpentry: Siding substrate.
- C. Section 06 1000 - Rough Carpentry: Water-resistive barrier under siding.
- D. Section 07 9200 - Joint Sealants: Sealing joints between siding and adjacent construction and fixtures.
- E. Section 09 9113 - Exterior Painting: Field painting.

**1.03 REFERENCE STANDARDS**

- A. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process 2020.
- B. ASTM C1186 - Standard Specification for Flat Fiber-Cement Sheets 2008 (Reapproved 2016).
- C. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2021a.

**1.04 SUBMITTALS**

- A. See Section 01 3300- Administrative Re for submittal procedures.
- B. Product Data: Submit manufacturer's data sheets on each product to be used, including:
  - 1. Manufacturer's requirements for related materials to be installed by others.
  - 2. Preparation instructions and recommendations.
  - 3. Storage and handling requirements and recommendations.
  - 4. Installation methods, including nail patterns.
- C. Shop Drawings: Indicate dimensions, layout, joints, construction details, support clips, and methods of anchorage.
- D. Installer's Qualification Statement.
- E. Warranty: Submit copy of manufacturer's warranty, made out in Owner's name, showing that it has been registered with manufacturer.

**1.05 QUALITY ASSURANCE**

- A. Installer Qualifications: Company specializing in performing work of the type specified in this section with minimum three years of experience.

**1.06 DELIVERY, STORAGE, AND HANDLING**

- A. Store products under waterproof cover and elevated above grade, on a flat surface.

**1.07 WARRANTY**

- A. See Section 01 7800 - Closeout Submittals for additional warranty requirements.
- B. Provide multi-year manufacturer warranty as indicated under Siding article sub-heading "Warranty".

**PART 2 PRODUCTS**

**2.01 FIBER-CEMENT SIDING**

- A. Lap Siding: Individual horizontal boards made of cement and cellulose fiber formed under high pressure with integral surface texture, complying with ASTM C1186, Type A, Grade II; with machined edges, for nail attachment.
  - 1. Style: Standard lap style.

2. Texture: Smooth.
3. Length: 12 ft, nominal.
4. Width (Height): 7-1/2 inches.
5. Thickness: 5/16 inch, nominal.
6. Finish: Unfinished.
7. Warranty: 50 year limited; transferable.
8. Products:
  - a. James Hardie Building Products, Inc; [ ]: [www.jameshardie.com/#sle](http://www.jameshardie.com/#sle).
  - b. Substitutions: See Section 01 6000 - Product Requirements.

## **2.02 ACCESSORIES**

- A. Cladding Support Clips: Thermally-broken, galvanized steel clips for support of cladding z-girts, angles, channels and other framing.
  1. Galvanized Steel Sheet: ASTM A653/A653M, with G90/Z275 galvanized coating.
  2. Products:
    - a. Northern Facades; ISO Clip: [www.northernfacades.com/#sle](http://www.northernfacades.com/#sle).
    - b. Substitutions: See Section 01 6000 - Product Requirements.
- B. Trim: Same material and texture as siding.
- C. Fasteners: Galvanized or corrosion resistant; length as required to penetrate, 1-1/4 inch, minimum.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Examine substrate, clean and repair as required to eliminate conditions that would be detrimental to proper installation.
- B. Verify that water-resistant barrier has been installed over substrate completely and correctly; see Section 05 4000.
- C. Do not begin until unacceptable conditions have been corrected.
- D. If substrate preparation is responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

### **3.02 PREPARATION**

- A. Install Sheet Metal Flashing:

### **3.03 INSTALLATION**

- A. Install in accordance with manufacturer's instructions and recommendations.
  1. Read warranty and comply with terms necessary to maintain warranty coverage.
  2. Use trim details indicated on drawings.
  3. Touch up field cut edges before installing.
  4. Pre-drill nail holes if necessary to prevent breakage.
- B. Joints in Horizontal Siding: Avoid joints in lap siding except at corners; where joints are inevitable stagger joints between successive courses.
- C. Do not install siding less than 6 inches from surface of ground nor closer than 1 inch to roofs, patios, porches, and other surfaces where water may collect.
- D. After installation, seal joints except lap joints of lap siding; seal around penetrations, and paint exposed cut edges.

### **3.04 PROTECTION**

- A. Protect installed products until Date of Substantial Completion.
- B. Touch-up, repair or replace damaged products before Date of Substantial Completion.

## **END OF SECTION**

**SECTION 07 5323**  
**ETHYLENE-PROPYLENE-DIENE-MONOMER ROOFING (EPDM) - FIRESTONE**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. EPDM membrane roofing system, including components specified.
- B. Comply with published recommendations and instructions of roofing membrane manufacturer at; <https://www.firestonebpco.com/us-en>.
- C. Commencement of work by Contractor constitutes acknowledgement by Contractor that this specification can be satisfactorily executed, under project conditions and with necessary prerequisites for warranty acceptance by roofing membrane manufacturer. No modification of Contract Sum will be made for failure to adequately examine Contract Documents or project conditions.

**1.02 RELATED REQUIREMENTS**

- A. Section 06 1000 - Rough Carpentry: Wood nailers associated with roofing and roof insulation.
- B. Section 07 6200 - Sheet Metal Flashing and Trim: Formed metal flashing and trim items associated with roofing.
- C. Section 07 7200 - Roof Accessories: Roof hatches, vents, and manufactured curbs.
- D. Section 22 1006 - Plumbing Piping Specialties: Roof drains.

**1.03 DEFINITIONS**

- A. Roofing Terminology: Refer to ASTM D1079 for definition of terms related to roofing work not otherwise defined in section.
- B. LTTR: Long Term Thermal Resistance, as defined by CAN-ULC-S770.

**1.04 REFERENCE STANDARDS**

- A. ASTM C177 - Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus 2019.
- B. ASTM C209 - Standard Test Methods for Cellulosic Fiber Insulating Board 2020.
- C. ASTM C473 - Standard Test Methods for Physical Testing of Gypsum Panel Products 2019.
- D. ASTM C518 - Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus 2021.
- E. ASTM C1177/C1177M - Standard Specification for Glass Mat Gypsum Substrate for Use as Sheathing 2017.
- F. ASTM C1289 - Standard Specification for Faced Rigid Cellular Polyisocyanurate Thermal Insulation Board 2021.
- G. ASTM D1079 - Standard Terminology Relating to Roofing and Waterproofing 2020.
- H. ASTM D1621 - Standard Test Method for Compressive Properties Of Rigid Cellular Plastics 2016.
- I. ASTM D1622 - Standard Test Method for Apparent Density of Rigid Cellular Plastics 2020.
- J. ASTM D3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber 2016.
- K. ASTM D4637/D4637M - Standard Specification for EPDM Sheet Used in Single-Ply Roof Membrane 2015 (Reapproved 2021).
- L. ASTM D4811/D4811M - Standard Specification for Nonvulcanized (Uncured) Rubber Sheet Used as Roof Flashing 2016.

- M. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2021a.
- N. ASTM E136 - Standard Test Method for Assessing Combustibility of Materials Using a Vertical Tube Furnace at 750°C 2019a.
- O. CAN-ULC-S770 - Standard Test Method for Determination of Long-Term Thermal Resistance Of Closed-Cell Thermal Insulating Foams 2020 Reaffirmed.
- P. FM 4470 - Single-Ply, Polymer-Modified Bitumen Sheet, Built-Up Roof (BUR) and Liquid Applied Roof Assemblies for Use in Class 1 and Noncombustible Roof Deck Construction 2016.
- Q. FM DS 1-28 - Wind Design 2016.
- R. FM DS 1-29 - Roof Deck Securement and Above-Deck Roof Components 2016, with Editorial Revision (2020).

#### **1.05 ADMINISTRATIVE REQUIREMENTS**

- A. Pre-Installation Conference: Before start of roofing work, Contractor shall hold a meeting to discuss the proper installation of materials and requirements to achieve the warranty.
  - 1. Require attendance with all parties directly influencing the quality of roofing work or affected by the performance of roofing work.
  - 2. Notify Construction Manager and Architect well in advance of meeting.

#### **1.06 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data:
  - 1. Provide membrane manufacturer's printed data sufficient to show that components of roofing system, including insulation and fasteners, comply with specified requirements and with membrane manufacturer's requirements and recommendations for system type specified; include data for each product used in conjunction with roofing membrane.
- C. Samples: Submit samples of each product to be used.
- D. Shop Drawings: Provide:
  - 1. The roof membrane manufacturer's standard details customized for this project for all relevant conditions, including flashings, base tie-ins, roof edges, terminations, expansion joints, penetrations, and drains.
  - 2. For tapered insulation, provide project-specific layout and dimensions for each board.
- E. Specimen Warranty: Submit prior to starting work.
- F. Installer Qualifications: Letter from manufacturer attesting that the roofing installer meets the specified qualifications.
- G. Executed Warranty.

#### **1.07 QUALITY ASSURANCE**

- A. Installer Qualifications: Roofing installer shall have the following:
  - 1. Current Firestone Master Contractor status.
  - 2. At least five years experience in installing specified system.
  - 3. Capability to provide payment and performance bond to building owner.

#### **1.08 DELIVERY, STORAGE AND HANDLING**

- A. Deliver products in manufacturer's original containers, dry and undamaged, with seals and labels intact and legible.
- B. Store materials clear of ground and moisture with weather protective covering.
- C. Keep combustible materials away from ignition sources.

## 1.09 WARRANTY

- A. See Section 01 7800 - Closeout Submittals for additional warranty requirements.
- B. Comply with all warranty procedures required by manufacturer, including notifications, scheduling, and inspections.
- C. Warranty: Firestone **25 Year** Limited Warranty covering membrane, roof insulation, and other indicated components of the system, for the term indicated.
  - 1. Limit of Liability: No dollar limitation.
  - 2. Scope of Coverage: Repair leaks in the roofing system caused by:
    - a. Ordinary wear and tear of the elements.
    - b. Manufacturing defect in Firestone brand materials.
    - c. Defective workmanship used to install these materials.
    - d. Damage due to winds up to 90 mph.
  - 3. Not Covered:
    - a. Damage due to winds in excess of 90 mph.
    - b. Damage due hurricanes or tornadoes.
    - c. Hail.
    - d. Intentional damage.
    - e. Unintentional damage due to normal rooftop inspections, maintenance, or service.

## PART 2 PRODUCTS

### 2.01 MANUFACTURERS

- A. Acceptable Manufacturer - Roofing System: Firestone Building Products LLC, Nashville, TN: [www.firestonebpco.com/#sle](http://www.firestonebpco.com/#sle).
  - 1. Roofing systems manufactured by others are acceptable provided the roofing system is completely equivalent in materials and warranty conditions and the manufacturer meets the following qualifications:
    - a. Specializing in manufacturing the roofing system to be provided.
    - b. Minimum ten years of experience manufacturing the roofing system to be provided.
    - c. Able to provide a no dollar limit, single source roof system warranty that is backed by corporate assets in excess of one billion dollars.
- B. Manufacturer of Insulation and Cover Boards: Same manufacturer as roof membrane.
- C. Manufacturer of Metal Roof Edging: Same manufacturer as roof membrane.
  - 1. Metal roof edging products by other manufacturers are not acceptable.
  - 2. Field- or shop-fabricated metal roof edgings are not acceptable.
- D. Substitutions: See Section 01 6000 - Product Requirements.
  - 1. Submit evidence that the proposed substitution complies with the specified requirements.

### 2.02 ROOFING SYSTEM DESCRIPTION

- A. Roofing System: Ethylene-propylene-diene-monomer (EPDM) single-ply membrane.
  - 1. Membrane Attachment: Fully adhered.
  - 2. Warranty: Full system warranty; Firestone 25 year Red Shield Limited Warranty covering membrane, roof insulation, and membrane accessories.
  - 3. Comply with applicable local building code requirements.
  - 4. Provide assembly complying with Factory Mutual Corporation (FM) Roof Assembly Classification, FM DS 1-28 and FM DS 1-29, and meeting minimum requirements of FM 1-90 wind uplift rating.
- B. Roofing System Components: Listed in order from the top of the roof down:
  - 1. Membrane: Thickness as specified.
  - 2. Insulation Cover Board: High density polyisocyanurate; mechanically attached
  - 3. Insulation:

- a. Total R-value: 25, minimum.
- b. Top Layer: Polyisocyanurate foam board, non-composite; mechanically fastened.
- c. Bottom Layer: Polyisocyanurate foam board, non-composite; mechanically fastened.
4. Deck Cover Board: Gypsum-based board, 5/8 inch thick; loose-laid, no attachment.

### **2.03 EPDM MEMBRANE MATERIALS**

- A. Roofing and Flashing Membrane: Black, cured synthetic single-ply membrane composed of ethylene-propylene-diene-monomer (EPDM) with the following properties:
  1. Reinforcement: None; membrane complying with ASTM D4637/D4637M Type I.
  2. Thickness: 0.060 inch.
  3. Nominal Thickness Tolerance: Plus/minus 10 percent.
  4. Acceptable Product: Low Slope Fire Retardant (LSFR) RubberGard EPDM Membrane by Firestone.
- B. Membrane Fasteners: Type and size as required by roof membrane manufacturer for roofing system and warranty to be provided; use only fasteners furnished by roof membrane manufacturer.
- C. Flashing Membrane: Self-curing, non-reinforced membrane composed of nonvulcanized EPDM rubber, complying with ASTM D4811/D4811M Type II, and with the following properties:
  1. Thickness: 0.055 inch.
  2. Acceptable Product: RubberGard EPDM FormFlash by Firestone.
- D. Self-Adhesive Flashing Membrane: Semi-cured 45 mil EPDM membrane laminated to 35 mil EPDM tape adhesive; QuickSeam Flashing by Firestone.
- E. Pre-Molded Pipe Flashings: EPDM, molded for quick adaptation to different sized pipes; Firestone EPDM Pipe Flashing.
- F. Self-Adhesive Lap Splice Tape: 35 mil EPDM-based, formulated for compatibility with EPDM membrane and high-solids primer; QuickSeam Splice Tape by Firestone.
- G. Splice Adhesive: Synthetic polymer-based, formulated for compatibility with EPDM membrane and metal surfaces; SA-1065 Splice Adhesive by Firestone.
- H. Adhesive Primer: Synthetic rubber based primer formulated for compatibility with EPDM membrane and tape adhesive, with VOC content less than 2.1 lb/gal; QuickPrime Plus LVOC by Firestone.
- I. Seam Edge Treatment: EPDM rubber-based sealant, formulated for sealing exposed edges of membrane at seams; Lap Sealant HS by Firestone.
- J. Pourable Sealer: Two-part polyurethane, two-color for reliable mixing; Firestone Pourable Sealer S-10.
- K. Water Block Seal: Butyl rubber sealant for use between two surfaces, not exposed; Water Block Seal by Firestone.
- L. Metal Plates and Strips Used for Fastening Membrane and Insulation: Steel with Galvalume coating; corrosion-resistance meeting FM 4470 criteria.
- M. Termination Bars: Aluminum bars with integral caulk ledge; 1.3 inches wide by 0.10 inch thick; Firestone Termination Bar by Firestone.

### **2.04 ROOF INSULATION AND COVER BOARDS**

- A. Polyisocyanurate Board Insulation: Closed cell polyisocyanurate foam with glass reinforced mat laminated to faces, complying with ASTM C1289 Type II Class 1, with the following characteristics:
  1. Thickness: As indicated elsewhere.
  2. Size: 48 inches by 96 inches, nominal.
    - a. Exception: Insulation to be attached using adhesive or asphalt may be no larger than 48 inches by 48 inches, nominal.

3. R-value (LTTR):
    - a. 1.0 inch Thickness: 6.0, minimum.
    - b. 1.25 inch Thickness: 7.5, minimum.
    - c. 1.5 inch Thickness: 9.0, minimum.
    - d. 1.75 inch Thickness: 10.5, minimum.
    - e. 2.0 inch Thickness: 12.1, minimum.
    - f. 3.0 inch Thickness: 18.5, minimum.
    - g. 4.0 inch Thickness: 25.0, minimum.
  4. Compressive Strength: 20 psi when tested in accordance with ASTM C1289.
  5. Ozone Depletion Potential: Zero; made without CFC or HCFC blowing agents.
  6. Recycled Content: 19 percent post-consumer and 15 percent pre-consumer (post-industrial), average.
- B. High Density Polyisocyanurate Cover Board: Water resistant, high density closed cell polyisocyanurate core with coated glass mat facers complying with ASTM C1289 Type II, Class 4, and the following characteristics:
1. Size: 48 inches by 96 inches, nominal.
  2. Thickness: 1/2 inch.
  3. Thermal Value: R-value of 2.5, when tested in accordance with ASTM C518 and ASTM C177.
  4. Surface Water Absorption: 3 percent, maximum, when tested in accordance with ASTM C209.
  5. Compressive Strength: 120 psi, when tested in accordance with ASTM D1621.
  6. Density: 5 pcf, when tested in accordance with ASTM D1622.
  7. Factory Mutual approved for use with FM 1-60 and 1-90 rated roofing assemblies.
  8. Mold Growth Resistance: Passing ASTM D3273.
- C. Gypsum-Based Cover Board: Non-combustible, water resistant gypsum core with embedded glass mat facers, complying with ASTM C1177/C1177M, and the following characteristics:
1. Size: 48 inches by 96 inches, nominal.
    - a. Exception: Board to be attached using adhesive or asphalt may be no larger than 48 inches by 48 inches, nominal.
  2. Thickness: As indicated elsewhere.
  3. Surface Water Absorption: 2.5 g, maximum, when tested in accordance with ASTM C473.
  4. Spanning Capability: Recommended by manufacturer for following minimum flute spans:
  5. Surface Burning Characteristics: Flame spread index of 0 (zero), smoke developed index of 0 (zero), when tested in accordance with ASTM E84.
  6. Combustibility: Non-combustible, when tested in accordance with ASTM E136.
  7. Factory Mutual approved for use with FM 1-60 and 1-90 rated roofing assemblies.
  8. Mold Growth Resistance: Zero growth, when tested in accordance with ASTM D3273 for minimum of 4 weeks.
- D. Insulation Fasteners: Type and size as required by roof membrane manufacturer for roofing system and warranty to be provided; use only fasteners furnished by roof membrane manufacturer.

## **PART 3 INSTALLATION**

### **3.01 GENERAL**

- A. Install roofing, insulation, flashings, and accessories in accordance with roofing manufacturer's published instructions and recommendations for the specified roofing system. Where manufacturer provides no instructions or recommendations, follow good roofing practices and industry standards. Comply with federal, state, and local regulations.
- B. Obtain all relevant instructions and maintain copies at project site for duration of installation period.

- C. Do not start work until Pre-Installation Notice has been submitted to manufacturer as notification that this project requires a manufacturer's warranty.
- D. Perform work using competent and properly equipped personnel.
- E. Temporary closures, which ensure that moisture does not damage any completed section of the new roofing system, are the responsibility of the applicator. Completion of flashings, terminations, and temporary closures shall be completed as required to provide a watertight condition.
- F. Install roofing membrane only when surfaces are clean, dry, smooth and free of snow or ice; do not apply roofing membrane during inclement weather or when ambient conditions will not allow proper application; consult manufacturer for recommended procedures during cold weather. Do not work with sealants and adhesives when material temperature is outside the range of 60 to 80 degrees F.
- G. Protect adjacent construction, property, vehicles, and persons from damage related to roofing work; repair or restore damage caused by roofing work.
  - 1. Protect from spills and overspray from bitumen, adhesives, sealants and coatings.
  - 2. Particularly protect metal, glass, plastic, and painted surfaces from bitumen, adhesives, and sealants within the range of wind-borne overspray.
  - 3. Protect finished areas of the roofing system from roofing related work traffic and traffic by other trades.
- H. Until ready for use, keep materials in their original containers as labeled by the manufacturer.
- I. Consult membrane manufacturer's instructions, container labels, and Material Safety Data Sheets (MSDS) for specific safety instructions. Keep all adhesives, sealants, primers and cleaning materials away from all sources of ignition.

### **3.02 EXAMINATION**

- A. Examine roof deck to determine that it is sufficiently rigid to support installers and their mechanical equipment and that deflection will not strain or rupture roof components or deform deck.
- B. Verify that surfaces and site conditions are ready to receive work. Correct defects in the substrate before commencing with roofing work.
- C. Examine roof substrate to verify that it is properly sloped to drains.
- D. Verify that the specifications and drawing details are workable and not in conflict with the roofing manufacturer's recommendations and instructions; start of work constitutes acceptable of project conditions and requirements.

### **3.03 PREPARATION**

- A. Take appropriate measures to ensure that fumes from adhesive solvents are not drawn into the building through air intakes.
- B. Prior to proceeding, prepare roof surface so that it is clean, dry, and smooth, and free of sharp edges, fins, roughened surfaces, loose or foreign materials, oil, grease and other materials that may damage the membrane.
- C. Fill surface voids in immediate substrate that are greater than 1/4 inch wide with fill material acceptable to insulation and membrane manufacturers.
- D. Seal, grout, or tape deck joints, where needed, to prevent bitumen seepage into building.

### **3.04 INSULATION AND COVER BOARD INSTALLATION**

- A. Install insulation in configuration and with attachment method(s) specified in PART 2, under Roofing System.
- B. Install only as much insulation as can be covered with the completed roofing system before the end of the day's work or before the onset of inclement weather.



- C. Lay roof insulation in courses parallel to roof edges.
- D. Neatly and tightly fit insulation to all penetrations, projections, and nailers, with gaps not greater than 1/4 inch. Fill gaps greater than 1/4 inch with acceptable insulation. Do not leave the roofing membrane unsupported over a space greater than 1/4 inch.
- E. Mechanical Fastening: Using specified fasteners and insulation plates engage fasteners through insulation into deck to depth and in pattern required by Factory Mutual for FM Class specified in PART 2 and membrane manufacturer, whichever is more stringent.

### **3.05 SINGLE-PLY MEMBRANE INSTALLATION**

- A. Beginning at low point of roof, place membrane without stretching over substrate and allow to relax at least 30 minutes before attachment or splicing; in colder weather allow for longer relax time.
- B. Lay out the membrane pieces so that field and flashing splices are installed to shed water.
- C. Install membrane without wrinkles and without gaps or fishmouths in seams; bond and test seams and laps in accordance with membrane manufacturer's instructions and details.
- D. Install membrane adhered to the substrate, with edge securement as specified.
- E. Adhered Membrane: Bond membrane sheet to substrate using membrane manufacturer's recommended bonding material, application rate, and procedures.
- F. Edge Securement: Secure membrane at all locations where membrane terminates or goes through an angle change greater than 2 in 12 inches using mechanically fastened reinforced perimeter fastening strips, plates, or metal edging as indicated or as recommended by roofing manufacturer.
  - 1. Exceptions: Round pipe penetrations less than 18 inches in diameter and square penetrations less than 4 inches wide.
  - 2. Metal edging is not merely decorative; ensure anchorage of membrane as intended by roofing manufacturer.

### **3.06 FLASHING AND ACCESSORIES INSTALLATION**

- A. Install flashings, including laps, splices, joints, bonding, adhesion, and attachment, as required by membrane manufacturer's recommendations and details.
- B. Metal Accessories: Install metal edgings, gravel stops, and copings in locations indicated on the drawings, with horizontal leg of edge member over membrane and flashing over metal onto membrane.
  - 1. Follow roofing manufacturer's instructions.
  - 2. Remove protective plastic surface film immediately before installation.
  - 3. Install water block sealant under the membrane anchorage leg.
  - 4. Flash with manufacturer's recommended flashing sheet unless otherwise indicated.
  - 5. Where single application of flashing will not completely cover the metal flange, install additional piece of flashing to cover the metal edge.
  - 6. If the roof edge includes a gravel stop and sealant is not applied between the laps in the metal edging, install an additional piece of self-adhesive flashing membrane over the metal lap to the top of the gravel stop; apply seam edge treatment at the intersections of the two flashing sections.
  - 7. When the roof slope is greater than 1:12, apply seam edge treatment along the back edge of the flashing.

### **3.07 FINISHING AND WALKWAY INSTALLATION**

- A. Install walkways at access points to the roof, around rooftop equipment that may require maintenance, and where indicated on the drawings.

### **3.08 FIELD QUALITY CONTROL**

- A. Inspection by Manufacturer: Provide final inspection of the roofing system by a Technical Representative employed by roofing system manufacturer specifically to inspect installation for warranty purposes (i.e. not a sales person).
- B. Perform all corrections necessary for issuance of warranty.

### **3.09 CLEANING**

- A. Clean all contaminants generated by roofing work from building and surrounding areas, including bitumen, adhesives, sealants, and coatings.
- B. Repair or replace building components and finished surfaces damaged or defaced due to the work of this section; comply with recommendations of manufacturers of components and surfaces.
- C. Remove leftover materials, trash, debris, equipment from project site and surrounding areas.

### **3.10 PROTECTION**

- A. Where construction traffic must continue over finished roof membrane, provide durable protection and replace or repair damaged roofing to original condition.

**END OF SECTION**

**SECTION 07 6100  
SHEET METAL ROOFING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Sheet metal roofing, associated flashings, and underlayment.
- B. Counterflashings.
- C. Gutters and downspouts.
- D. Snow guards.
- E. Integral fascias and soffits.
- F. Sealants for joints within sheet metal fabrications.

**1.02 RELATED REQUIREMENTS**

- A. Section 07 7200 - Roof Accessories: Manufactured accessories.

**1.03 REFERENCE STANDARDS**

- A. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum 2020.
- B. ASTM B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate 2014.
- C. ASTM B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate (Metric) 2014.
- D. ASTM C920 - Standard Specification for Elastomeric Joint Sealants 2018.
- E. ASTM D1970/D1970M - Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep Roofing Underlayment for Ice Dam Protection 2021.
- F. ASTM E96/E96M - Standard Test Methods for Gravimetric Determination of Water Vapor Transmission Rate of Materials 2021.
- G. ASTM E108 - Standard Test Methods for Fire Tests of Roof Coverings 2020a.
- H. ICC-ES AC188 - Acceptance Criteria for Roof Underlayments 2012, with Editorial Revision (2015).
- I. SMACNA (ASMM) - Architectural Sheet Metal Manual 2012.

**1.04 ADMINISTRATIVE REQUIREMENTS**

- A. Preinstallation Meeting: Convene one week before starting work of this section.

**1.05 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on metal types, finishes, characteristics.
- C. Shop Drawings: Indicate material profile, jointing pattern, jointing details, fastening methods, flashings, terminations, and installation details.
- D. Installation Samples: Submit two samples 12 by 12 inch in size illustrating metal roofing mounted on plywood backing illustrating typical seam.
- E. Color Samples: Submit two samples 2 by 2 inch in size illustrating metal finish color.

**1.06 QUALITY ASSURANCE**

- A. Perform work in accordance with SMACNA (ASMM) requirements and standard details, except as otherwise noted.
- B. Installer Qualifications: Company specializing in performing sheet metal roof installations with minimum 10 years of experience.

**1.07 DELIVERY, STORAGE, AND HANDLING**

- A. Stack material to prevent twisting, bending, or abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.

- B. Prevent contact with materials that could cause discoloration or staining.

#### **1.08 WARRANTY**

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.
- B. Correct defective Work within a five year period after Date of Substantial Completion. Defective work includes degradation of metal finish.

### **PART 2 PRODUCTS**

#### **2.01 MANUFACTURERS**

- A. Sheet Metal Roofing Manufacturers:
  - 1. Petersen Aluminum Corporation; Snap-Clad Panels: [www.pac-clad.com/#sle](http://www.pac-clad.com/#sle).
- B. Exterior Soffits:
  - 1. Firestone; UNA-CLAD UC-501 Reveal Flush Panel: [www.firestonebpco.com](http://www.firestonebpco.com)
- C. Substitutions: See Section 01 6000 - Product Requirements.

#### **2.02 SHEET MATERIALS**

- A. Aluminum Sheet: ASTM B209 (ASTM B209M); 18 gauge, 0.040 inch minimum base metal thickness; color to be selected, anodized finish.

#### **2.03 FABRICATION**

- A. Form sections true to shape, accurate in size, square, and free from distortion or defects.
- B. Fabricate cleats of same material as sheet, thickness to match roofing sheet, and at least wide, interlockable with sheet.
- C. Fabricate starter strips, interlockable with sheet.
- D. Form pieces in longest practical lengths.
- E. Hem exposed edges on underside 1/2 inch; miter and seam corners.
- F. Form material with standing seams, except where otherwise indicated. At moving joints, use sealed lapped, bayonet-type or interlocking hooked seams.
- G. Fabricate snow guards to match metal roofing system, with rails directly fastened to substrate below per manufacturer's recommendations.

#### **2.04 FINISHES**

- A. Color Anodized Finish: AAMA 611 AA-M12C22A42/44 Class I integrally or electrolytically colored anodic coating not less than 0.7 mils thick.
- B. Color: As selected by Architect from manufacturer's full range of colors.
- C. Primer Coat: On coated sheets, finish concealed side of sheet with primer compatible with finish system as recommended by finish system manufacturer.

#### **2.05 ACCESSORIES**

- A. Fasteners: Same material and finish as roofing metal, with soft neoprene washers.
- B. Soffits: Flush with reveal interlocking joint, smooth finish, with stiffening ribs as required by associated span. Run perpendicular to building.
  - 1. Panel Width: 12 inches
  - 2. Material: Aluminum 0.032 thickness
  - 3. Finish: Anodized Kynar 500, color to be selected from manufacturer's full range of colors.
  - 4. Locations: Front main entry canopy and receiving (kitchen) entry. See drawings for details.
- C. Underlayment: Synthetic non-asphaltic sheet, intended by manufacturer for mechanically fastened roofing underlayment without sealed seams.
  - 1. Type: Woven polypropylene with anti-slip polyolefin coating on both sides.
  - 2. Minimum Requirements: Comply with requirements of ICC-ES AC188 for non-self-adhesive sheet.
  - 3. Self Sealability: Passing nail sealability test specified in ASTM D1970/D1970M.

4. Flammability: Minimum of Class A, when tested in accordance with ASTM E108.
  5. Ultraviolet Resistance and Weatherability: Approved in writing by manufacturer for exposure to weather for minimum of 12 months.
  6. Low Temperature Flexibility: Passing test specified in ASTM D1970/D1970M.
  7. Water Vapor Permeance: Vapor retarder; maximum of 0.1 perm, when tested in accordance with ASTM E96/E96M Procedure A (desiccant method).
  8. Fasteners: As specified by manufacturer and building code qualification report or approval, if any.
- D. Concealed Sealants: Non-curing butyl sealant.
- E. Exposed Sealants: ASTM C920 elastomeric sealant, with minimum movement capability as recommended by manufacturer for sealed substrates; color to match adjacent material.
- F. Reglets: Surface mounted type, same material as roofing sheets; face and ends covered with plastic tape.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Inspect roof deck to verify deck is clean and smooth, free of depressions, waves, or projections, properly sloped to drains.
- B. Verify deck is dry and free of snow or ice. Verify joints in wood deck are solidly supported and fastened.
- C. Verify correct placement of wood nailers and insulation positioning between nailers.
- D. Verify roofing termination and base flashings are in place, sealed, and secure.

### **3.02 PREPARATION**

- A. Install starter and edge strips, and cleats before starting installation.
- B. Back paint concealed metal surfaces and surfaces in contact with dissimilar metals with protective backing paint to a minimum dry film thickness of 15 mil.

### **3.03 INSTALLATION - EAVE (ICE DAM) PROTECTION**

- A. Apply self adhesive ice and water shield flashing eave protection sheet in accordance with manufacturer's instructions.
- B. Apply self adhesive ice and water shield flashing over deck flange of eave edge flashings, and embed an 18 inch wide strip of eave protection sheet. Place starter strip with eave edge flush with face of flashings. Secure in place. Lap ends minimum 6 inches.
- C. Extend eave protection sheet up roof slope at least 4 feet beyond exterior wall line of building.

### **3.04 INSTALLATION - ROOFING**

- A. Apply underlayment over entire roof area.
- B. Apply slip sheet in one layer, laid loose.
- C. Cleat and seam all joints.
- D. Use plastic cement for joints between metal and bitumen and for joints between metal and felts.
- E. Install first row of snow guards at 24 inch up slope from eaves, with 2nd and 3rd row 16" upslope respectively.

### **3.05 INSTALLATION - STANDING SEAM ROOFING**

- A. Space standing seams at 16" inch on center.
- B. Lay sheets with long dimension perpendicular to eaves. Apply pans beginning at eaves.
- C. Lock cleats into seams and flatten.
- D. Stagger transverse joints of roofing sheets.
- E. At eaves and gable ends, terminate roofing by hooking over edge strip.
- F. Bend up one side edge 1-1/2 inches and other edge 1-3/4 inches.

- G. Make first fold 1/4 inch wide single fold and second fold 1/2 inch wide, providing locked portion of standing seam, 5 plies in thickness.
- H. Fold lower ends of seams at eaves over at 45 degree angle.

### **3.06 INSTALLATION - BUILT-IN GUTTERS AND DOWNSPOUTS**

- A. Secure gutter lining to substrate with cleats spaced minimum 16" inches on center along edges of gutters.
- B. Longitudinal joints not acceptable.
- C. At roof edges, extend gutter lining under metal roofing 6 inches minimum and terminate in 3/4 inch folded edge secured by cleats; hook lower end of roofing into lock strip to form 3/4 inch wide loose-lock seam.
- D. Seal gutters watertight, and seal joint of gutter to drain.
- E. Connect downspouts to downspout boots at 12 inches above grade, and grout connection watertight.
- F. Connect downspouts to storm sewer system, and grout connection watertight.

### **3.07 INSTALLATION - FLASHINGS**

- A. Secure flashings in place using concealed fasteners, and use exposed fasteners only where permitted.
- B. Cleat and seam all joints.
- C. Apply plastic cement compound between metal flashings and felt flashings.
- D. Fit flashings tight in place, and make corners square, surfaces true and straight in planes, and lines accurate to profiles.
- E. Seal metal joints watertight.
- F. Solder metal joints for full metal surface contact, and after soldering, wash metal clean with neutralizing solution and rinse with water.

### **3.08 PROTECTION**

- A. Do not permit traffic over unprotected roof surface.

**END OF SECTION**

**SECTION 07 6200  
SHEET METAL FLASHING AND TRIM**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Fabricated sheet metal items, including flashings, counterflashings, and exterior penetrations.
- B. Sealants for joints within sheet metal fabrications.
- C. Precast concrete splash pads.

**1.02 RELATED REQUIREMENTS**

- A. Section 06 1000 - Rough Carpentry: Wood nailers for sheet metal work.
- B. Section 07 6100 - Sheet Metal Roofing.
- C. Section 07 7123 - Manufactured Gutters and Downspouts.
- D. Section 07 7200 - Roof Accessories: Manufactured metal roof curbs.
- E. Section 07 9200 - Joint Sealants: Sealing non-lap joints between sheet metal fabrications and adjacent construction.

**1.03 REFERENCE STANDARDS**

- A. ASTM B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate 2014.
- B. ASTM B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate (Metric) 2014.
- C. ASTM C920 - Standard Specification for Elastomeric Joint Sealants 2018.
- D. ASTM D4586/D4586M - Standard Specification for Asphalt Roof Cement, Asbestos-Free 2007 (Reapproved 2018).
- E. CDA A4050 - Copper in Architecture - Handbook current edition.
- F. SMACNA (ASMM) - Architectural Sheet Metal Manual 2012.

**1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Shop Drawings: Indicate material profile, jointing pattern, jointing details, fastening methods, flashings, terminations, and installation details.

**1.05 QUALITY ASSURANCE**

- A. Perform work in accordance with SMACNA (ASMM) and CDA A4050 requirements and standard details, except as otherwise indicated.

**1.06 DELIVERY, STORAGE, AND HANDLING**

- A. Stack material to prevent twisting, bending, and abrasion, and to provide ventilation. Slope metal sheets to ensure drainage.
- B. Prevent contact with materials that could cause discoloration or staining.

**PART 2 PRODUCTS**

**2.01 MANUFACTURERS**

- A. Sheet Metal Flashing and Trim Manufacturers:
  - 1. Firestone.
  - 2. Substitutions: See Section 01 6000 - Product Requirements.
- B. Exterior Penetration Flashing Panel Manufacturers:
  - 1. Quickflash Weatherproofing Products, Inc: [www.quickflashproducts.com/#sle](http://www.quickflashproducts.com/#sle).
  - 2. Substitutions: See Section 01 6000 - Product Requirements.

## **2.02 SHEET MATERIALS**

- A. Aluminum: ASTM B209 (ASTM B209M); 20 gauge, 0.032 inch thick; anodized finish of color as selected.

## **2.03 FABRICATION**

- A. Form sections true to shape, accurate in size, square, and free from distortion or defects.
- B. Form pieces in longest possible lengths.
- C. Hem exposed edges on underside 1/2 inch; miter and seam corners.
- D. Form material with flat lock seams, except where otherwise indicated; at moving joints, use sealed lapped, bayonet-type or interlocking hooked seams.
- E. Fabricate corners from one piece with minimum 18 inch long legs; seam for rigidity, seal with sealant.
- F. Fabricate flashings to allow toe to extend 2 inches over roofing gravel. Return and brake edges.

## **2.04 ACCESSORIES**

- A. Fasteners: Galvanized steel, with soft neoprene washers.
- B. Primer: Zinc chromate type.
- C. Concealed Sealants: Non-curing butyl sealant.
- D. Exposed Sealants: ASTM C920; elastomeric sealant, with minimum movement capability as recommended by manufacturer for substrates to be sealed; color to match adjacent material.
- E. Plastic Cement: ASTM D4586/D4586M, Type I.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify roof openings, curbs, pipes, sleeves, ducts, and vents through roof are solidly set, reglets in place, and nailing strips located.
- B. Verify roofing termination and base flashings are in place, sealed, and secure.

### **3.02 PREPARATION**

- A. Install starter and edge strips, and cleats before starting installation.
- B. Back paint concealed metal surfaces with protective backing paint to a minimum dry film thickness of 15 mil.

### **3.03 INSTALLATION**

- A. Secure flashings in place using concealed fasteners, and use exposed fasteners only where permitted..
- B. Apply plastic cement compound between metal flashings and felt flashings.
- C. Fit flashings tight in place; make corners square, surfaces true and straight in planes, and lines accurate to profiles.
- D. Seal metal joints watertight.

### **3.04 FIELD QUALITY CONTROL**

- A. See Section 01 4000 - Quality Requirements for field inspection requirements.
- B. Inspection will involve surveillance of work during installation to ascertain compliance with specified requirements.

**END OF SECTION**



## **SECTION 07 7100 ROOF SPECIALTIES**

### **PART 1 GENERAL**

#### **1.01 SECTION INCLUDES**

- A. Manufactured roof specialties, including copings, fascias, and gravel stops.
- B. Roof control and expansion joint covers.
- C. Copper Weathervane. (Alternate GC-3)
- D. Copper Cupola Dome and Turret. (Alternate GC-3)

#### **1.02 RELATED REQUIREMENTS**

- A. Section 07 7200 - Roof Accessories: Manufactured curbs, roof hatches, and snow guards.

#### **1.03 REFERENCE STANDARDS**

- A. ANSI/SPRI/FM 4435/ES-1 - Test Standard for Edge Systems Used with Low Slope Roofing Systems 2017.
- B. NRCA (RM) - The NRCA Roofing Manual 2019.
- C. SMACNA (ASMM) - Architectural Sheet Metal Manual 2012.

#### **1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on shape of components, materials and finishes, anchor types and locations.
- C. Shop Drawings: Indicate configuration and dimension of components, adjacent construction, required clearances and tolerances, and other affected work.
- D. Samples: Submit one appropriately sized samples of gravel stop.
- E. Manufacturer's Installation Instructions: Indicate special procedures, fasteners, supporting members, and perimeter conditions requiring special attention.

### **PART 2 PRODUCTS**

#### **2.01 MANUFACTURERS**

- A. Roof Edge Fascias and Fascia Scuppers:
  - 1. Firestone - Anchorgard SP Extended Fascia and Scupper.
  - 2. Substitutions: See Section 01 6000 - Product Requirements.
- B. Control and Expansion Joint Covers:
  - 1. Firestone Roof Expansion Joint Cover.
  - 2. Substitutions: See Section 01 6000 - Product Requirements.

#### **2.02 COMPONENTS**

- A. Roof Edge Fascias: Factory fabricated to sizes required; corners mitered; concealed fasteners.
  - 1. Configuration: Fascia, and edge securement for roof membrane.
  - 2. Pull-Off Resistance: Tested in accordance with ANSI/SPRI/FM 4435/ES-1 using test methods RE-1 and RE-2 to positive and negative design wind pressure as defined by applicable local building code.
  - 3. Exposed Face Height: 10" inches.
  - 4. Material: Formed aluminum sheet, 0.050 inch thick, minimum.
  - 5. Finish: Anodized - color to be selected from manufacturers full range..
  - 6. Manufacturers:
    - a. Firestone - Anchorgard SP Extended Fascia, Model AEF-100.
    - b. Substitutions: See Section 01 6000 - Product Requirements.
- B. Copper Weathervane: Basis of Design: 28" L x 18" W x 40" H- Traditional Scrolled Arrow Weathervane Directional w/ Globes, Copper. Available through:

[www.ArchitecturalDepot.com/#sle](http://www.ArchitecturalDepot.com/#sle).

1. Substitutions: See Section 01 6000- Product Requirements.
- C. Copper Cuploa Dome and Turret: Basis of Design: DeMuth Steel Products, Inc.- Hemispherical dome Roofs. Diameter as shown on drawings. 24 Gauge Copper- standing seam construction. Turret and 5" diameter ball on top to be custom fabricated to sizes shown on drawings.
  1. Substitutions: See Section 01 6000- Product Requirements.
    - a. Material: Formed steel sheet, galvanized, 24 gauge, 0.024 inch thick, minimum.
    - b. Finish: Mill finish.
    - c. Color: To be selected by Architect from manufacturer's standard range.
    - d. Manufacturers:
      - 1) Basis of Design: Demuth Steel Products: [www.demuth.com/#sle](http://www.demuth.com/#sle).
      - 2) Substitutions: See Section 01 6000 - Product Requirements.
- D. Expansion Joint Covers: Composite construction of 3 inch wide flexible EPDM flashing of black color with closed cell urethane foam backing, each edge seamed to aluminum sheet metal flanges, designed for nominal joint width of 3 inch. Include special formed corners, tees, intersections, and wall flashings, each sealed watertight.

## **2.03 ACCESSORIES**

- A. Sealant for Joints in Linear Components: As recommended by component manufacturer.
- B. Adhesive for Anchoring to Roof Membrane: Compatible with roof membrane and approved by roof membrane manufacturer.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that deck, curbs, roof membrane, base flashing, and other items affecting work of this Section are in place and positioned correctly.
  1. Refer to Section 07 7200 for information on roofing related accessories.

### **3.02 INSTALLATION**

- A. Install components in accordance with manufacturer's instructions and NRCA (RM) applicable requirements.
- B. Seal joints within components when required by component manufacturer.
- C. Anchor components securely.
- D. Coordinate installation of components of this section with installation of roofing membrane and base flashings.
- E. Coordinate installation of sealants and roofing cement with work of this section to ensure water tightness.
- F. Coordinate installation of flashing flanges into reglets.

**END OF SECTION**

**SECTION 07 7200  
ROOF ACCESSORIES**

**PART 2 PRODUCTS**

**END OF SECTION**

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**SECTION 07 8400  
FIRESTOPPING  
FIRESTOPPING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Firestopping systems.
- B. Firestopping of joints and penetrations in fire resistance rated and smoke resistant assemblies, whether indicated on drawings or not, and other openings indicated.
- C. Firestopping membrane penetrations in fire rated and smoke rated assemblies, whether indicated on drawings or not.

**1.02 SUMMARY**

- A. Each Prime Contractor shall provide tested and listed firestop systems consisting of a material or combination of materials installed to retain the integrity of fire-resistance rated construction by maintaining an effective barrier against the spread of flame, smoke, and/or hot gases through penetrations, blank openings, construction joints, or at the gap that is created at the building perimeter of the horizontal fire-resistance rated assembly and exterior wall and in or adjacent to either fire-resistance or non-rated-resistance rated barriers in accordance with the requirements of the Building Code for this project.
- B. Firestop systems shall be used in locations including, but not limited to, the following:
  - 1. Penetrations through fire-resistance-rated floor and roof assemblies requiring protected openings including both empty openings and openings that contain penetrations.
  - 2. Penetrations through fire-resistance-rated wall assemblies including both empty openings and openings that contain penetrations.
  - 3. Membrane penetrations in fire-resistance-rated wall and roof-ceiling assemblies where items penetrate one side of the barrier.
  - 4. Joints in fire-resistance-rated assemblies that allow independent movement.
  - 5. Perimeter of the horizontal fire-resistance rated assembly and exterior wall between a rated floor/roof and the exterior wall assembly that is not fire-resistance rated.
  - 6. Joints, through penetrations and membrane penetrations in smoke barriers, smoke partitions and those assemblies required to limit, restrict or retard the passage of smoke.

**1.03 RELATED REQUIREMENTS**

- A. Refer to "Code Compliance Drawings" for location or fire rated assemblies. At a minimum all corridor walls and all floors between stories shall have a 1 hour fire rating.
- B. Statement of Special Inspections (included in the front end documents when applicable).
- C. Sample Firestop Schedule (at the end of this section).
- D. Section 01 4533 - Code Required Special Inspections.
- E. Section 01 6116 - Volatile Organic Compound (VOC) Content Restrictions.
- F. Section 01 7000 - Execution and Closeout Requirements: Cutting and patching.
- G. Section 09 2116 - Gypsum Board Assemblies: Gypsum wallboard fireproofing.
- H. Division 03 0000 - Concrete; concrete work.
- I. Division 04 0000 - Masonry.
- J. Division 21 0000 - Fire Suppression.
- K. Division 22 0000 - Plumbing.
- L. Division 23 0000 - Heating, Ventilation and Air Conditioning.
- M. Division 26 0000 - Electrical.
- N. Division 27 0000 - Communications.
- O. Division 28 0000 - Electronic Safety and Security.

#### **1.04 DEFINITIONS**

- A. Barrier: Any bearing or non-bearing wall or floor that has an hourly fire and smoke rating.
- B. Fire-Resistant Firestop Joint System: An assemblage of specific materials or products that are designed, tested and fire-resistance rated in accordance with either ASTM E1966 or UL 2079 to resist for a prescribed period of time the passage of fire through joints made in or between fire-resistance rated assemblies.
- C. Joint: Any gap, joint, or opening, whether static or dynamic, between two fire-rated barriers including to where the top of the wall meets the floor; bottom of wall meets the floor; wall edge to wall edge applications; floor edge to floor edge applications; floor edge to wall; or where one fire-rated barrier meets a non fire-rated assembly such as at fire-rated floor edge to non-fire-rated exterior wall and top of fire-rated wall to non-fire-rated roof assembly.
- D. Membrane Penetration: Any penetration in a fire-rated wall or floor/roof-ceiling assembly that breaches only one side of the barrier.
- E. Membrane Penetration Firestop System: An assemblage consisting of a fire-resistance rated floor-ceiling, roof-ceiling or wall assembly, one or more penetrating items installed into or passing through the breach in one side of the assembly and the materials or devices, or both, installed to resist the spread of fire into the assembly for a prescribed period of time.
- F. Through Penetration: Any penetration of a fire-rated wall or floor assembly that completely breaches the barrier.
- G. Through Penetration Firestop System: An assemblage of specific materials or products that are designed, tested and fire-resistance rated in accordance with either ASTM E814 or UL 1479 to resist for the prescribed period of time the passage of fire through penetrations made in fire-resistance rated assemblies.

#### **1.05 REFERENCE STANDARDS**

- A. ICC (IBC) - International Building Code; Most Recent Edition adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- B. International Firestop Council (IFC) - Recommended IFC Guidelines for Evaluating Firestop System Engineering Judgements; Current Edition.
- C. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials 2020.
- D. ASTM E814 - Standard Test Method for Fire Tests of Penetration Firestop Systems 2013a (Reapproved 2017).
- E. ASTM E1966 - Standard Test Method for Fire-Resistive Joint Systems 2015 (Reapproved 2019).
- F. ASTM E2174 - Standard Practice for On-Site Inspection of Installed Firestop Systems 2020a.
- G. ASTM E2393 - Standard Practice for On-Site Inspection of Installed Fire Resistive Joint Systems and Perimeter Fire Barriers 2020a.
- H. ASTM E2307 - Standard Test Method for Determining Fire Resistance of Perimeter Fire Barriers Using Intermediate-Scale, Multi-story Test Apparatus 2020.
- I. ASTM E2837 - Standard Test Method for Determining the Fire Resistance of Continuity Head-of-Wall Joint Systems Installed Between Rated Wall Assemblies and Nonrated Horizontal Assemblies 2013 (Reapproved 2017).
- J. ASTM G21 - Standard Practice for Determining Resistance of Synthetic Polymeric Materials to Fungi 2015, with Editorial Revision (2021).
- K. ITS (DIR) - Directory of Listed Products current edition.
- L. FM 4991 - Firestop Contractors 2013.
- M. FM (AG) - FM Approval Guide current edition.
- N. SCAQMD 1168 - Adhesive and Sealant Applications 1989 (Amended 2017).

- O. UL 1479 - Standard for Fire Tests of Penetration Firestops Current Edition, Including All Revisions.
- P. UL 2079 - Standard for Tests for Fire Resistance of Building Joint Systems Current Edition, Including All Revisions.
- Q. UL (DIR) - Online Certifications Directory Current Edition.
- R. UL (FRD) - Fire Resistance Directory Current Edition.

#### **1.06 PERFORMANCE REQUIREMENTS**

- A. Penetrations: Provide and install firestopping products that once installed to the tested and listed system or engineering judgement (EJ) / equivalent fire-resistance rated assembly (EFRRA) to become firestop systems or EJ/EFRRA's that are produced to resist the spread of fire, and/or the passage of smoke through breaches, gaps, openings, in fire-resistance-rated and smoke resistant assemblies according to requirements indicated, including but not limited to the following:
  - 1. Firestop all breaches made in fire-resistance-rated assemblies for penetrating items passing through fire-resistance-rated wall and floor assemblies and other locations indicated on the Contract Drawings.
  - 2. Provide and install complete penetration firestopping systems that have been tested and approved by a nationally recognized third-party testing agency to the listing and the manufacturer's installation instructions.
  - 3. F-Rated Through-Penetration Firestop Systems: Provide through-penetration firestop systems with F (fire resistance) ratings indicated, as determined through testing in accordance with ASTM E 814 or UL1479, but not less than one hour or the fire-resistance rating of the construction being penetrated by the penetrating item.
  - 4. T-Rating Through-Penetration Firestop Systems: Provide firestop systems with T (temperature) ratings, in addition to F ratings, as determined per ASTM E 814 or UL 1479, in horizontal fire-resistance-rated assemblies and where required by the Building Code.
  - 5. L-Rated Through-Penetration Firestop Systems: Provide firestop systems with L (air leakage) ratings, in addition to F and T ratings, as determined in accordance with UL 1479, in smoke barriers and smoke partitions where required by the Building Code.
  - 6. W-Rated Through-Penetration Firestop Systems: Provide firestop systems with W (water resistance) ratings, in addition to F, T and L ratings, as determined in accordance with UL 1479, for wet areas of the building including but not limited to janitor closets, bathrooms, kitchen areas and for wet piping penetrations for plumbing, mechanical and wet-pipe sprinkler systems.
  - 7. For penetrations involving non-metallic, CPVC, PVC, or plastic piping, tubing, or conduit, provide firestop systems that are chemically compatible in accordance with manufacturer requirements.
  - 8. For penetrations involving insulated piping, provide firestop systems not requiring removal of insulation.
  - 9. For penetrations involving fire or fire/smoke dampers, only firestop products approved by the damper manufacturer shall be installed in accordance with the damper installation instructions.
  - 10. Penetrations near head-of-wall joints are restricted within 6 inches of the head-of-wall joint where dynamic joints require proper movement.
- B. Perimeter Interior Fire Barrier Systems: Provide perimeter interior fire barrier systems with fire-resistance ratings indicated, as determined per ASTM E 2307, but not less than fire-resistance rating of the floor construction.
- C. Fire-Resistance Joints: Provide fire-resistive joint systems with fire-resistance ratings indicated, as determined by tests performed to ASTM E 1966 and ASTM E 1399, E 2837, or UL 2079, but not less than the fire-resistance rating of the assembly in which the breach, void or joint occurs. For where fire-resistance rated walls do not meet and create a breach between a non-fire-resistant horizontal assembly, provide fire-resistive joint systems with fire-resistance ratings as determined by ASTM E 2837.

1. For firestopping assemblies exposed to view, traffic, moisture, and physical damage, provide products that after curing do not deteriorate when exposed to these conditions both during and after construction.
  2. For floor penetrations exposed to possible loading and traffic, provide firestop systems capable of supporting floor loads involved either by installing floor plates, covers, or by other means, as specified by the Architect.
  3. L-Rating Systems: Provide firestop systems with L-ratings at smoke barrier joints and at the intersection of horizontal smoke barriers and exterior curtain wall construction not exceeding 5 cfm/lf. Provide firestop system at smoke barrier joints.
- D. Where there is no specific third-party tested and listed, classified firestop system available for a particular firestop configuration, the Contractor with the Firestop Manufacturer's Representative shall obtain from the firestop manufacturer, an (EJ) or (EFRRA) for submittal. All EJ's shall follow the current International Firestop Council (IFC) Guidelines for Evaluating Firestop Systems in Engineering Judgements and shall state that the manufacturer believes the EJ would pass the fire tests referenced for the application, if tested.

#### **1.07 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Schedule of Firestopping: List each type of penetration and joint system, fire rating of the penetrated assembly, and firestopping test or design number. The BCA Sample Firestop Schedule is for information only and will not be acted on for approval. See BCA Sample Firestop Schedule at the end of this section.
- C. Product Data: Provide data on product characteristics, performance ratings, and limitations. Provide illustration drawings on each type of tested and listed firestop system being used on the Project.
- D. Sustainable Design Submittal: Submit VOC content documentation for all non-preformed materials.
- E. Manufacturer's Installation Instructions: Indicate preparation and installation instructions.
- F. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
- G. Installer Qualification: Submit qualification statements for installing mechanics.
- H. Firestopping Manufacturer's Representative contact information as listed in Quality Assurance.
- I. Engineering Judgements if applicable.
- J. Manufacturer's self-adhering vinyl firestop label samples. Include the following information:
  1. "WARNING - Do Not Disturb, Through Penetration Firestop System. Notify Building Management of Any Damage." or "WARNING - Do Not Disturb, Joint Firestop System. Notify Building Management of Any Damage."
  2. F, T, L and W ratings as applicable.
  3. Firestop system manufacturer's name.
  4. Firestop system UL designation.
  5. Product.
  6. Contractor's name.
  7. Installer's name and phone number.
  8. Date of installation.
- K. Manufacturer's qualifications as listed in Quality Assurance.
- L. Installer's qualifications as listed in Quality Assurance.

#### **1.08 QUALITY ASSURANCE**

- A. Fire Testing: Provide firestopping assemblies of designs that provide the scheduled fire ratings when tested in accordance with methods indicated.
  1. Listing in the current-year classification or certification books of UL (FRD), FM (AG), or ITS (DIR) will be considered as constituting an acceptable test report.



2. Valid evaluation report published by ICC Evaluation Service, Inc. (ICC-ES) at [www.icc-es.org](http://www.icc-es.org) will be considered as constituting an acceptable test report.
  3. Submission of actual test reports is required for assemblies for which none of the above substantiation exists.
- B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.
- C. Installer Qualifications: Company specializing in performing the work of this section and:
1. Trained by manufacturer.
  2. Approved by Factory Mutual Research Corporation under FM 4991, or meeting any two of the following requirements:
    - a. Verification of minimum three years documented experience installing work of this type.
    - b. Verification of at least five satisfactorily completed projects of comparable size and type.
    - c. Licensed by local authorities having jurisdiction (AHJ).
- D. Pre-Installation Conference: This conference should be a joint meeting attended by the Owner's Representative and Prime Contractors, respective firestopping sub-contractors, firestopping company field advisors and testing agencies to review project requirements. The agenda should include the following topics:
1. Review Scope of Work.
  2. Review shop drawings and completed firestop schedule.
  3. Discuss identification labeling and locations.
  4. Discuss wall markings and locations.
  5. Review schedule, coordination and sequencing with all Trades.
  6. Review coordination with special inspection requirements.
  7. Review any engineering judgements or other special requirements.
  8. Review mock-up requirements.
  9. Review Firestop Application Log.
- E. Manufacturer's Company Field Advisor: Secure the services of a Company Field Advisor for the following:
1. Render advice to the Contractor regarding suitability of firestopping systems for the various project conditions.
  2. Assist Contractor with completing the Schedule of Firestopping. See Sample Firestop Schedule at the end of this Section.
  3. Attend Pre-installation Conference.
  4. Assist installers with manufacturer's installation requirements.
  5. Advise the Contractor on ASTM special inspection requirements for both visual and destructive testing methods.
  6. Assist in providing Engineering Judgements from manufacturer's technical specialists when necessary.
- F. Single Source Limitations: Each Prime Contractor shall obtain firestop systems for their Scope of Work from a single manufacturer to the greatest extent possible.
1. Tested and listed, classified firestop systems are to be used. If another manufacturer has a tested and listed system, then that system shall be used prior to an EJ or EFRRA.
  2. Material from different manufacturer than allowed by the tested and listed system shall not be intermixed in the same firestop system, void, breach, gap, intersection, or opening.
- G. Inspection of penetrations through fire-rated floor and wall assemblies shall be in accordance with ASTM E 2174 - Standard Practice for On-Site Inspection of Installed Firestop Systems and ASTM E 2393 - Standard Practice for On-Site Inspection of Installed Fire-Resistive Joint Systems and Perimeter Fire Barriers.

## 1.09 FIELD CONDITIONS

- A. Comply with firestopping manufacturer's recommendations for temperature and conditions during and after installation; maintain minimum temperature before, during, and for three days

after installation of materials.

- B. Provide ventilation in areas where solvent-cured materials are being installed.

#### **1.10 COORDINATION**

- A. Coordinate construction of openings and penetrating items to ensure that penetration firestopping systems can be installed in accordance with specified firestopping system design.
- B. Coordinate sizing of sleeves, openings, core-drilled holes, or cut openings to accommodate penetration firestopping systems.

### **PART 2 PRODUCTS**

#### **2.01 MANUFACTURERS**

- A. Firestopping Manufacturers:
  - 1. 3M Fire Protection Products: [www.3m.com/firestop/#sle](http://www.3m.com/firestop/#sle).
  - 2. A/D Fire Protection Systems Inc: [www.adfire.com/#sle](http://www.adfire.com/#sle).
  - 3. Everkem Diversified Products, Inc: [www.everkemproducts.com/#sle](http://www.everkemproducts.com/#sle).
  - 4. Hilti, Inc: [www.us.hilti.com/#sle](http://www.us.hilti.com/#sle).
  - 5. HoldRite, a Brand of Reliance Worldwide Corporation: [www.holdrite.com/#sle](http://www.holdrite.com/#sle).
  - 6. Nelson FireStop Products: [www.nelsonfirestop.com/#sle](http://www.nelsonfirestop.com/#sle).
  - 7. Passive Fire Protection Partners: [www.firestop.com/#sle](http://www.firestop.com/#sle).
  - 8. Specified Technologies Inc: [www.stifirestop.com/#sle](http://www.stifirestop.com/#sle).
  - 9. Tremco Commercial Sealants & Waterproofing: [www.tremcosealants.com/#sle](http://www.tremcosealants.com/#sle).
  - 10. Or approved equal.
  - 11. Substitutions: See Section 01 6000 - Product Requirements.

#### **2.02 MATERIALS**

- A. Firestopping Materials: Any materials meeting requirements.
- B. Prohibited Materials: Do not use firestopping materials containing asbestos or lead and shall not incorporate nor require use of hazardous solvents.
- C. Volatile Organic Compound (VOC) Content: Provide products having VOC content lower than that required by SCAQMD 1168.
- D. Mold and Mildew Resistance: Provide firestopping materials with mold and mildew resistance rating of zero(0) in accordance with ASTM G21.
- E. Primers, Sleeves, Forms, Insulation, Packing, Stuffing, and Accessories: Provide type of materials as required for tested firestopping assembly.
- F. Fire Ratings: Refer to drawings for required systems and ratings.
- G. Firestopping sealants must be flexible, allowing for normal movement.
- H. Firestopping materials shall not shrink upon drying as evidenced by cracking or pulling back from contact surfaces such that a void is created.
- I. Firestopping material shall be moisture resistant and may not dissolve in water after curing.

#### **2.03 FIRESTOPPING ASSEMBLY REQUIREMENTS**

- A. Perimeter Fire Containment Firestopping: Use system that has been tested according to ASTM E2307 to have fire resistance F Rating equal to required fire rating of floor assembly.
  - 1. Movement: Provide systems that have been tested to show movement capability as indicated.
  - 2. Temperature Rise: Provide systems that have been tested to show T Rating as indicated or where required by Building Code.
  - 3. Air Leakage: Provide systems that have been tested to show L Rating as indicated or required by Building Code.
  - 4. Where floor assembly is not required to have a fire rating, provide systems that have been tested to show L Rating as indicated or required by Building Code.
- B. Head-of-Wall Joint System Firestopping at Joints Between Fire-Rated Wall Assemblies and Non-Rated Horizontal Assemblies: Use system that has been tested according to ASTM

E2837 to have fire resistance F Rating equal to required fire rating of floor or wall, whichever is greater.

1. Movement: Provide systems that have been tested to show movement capability as indicated.
- C. Floor-to-Floor, Wall-to-Wall, and Wall-to-Floor Joints, Except Perimeter, Where Both Are Fire-Rated: Use system that has been tested according to ASTM E1966 or UL 2079 to have fire resistance F Rating equal to required fire rating of the assembly in which the joint occurs.
  1. Movement: Provide systems that have been tested to show movement capability as indicated.
  2. Air Leakage: Provide systems that have been tested to show L Rating as indicated or required by Building Code.
  3. Watertightness: Provide systems that have been tested to show W Rating as indicated.
  4. Listing by FM (AG), ITS (DIR), UL (DIR), or UL (FRD) in their certification directories will be considered evidence of successful testing.
- D. Through Penetration Firestopping: Use system that has been tested according to ASTM E814 to have fire resistance F Rating equal to required fire rating of penetrated assembly.
  1. Temperature Rise: Provide systems that have been tested to show T Rating as indicated or required by Building Code.
  2. Air Leakage: Provide systems that have been tested to show L Rating as indicated or required by Building Code.
  3. Watertightness: Provide systems that have been tested to show W Rating as indicated.
  4. Listing by FM (AG), ITS (DIR), UL (DIR), or UL (FRD) in their certification directories will be considered evidence of successful testing.
- E. Membrane Penetrations: Use system that has been tested according to ASTM E814 to have fire resistance F Rating equal to required fire rating of penetrating assembly.

## **2.04 FIRESTOPPING FOR FLOOR-TO-FLOOR, WALL-TO-FLOOR, AND WALL-TO-WALL JOINTS**

- A. Concrete and Concrete Masonry Walls and Floors:
  1. Floor to Floor Joints:
    - a. 3 Hour Construction: UL System FF-D-1001; Specified Technologies Inc. SIL silicone sealant.
    - b. 3 Hour Construction: UL System FF-D-1008; Specified Technologies Inc. ES Elastomeric Firestop Sealant.
    - c. 3 Hour Construction: UL System FF-D-1025; Specified Technologies Inc. AS200 Elastomeric Spray.
  2. Top of Wall Joints at Concrete/Concrete Masonry Wall to Concrete Over Metal Deck Floor:
    - a. 3 Hour Construction: UL System HW-D-0139; Specified Technologies Inc. AS200 Elastomeric Spray.
  3. Concrete/Concrete Masonry Wall to Wall Joint Systems That Have Not Been Tested For Movement Capabilities (Static):
    - a. 3 Hour Construction: UL System WW-S-0038; Specified Technologies Inc. SIL silicone sealant.
  4. Concrete/Concrete Masonry Wall to Wall Joint Systems That Have Movement Capabilities (Dynamic):
    - a. 3 Hour Construction: UL System WW-D-1001; Specified Technologies Inc. SIL silicone sealant.
- B. Gypsum Board Walls:
  1. Wall to Wall Joints That Have Not Been Tested For Movement Capabilities (Static):
    - a. 1 Hour Construction: UL System WW-S-0063; Specified Technologies Inc. SpeedFlex TTG Track Top Gasket.
  2. Top of Wall Joints at Concrete Over Metal Deck:
    - a. 1 Hour Construction: UL System HW-D-0034; Specified Technologies Inc. ES Elastomeric Firestop Sealant.

## **2.05 FIRESTOPPING FOR FLOOR-TO-WALL JOINTS**

- A. Floor-To-Wall Joint System That Have Movement Capabilities (Dynamic):
  - 1. 3 Hour Construction: UL System FW-D-1001; Specified Technologies Inc. SIL silicone sealant.
  - 2. 3 Hour Construction: UL System FW-D-1007; Specified Technologies Inc. ES Elastomeric Firestop Sealant.

## **2.06 FIRESTOPPING PENETRATIONS THROUGH CONCRETE AND CONCRETE MASONRY CONSTRUCTION**

- A. Blank Openings:
  - 1. In Floors or Walls:
    - a. 3 Hour Construction: UL System C-AJ-0135; Specified Technologies Inc. FP Intumescent Firestop Plug.
- B. Penetrations Through Floors or Walls By:
  - 1. Multiple Penetrations in Large Openings:
    - a. 2 Hour Construction: UL System C-AJ-8143; Hilti FS-ONE MAX Intumescent Firestop Sealant.
    - b. 2 Hour Construction: UL System C-AJ-8055; Specified Technologies Inc. SSP Firestop Putty.
  - 2. Uninsulated Metallic Pipe, Conduit, and Tubing:
    - a. 3 Hour Construction: UL System C-AJ-1079; Specified Technologies Inc. SSS Intumescent Firestop Sealant.
  - 3. Cable Trays with Electrical Cables:
    - a. 3 Hour Construction: UL System C-AJ-4093; Hilti CFS-BL Firestop Block.
  - 4. Electrical Busways:
    - a. 3 Hour Construction: UL System C-AJ-6017; Hilti FS-ONE MAX Intumescent Firestop Sealant.
  - 5. Insulated Pipes:
    - a. 3 Hour Construction: UL System C-AJ-5090; Hilti FS-ONE MAX Intumescent Firestop Sealant.
- C. Penetrations Through Floors By:
  - 1. Electrical Busways:
- D. Penetrations Through Walls By:
  - 1. Uninsulated Metallic Pipe, Conduit, and Tubing:
    - a. 1 Hour Construction: UL System W-J-1067; Hilti FS-ONE MAX Intumescent Firestop Sealant.
  - 2. HVAC Ducts, Insulated:
    - a. 2 Hour Construction: UL System W-J-7112; Hilti FS-ONE MAX Intumescent Firestop Sealant.

## **2.07 FIRESTOPPING PENETRATIONS THROUGH FRAMED FLOORS**

- A. Metallic Pipe, Conduit, and Tubing Penetrations in Framed Floors:
  - 1. 1 Hour Construction: UL System F-C-1053; Specified Technologies Inc. WF300 Intumescent Firestop Caulk (for wood frame construction).

## **2.08 FIRESTOPPING PENETRATIONS THROUGH GYPSUM BOARD WALLS**

- A. Blank Openings:
  - 1. 1 Hour Construction: UL System W-L-0032; Specified Technologies Inc. FP Intumescent Firestop Plug.

## **2.09 FIRESTOPPING SYSTEMS**

- A. Firestopping: Any material meeting requirements.
  - 1. Fire Ratings: Use system that is listed by FM (AG), ITS (DIR), or UL (FRD) and tested in accordance with ASTM E814, ASTM E119, or UL 1479 with F Rating equal to fire rating of penetrated assembly and minimum T Rating Equal to F Rating and in compliance with

- other specified requirements.
- 2. Fire Ratings: See drawings for required ratings.
- B. Firestopping at Uninsulated Metallic Pipe and Conduit Penetrations, of diameter 4 inches or less: Any material meeting requirements.

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

- A. Verify openings are ready to receive the work of this section.
- B. Proceed with installation only after unsatisfactory conditions have been corrected.
- C. Verify that all pipes, conduits, cables, clips, and/or other items which penetrate fire-rated construction have been permanently installed prior to installation of firestops.

#### **3.02 PREPARATION**

- A. Clean substrate surfaces of dirt, dust, grease, oil, loose material, or other materials that could adversely affect bond of firestopping material.
- B. Remove incompatible materials that could adversely affect bond.
- C. Install backing materials to prevent liquid material from leakage.
- D. Remove laitance and form-release agents from concrete
- E. Prime substrates where recommended by firestopping manufacturer using manufacturer's recommended products and methods. Confine primers to areas of bond; do not allow spillage and migration onto exposed surfaces.

#### **3.03 INSTALLATION**

- A. Install materials in manner described in fire test report and in accordance with manufacturer's instructions, completely closing openings.
- B. Do not cover installed firestopping until inspected by Owner's Independent Testing Agency.
- C. The General Contractor shall coordinate with other Prime Contractors firestopping work prior to installation of ceilings.
- D. Identification: Each Prime Contractor is to install firestop system labeling.
  - 1. Identify installed firestop systems with preprinted vinyl labels.
  - 2. Clean surfaces of dust and debris.
  - 3. Attach self-adhesive labels permanently to surfaces adjacent to firestop systems so that labels will be visible to anyone seeking to remove or compromise penetrating items or firestop systems.
  - 4. In addition, the General Contractor shall install joint firestop labels at all fire-rated wall assembly joints. Locate labels within 15 feet of the wall or partition end, and no more than 30 feet apart horizontally.

#### **3.04 FIELD QUALITY CONTROL**

- A. Independent Testing Agency: Inspection agency employed and paid by Owner, will examine penetration firestopping in accordance with ASTM E2174 (penetrations) and ASTM E2393 (joints).
- B. Coordinate visual inspections with Independent Testing Agency as Work is being performed according to ASTM E2174 and ASTM E2393.
- C. Repair or replace penetration firestopping and joint firestopping at locations where visual inspection results indicate penetration and joint firestopping do not meet specified requirements and manufacturer's tested and listed firestop system.
- D. If Work is not coordinated with Independent Testing Agency for visual inspections, then destructive inspections will be required according to ASTM E2174 and ASTM E2393.
- E. Repair or replace through-penetration, membrane penetration and joint penetration firestopping at locations where destructive inspection is performed at no cost to the Owner.

### 3.05 CLEANING

- A. Clean adjacent surfaces of firestopping materials.
- B. Leave finished Work in neat, clean condition with no evidence of spillovers or damage to adjacent surfaces.

### 3.06 PROTECTION

- A. Protect adjacent surfaces from damage by material installation.

### 3.07 BCA SAMPLE FIRESTOP SCHEDULE:

- A. The sample firestop schedule indicated below is available in Excel or PDF format for contractor's / manufacturer's representative use when requested. Otherwise, the manufacturer's representative shall use their own schedule.

**BCA SAMPLE FIRESTOP SCHEDULE**

| No.                                                                                                         | Manufacturer's Product Reference Numbers and/or Drawing Numbers (include fill materials) | U.L., FM, Warnock Hersey or Omega Point Lab Penetration | Penetrating Item: Material, Size, Insulated, Combustible, Joint, Perimeter, etc. Description | Maximum Allowable Annular Space or Maximum Size Opening | Assembly                | Roof-Ceiling or Floor Construction  | Fire Resistant Rating of Wall or Floor (Hour) | F Rating (Hour) | T Rating if floors only | L Rating if available (leakage) | W Rating if optional available | Movement       |
|-------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------|---------------------------------------------------------|----------------------------------------------------------------------------------------------|---------------------------------------------------------|-------------------------|-------------------------------------|-----------------------------------------------|-----------------|-------------------------|---------------------------------|--------------------------------|----------------|
| Through-Penetration Vertical Firestopping Systems (walls)                                                   |                                                                                          |                                                         |                                                                                              |                                                         |                         |                                     |                                               |                 |                         |                                 |                                |                |
| 1                                                                                                           | Example No.1 Tremstop Acrylic                                                            | UL CAU-1205                                             | 6" steel pipe schedule 40                                                                    | min 1/4" to max 1"                                      | P3                      | 6" reinf normal weight concrete     | 2 Hour                                        | 2 Hour          |                         | Ambient less than 1 CFM/Lin     |                                |                |
| 2                                                                                                           | Example No.2 Tremstop Acrylic SP ThermalFiber SAF                                        | W-D-1022                                                | NA                                                                                           | 4" max copng                                            | Curtain Wall/ Perimeter | 4 1/2" reinforced LW concrete       | 2 Hour                                        | 2 Hour          | 1/4-Hr                  |                                 |                                | Class II       |
|                                                                                                             |                                                                                          |                                                         |                                                                                              |                                                         |                         |                                     |                                               |                 |                         |                                 |                                |                |
|                                                                                                             |                                                                                          |                                                         |                                                                                              |                                                         |                         |                                     |                                               |                 |                         |                                 |                                |                |
| Through-Penetration Horizontal Firestopping Systems (floors)                                                |                                                                                          |                                                         |                                                                                              |                                                         |                         |                                     |                                               |                 |                         |                                 |                                |                |
| 3                                                                                                           | Example No.3 EGS Nelson Firestop ES1399 Sealant                                          | UL XHEZF-E-3007                                         | Cables - max 3 1/2" dia                                                                      | 0" point contact to max 1/2"                            | NA                      | NA                                  | 1 Hour                                        | 1 Hour          | 1 Hour                  |                                 |                                |                |
|                                                                                                             |                                                                                          |                                                         |                                                                                              |                                                         |                         |                                     |                                               |                 |                         |                                 |                                |                |
|                                                                                                             |                                                                                          |                                                         |                                                                                              |                                                         |                         |                                     |                                               |                 |                         |                                 |                                |                |
| Fire-resistant Joint Systems (construction joints, perimeter joints, top-of-wall and bottom-of-wall joints) |                                                                                          |                                                         |                                                                                              |                                                         |                         |                                     |                                               |                 |                         |                                 |                                |                |
| 4                                                                                                           | Example No.4 EGS Nelson Firestop ES1399 Sealant                                          | UL HW-D-019                                             | NA                                                                                           | NA                                                      | P8                      | 3" fluted deck w/ 2 1/2" concrete   | 2 Hour                                        |                 |                         |                                 |                                | Class II & III |
| 5                                                                                                           | Example No. 5 3M FS-2000+ Rockwool Rowl Safe                                             | UL FW-D-1009                                            | NA                                                                                           | 4" nominal joint width                                  | P4                      | 6" nominal, cmu reinforced concrete | 2 Hour                                        | 3 Hour          |                         |                                 |                                | Class II & III |
|                                                                                                             |                                                                                          |                                                         |                                                                                              |                                                         |                         |                                     |                                               |                 |                         |                                 |                                |                |
|                                                                                                             |                                                                                          |                                                         |                                                                                              |                                                         |                         |                                     |                                               |                 |                         |                                 |                                |                |
| Membrane Penetrations (vertical and horizontal)                                                             |                                                                                          |                                                         |                                                                                              |                                                         |                         |                                     |                                               |                 |                         |                                 |                                |                |
| 6                                                                                                           | Example No.6 Hiti- CP 617 Firestop Putty Pad                                             | UL WL-1462                                              | medical gas station outlets (max 100 psig) Beacon Medical Products                           | 1/8" min. thick moldable putty pads                     | P8                      | 3 1/2" steel studs 16" oc           | 1 Hour                                        | 1 Hour          | 1 Hour                  |                                 |                                |                |
|                                                                                                             |                                                                                          |                                                         |                                                                                              |                                                         |                         |                                     |                                               |                 |                         |                                 |                                |                |
|                                                                                                             |                                                                                          |                                                         |                                                                                              |                                                         |                         |                                     |                                               |                 |                         |                                 |                                |                |

**END OF SECTION**

## **SECTION 07 9200 JOINT SEALANTS**

### **PART 1 GENERAL**

#### **1.01 SECTION INCLUDES**

- A. Nonsag gunnable joint sealants.
- B. Joint backings and accessories.
- C. Owner-provided field quality control.

#### **1.02 RELATED REQUIREMENTS**

- A. Section 01 6116 - Volatile Organic Compound (VOC) Content Restrictions: Additional requirements for sealants and primers.
- B. Section 07 8400 - Firestopping: Firestopping sealants.
- C. Section 07 9513 - Expansion Joint Cover Assemblies: Sealants forming part of expansion joint cover assemblies.
- D. Section 08 7100 - Door Hardware: Setting exterior door thresholds in sealant.
- E. Section 08 8000 - Glazing: Glazing sealants and accessories.
- F. Section 09 2116 - Gypsum Board Assemblies: Sealing acoustical and sound-rated walls and ceilings.
- G. Section 09 3000 - Tiling: Sealant between tile and plumbing fixtures and at junctions with other materials and changes in plane.

#### **1.03 REFERENCE STANDARDS**

- A. ASTM C661 - Standard Test Method for Indentation Hardness of Elastomeric-Type Sealants by Means of a Durometer 2015 (Reapproved 2022).
- B. ASTM C834 - Standard Specification for Latex Sealants 2017.
- C. ASTM C881/C881M - Standard Specification for Epoxy-Resin-Base Bonding Systems for Concrete 2020a.
- D. ASTM C919 - Standard Practice for Use of Sealants in Acoustical Applications 2019.
- E. ASTM C920 - Standard Specification for Elastomeric Joint Sealants 2018.
- F. ASTM C1193 - Standard Guide for Use of Joint Sealants 2016.
- G. ASTM C1248 - Standard Test Method for Staining of Porous Substrate by Joint Sealants 2018.
- H. ASTM C1330 - Standard Specification for Cylindrical Sealant Backing for Use with Cold Liquid-Applied Sealants 2018.
- I. ASTM D2240 - Standard Test Method for Rubber Property--Durometer Hardness 2015 (Reapproved 2021).
- J. ASTM D412 - Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers--Tension 2016 (Reapproved 2021).
- K. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials 2020.
- L. UL 263 - Standard for Fire Tests of Building Construction and Materials Current Edition, Including All Revisions.

#### **1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data for Sealants: Submit manufacturer's technical data sheets for each product to be used, that includes the following.
  - 1. Physical characteristics, including movement capability, VOC content, hardness, cure time, and color availability.
  - 2. List of backing materials approved for use with the specific product.

3. Substrates that product is known to satisfactorily adhere to and with which it is compatible.
  4. Substrates the product should not be used on.
- C. Product Data for Accessory Products: Submit manufacturer's technical data sheet for each product to be used, including physical characteristics, installation instructions, and recommended tools.
- D. Color Cards for Selection: Where sealant color is not specified, submit manufacturer's color cards showing standard colors available for selection.

## **1.05 QUALITY ASSURANCE**

- A. Installer Qualifications: Company specializing in performing the work of this section and with at least three years of documented experience.
- B. Owner will employ an independent testing agency to perform the field quality control inspection and testing as referenced in PART 3 of this section and as follows, to prepare and submit the field quality control plan and log, and to provide recommendations of remedies in the case of failure.

## **1.06 WARRANTY**

- A. Correct defective work within a five year period after Date of Substantial Completion.
- B. Warranty: Include coverage for installed sealants and accessories that fail to achieve watertight seal, exhibit loss of adhesion or cohesion, or do not cure.

## **PART 2 PRODUCTS**

### **2.01 MANUFACTURERS**

- A. Non-Sag Sealants: Permits application in joints on vertical surfaces without sagging or slumping.
1. ADFAST Corporation: [www.adfastcorp.com/#sle](http://www.adfastcorp.com/#sle).
  2. Bostik Inc: [www.bostik-us.com/#sle](http://www.bostik-us.com/#sle).
  3. Dow Chemical Company: [consumer.dow.com/en-us/industry/ind-building-construction.html/#sle](http://consumer.dow.com/en-us/industry/ind-building-construction.html/#sle).
  4. Pecora Corporation: [www.pecora.com/#sle](http://www.pecora.com/#sle).
  5. Tremco Commercial Sealants & Waterproofing: [www.tremcosealants.com/#sle](http://www.tremcosealants.com/#sle).
  6. Substitutions: See Section 01 6000 - Product Requirements.

### **2.02 JOINT SEALANT APPLICATIONS**

- A. Scope:
1. Exterior Joints: Seal open joints, whether or not the joint is indicated on drawings, unless specifically indicated not to be sealed. Exterior joints to be sealed include, but are not limited to, the following items.
    - a. Wall expansion and control joints.
    - b. Joints between door, window, and other frames and adjacent construction.
    - c. Joints between different exposed materials.
    - d. Openings below ledge angles in masonry.
    - e. Other joints indicated below.
  2. Interior Joints: Do not seal interior joints unless specifically indicated to be sealed. Interior joints to be sealed include, but are not limited to, the following items.
    - a. Joints between door, window, and other frames and adjacent construction.
    - b. In sound-rated wall and ceiling assemblies, gaps at electrical outlets, wiring devices, piping, and other openings; between wall/ceiling and other construction; and other flanking sound paths.
    - c. Other joints indicated below.
  3. Do not seal the following types of joints.
    - a. Intentional weepholes in masonry.
    - b. Joints indicated to be treated with manufactured expansion joint cover or some other type of sealing device.



- c. Joints where sealant is specified to be provided by manufacturer of product to be sealed.
- d. Joints where installation of sealant is specified in another section.
- e. Joints between suspended panel ceilings/grid and walls.
- B. Exterior Joints: Use non-sag non-staining silicone sealant, unless otherwise indicated.
- C. Interior Joints: Use non-sag polyurethane sealant, unless otherwise indicated.
  - 1. In Sound-Rated Assemblies: Acrylic emulsion latex sealant.
- D. Interior Wet Areas: ; fixtures in wet areas include plumbing fixtures, food service equipment, countertops, cabinets, other similar items, and [\_\_\_\_\_].
- E. Sound-Rated Assemblies: Walls and ceilings identified as "STC-rated", "sound-rated", or "acoustical".

### 2.03 NONSAG JOINT SEALANTS

- A. Non-Staining Silicone Sealant: ASTM C920, Grade NS, Uses M and A; not expected to withstand continuous water immersion or traffic.
  - 1. Movement Capability: Plus and minus 25 percent, minimum.
  - 2. Non-Staining To Porous Stone: Non-staining to light-colored natural stone when tested in accordance with ASTM C1248.
  - 3. Dirt Pick-Up: Reduced dirt pick-up compared to other silicone sealants.
  - 4. Color: To be selected by Architect from manufacturer's standard range.
  - 5. Manufacturers:
    - a. ADFAST Corporation; ADSEAL LM 4600 Series: [www.adfastcorp.com/#sle](http://www.adfastcorp.com/#sle).
    - b. Dow Chemical Company; DOWSIL 756 SMS Building Sealant: [consumer.dow.com/en-us/industry/ind-building-construction.html/#sle](http://consumer.dow.com/en-us/industry/ind-building-construction.html/#sle).
    - c. Pecora Corporation; Pecora 890 NST (Non-Staining Technology): [www.pecora.com/#sle](http://www.pecora.com/#sle).
    - d. Substitutions: See Section 01 6000 - Product Requirements.
- B. Silicone Sealant: ASTM C920, Grade NS, Use T; single-component, explicitly approved by manufacturer for traffic exposure when recessed below traffic surface; not expected to withstand continuous water immersion.
  - 1. Movement Capability: Plus 100 percent and minus 50 percent, minimum.
  - 2. Color: To be selected by Architect from manufacturer's standard range.
  - 3. Manufacturers:
    - a. Dow Chemical Company; DOWSIL NS Parking Structure Sealant: [consumer.dow.com/en-us/industry/ind-building-construction.html/#sle](http://consumer.dow.com/en-us/industry/ind-building-construction.html/#sle).
    - b. Pecora Corporation; Pecora 301 NS (Non-Sag): [www.pecora.com/#sle](http://www.pecora.com/#sle).
    - c. Substitutions: See Section 01 6000 - Product Requirements.
- C. Silicone Sealant: ASTM C920, Grade NS, Uses M and A; not expected to withstand continuous water immersion or traffic.
  - 1. Movement Capability: Plus and minus 25 percent, minimum.
  - 2. Color: To be selected by Architect from manufacturer's standard range.
  - 3. Manufacturers:
    - a. ADFAST Corporation; ADSEAL Production 4550 Series: [www.adfastcorp.com/#sle](http://www.adfastcorp.com/#sle).
    - b. Dow Chemical Company; DOWSIL 999-A Building and Glazing Sealant: [consumer.dow.com/en-us/industry/ind-building-construction.html/#sle](http://consumer.dow.com/en-us/industry/ind-building-construction.html/#sle).
    - c. Pecora Corporation; Pecora 860: [www.pecora.com/#sle](http://www.pecora.com/#sle).
- D. Mildew-Resistant Silicone Sealant: ASTM C920, Grade NS, Uses M and A; single component, mildew resistant; not expected to withstand continuous water immersion or traffic.
  - 1. Color: White.
  - 2. Manufacturers:
    - a. ADFAST Corporation; ADSEAL KB 4800 Series: [www.adfastcorp.com/#sle](http://www.adfastcorp.com/#sle).
    - b. Pecora Corporation; Pecora 898 NST (Non-Staining Technology): [www.pecora.com/#sle](http://www.pecora.com/#sle).

- c. Substitutions: See Section 01 6000 - Product Requirements.
- E. Polymer Sealant: ASTM C920; single component, cured sealant is paintable and mold/mildew resistant, low odor and VOC, and ultraviolet (UV) resistant.
  - 1. Adheres to wet surfaces.
  - 2. Color: White.
  - 3. Manufacturers:
    - a. ADFAST Corporation; ADSEAL DWSP 1940 Series: [www.adfastcorp.com/#sle](http://www.adfastcorp.com/#sle).
    - b. Substitutions: See Section 01 6000 - Product Requirements.
- F. Tamper-Resistant, Silyl-Terminated Polyether (STPE) and Polyurethane (STPU) Sealant: ASTM C920, Grade NS, Uses M and A; single component; not expected to withstand continuous water immersion or traffic.
  - 1. Movement Capability: Plus and minus 25 percent, minimum
  - 2. Hardness Range: 25 to 30, Shore A, when tested in accordance with ASTM C661.
  - 3. Color: To be selected by Architect from manufacturer's standard range.
  - 4. Manufacturers:
    - a. Pecora Corporation; DynaTrol I-XL Hybrid: [www.pecora.com/#sle](http://www.pecora.com/#sle).
    - b. Substitutions: See Section 01 6000 - Product Requirements.
- G. Polyurethane Sealant: ASTM C920, Grade NS, Uses M and A; single or multi-component; not expected to withstand continuous water immersion or traffic.
  - 1. Color: To be selected by Architect from manufacturer's standard range.
  - 2. Manufacturers:
    - a. Pecora Corporation; DynaFlex: [www.pecora.com/#sle](http://www.pecora.com/#sle).
    - b. Substitutions: See Section 01 6000 - Product Requirements.
- H. Polyurethane Sealant for Continuous Water Immersion: ASTM C920, Grade NS, Uses M and A; single or multi-component; explicitly approved by manufacturer for continuous water immersion; suitable for traffic exposure when recessed below traffic surface.
  - 1. Movement Capability: Plus and minus 35 percent, minimum.
  - 2. Color: To be selected by Architect from manufacturer's standard range.
  - 3. Manufacturers:
    - a. Sika Corporation; Sikaflex-1a: [www.usa-sika.com/#sle](http://www.usa-sika.com/#sle).
    - b. Sika Corporation; Sikaflex-2c NS: [www.usa-sika.com/#sle](http://www.usa-sika.com/#sle).
    - c. Substitutions: See Section 01 6000 - Product Requirements.
- I. Epoxy Sealant: ASTM C881/C881M, Type I and III, Grade 3, Class B and C; two-component.
  - 1. Hardness Range: 65 to 75, Shore D, when tested in accordance with ASTM C661.
  - 2. Color: To be selected by Architect from manufacturer's standard range.
  - 3. Service Temperature Range: 40 to 120 degrees F.
  - 4. Manufacturers:
    - a. Pecora Corporation; DynaPoxy EP-1200 Two-Part Epoxy Security Sealant: [www.pecora.com/#sle](http://www.pecora.com/#sle).
    - b. Substitutions: See Section 01 6000 - Product Requirements.
- J. Acrylic-Urethane Sealant: ASTM C920, Grade NS, Uses M and A; single component; paintable; not expected to withstand continuous water immersion or traffic.
  - 1. Movement Capability: Plus and minus 12-1/2 percent, minimum.
  - 2. Hardness Range: 15 to 40, Shore A, when tested in accordance with ASTM C661.
  - 3. Color: White.
  - 4. Service Temperature Range: Minus 40 to 180 degrees F.
  - 5. Manufacturers:
    - a. DAP Products Inc; DYNAFLEX 920 Sealant: [www.dapspecline.com/#sle](http://www.dapspecline.com/#sle).
    - b. Substitutions: See Section 01 6000 - Product Requirements.
- K. Type ☐ - Acrylic Emulsion Latex: Water-based; ASTM C834, single component, non-staining, non-bleeding, non-sagging; not intended for exterior use.
  - 1. Color: To be selected by Architect from manufacturer's standard range.

2. Manufacturers:
  - a. Pecora Corporation; AC-20 +Silicone: [www.pecora.com/#sle](http://www.pecora.com/#sle).
- L. Acrylic Latex Sealant: ASTM C834; for use as acoustical sealant and in firestopping systems for expansion joints and through penetrations.
  1. Color: To be selected by Architect from manufacturer's standard range.
  2. Fire Rated System: Complies with UL 263 and ASTM E119 with UL fire resistance classifications.
  3. Manufacturers:
    - a. Pecora Corporation; AC-20 FTR (Fire and Temperature Rated): [www.pecora.com/#sle](http://www.pecora.com/#sle).
    - b. Substitutions: See Section 01 6000 - Product Requirements.

## 2.04 ACCESSORIES

- A. Backer Rod: Cylindrical cellular foam rod with surface that sealant will not adhere to, compatible with specific sealant used, and recommended by backing and sealant manufacturers for specific application.
  1. Type for Joints Subject to Pedestrian or Vehicular Traffic: ASTM C1330; Type B - Bi-Cellular Polyethylene.
  2. Closed Cell and Bi-Cellular: 25 to 33 percent larger in diameter than joint width.
  3. Manufacturers:
    - a. ADFAST Corporation; ADSEAL BR-2600 (Backer Rod): [www.adfastcorp.com/#sle](http://www.adfastcorp.com/#sle).
- B. Preformed Extruded Silicone Joint Seal: Pre-cured low-modulus silicone extrusion, in sizes to fit applications indicated on drawings, combined with a neutral-curing liquid silicone sealant for bonding joint seal to substrates.
  1. Size: 1 inch wide, in rolls 100 feet long.
  2. Thickness: 0.78 inch, with ridges along outside bottom edges for bonding area.
  3. Color: As selected by Architect..
  4. Durometer Hardness, Type A: 26 to 32, minimum, when tested in accordance with ASTM D2240.
  5. Tensile Strength: 218 psi, in accordance with ASTM D412.
  6. Elongation at Break: 554 percent, in accordance with ASTM D412.
  7. Manufacturers:
    - a. Tremco Commercial Sealants & Waterproofing; Spectrem Simple Seal: [www.tremcosealants.com/#sle](http://www.tremcosealants.com/#sle).
    - b. Substitutions: See Section 01 6000 - Product Requirements.
- C. Preformed Extruded Polyurethane Joint Seal: Medium-modulus, preformed polyurethane extrusion used to bridge joints under elastomeric wall coatings, in sizes to fit applications indicated on drawings, combined with polyurethane sealant for bonding joint seal to substrates.
  1. Size: 1-1/2 inch wide, in rolls 100 feet long.
  2. Thickness: 0.051 inch, with ridges along outside bottom edges for bonding area.
  3. Color: Light gray.
  4. Durometer Hardness, Type A: 55, minimum, when tested in accordance with ASTM D2240.
  5. Tensile Strength: 532 psi, in accordance with ASTM D412.
  6. Elongation at Break: 690 percent, in accordance with ASTM D412.
  7. Manufacturers:
    - a. Tremco Commercial Sealants & Waterproofing; Dymonic Simple Seal: [www.tremcosealants.com/#sle](http://www.tremcosealants.com/#sle).
- D. Backing Tape: Self-adhesive polyethylene tape with surface that sealant will not adhere to and recommended by tape and sealant manufacturers for specific application.
- E. Masking Tape: Self-adhesive, nonabsorbent, non-staining, removable without adhesive residue, and compatible with surfaces adjacent to joints and sealants.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that joints are ready to receive work.
- B. Verify that backing materials are compatible with sealants.
- C. Verify that backer rods are of the correct size.

### **3.02 PREPARATION**

- A. Remove loose materials and foreign matter that could impair adhesion of sealant.
- B. Clean joints, and prime as necessary, in accordance with manufacturer's instructions.
- C. Perform preparation in accordance with manufacturer's instructions and ASTM C1193.
- D. Mask elements and surfaces adjacent to joints from damage and disfigurement due to sealant work; be aware that sealant drips and smears may not be completely removable.
- E. Concrete Floor Joints That Will Be Exposed in Completed Work: Test joint filler in inconspicuous area to verify that it does not stain or discolor slab.

### **3.03 INSTALLATION**

- A. Perform work in accordance with sealant manufacturer's requirements for preparation of surfaces and material installation instructions.
- B. Perform installation in accordance with ASTM C1193.
- C. Perform acoustical sealant application work in accordance with ASTM C919.
- D. Measure joint dimensions and size joint backers to achieve width-to-depth ratio, neck dimension, and surface bond area as recommended by manufacturer, except where specific dimensions are indicated.
- E. Install bond breaker backing tape where backer rod cannot be used.
- F. Install sealant free of air pockets, foreign embedded matter, ridges, and sags, and without getting sealant on adjacent surfaces.
- G. Do not install sealant when ambient temperature is outside manufacturer's recommended temperature range, or will be outside that range during the entire curing period, unless manufacturer's approval is obtained and instructions are followed.
- H. Nonsag Sealants: Tool surface concave, unless otherwise indicated; remove masking tape immediately after tooling sealant surface.

### **3.04 FIELD QUALITY CONTROL**

- A. Perform field quality control inspection/testing as specified in PART 1 under QUALITY ASSURANCE article.
- B. Remove and replace failed portions of sealants using same materials and procedures as indicated for original installation.

### **3.05 POST-OCCUPANCY**

- A. Post-Occupancy Inspection: Perform visual inspection of entire length of project sealant joints at a time that joints have opened to their greatest width; i.e. at low temperature in thermal cycle. Report failures immediately and repair.

**END OF SECTION**

**SECTION 07 9513  
EXPANSION JOINT COVER ASSEMBLIES**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Expansion joint cover assemblies for floor, wall, and ceiling surfaces.

**1.02 REFERENCE STANDARDS**

- A. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes 2021.
- B. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric) 2021.
- C. ASTM B308/B308M - Standard Specification for Aluminum-Alloy 6061-T6 Standard Structural Profiles 2020.
- D. ASTM E1966 - Standard Test Method for Fire-Resistive Joint Systems 2015 (Reapproved 2019).
- E. UL 2079 - Standard for Tests for Fire Resistance of Building Joint Systems Current Edition, Including All Revisions.

**PART 2 PRODUCTS**

**2.01 MANUFACTURERS**

- A. Expansion Joint Cover Assemblies:
  - 1. Construction Specialties, Inc: [www.c-sgroup.com/#sle](http://www.c-sgroup.com/#sle).
  - 2. EMSEAL Joint Systems, Ltd: [www.emseal.com/#sle](http://www.emseal.com/#sle).
  - 3. MM Systems Corp: [www.mmsystemscorp.com/#sle](http://www.mmsystemscorp.com/#sle).
  - 4. Watson Bowman Acme Corporation: [www.watsonbowmanacme.com/#sle](http://www.watsonbowmanacme.com/#sle).
  - 5. Balco, Inc.; [www.balcousa.com](http://www.balcousa.com).
  - 6. Substitutions: See Section 01 6000 - Product Requirements.

**2.02 EXPANSION JOINT COVER ASSEMBLY APPLICATIONS**

- A. Interior Floor Joints Subject to Thermal Movement:
  - 1. Manufacturers:
    - a. Balco, Inc; No-Bump Floor to Floor System, Aluminum (NBAF): [www.balcousa.com/#sle](http://www.balcousa.com/#sle).
    - b. Construction Specialties, Inc; Allway Standard Metal Floor Covers: [www.c-sgroup.com/#sle](http://www.c-sgroup.com/#sle).
- B. Interior Floor Joints Subject to Seismic Movement:
  - 1. Manufacturers:
    - a. Construction Specialties, Inc; Allway Seismic Metal Floor Covers: [www.c-sgroup.com/#sle](http://www.c-sgroup.com/#sle).
- C. Interior Wall/Ceiling Joints Subject to Thermal Movement:
  - 1. Manufacturers:
    - a. Balco, Inc; Wall and Ceiling Snap-On Joint Cover (WD): [www.balcousa.com/#sle](http://www.balcousa.com/#sle).
    - b. Construction Specialties, Inc; Allway Standard Wall and Ceiling Covers: [www.c-sgroup.com/#sle](http://www.c-sgroup.com/#sle).
- D. Interior Non-Fire-Rated Wall/Ceiling Joints Subject to Seismic Movement:
  - 1. Manufacturers:
    - a. Construction Specialties, Inc; Flush Seismic Wall and Ceiling Covers: [www.c-sgroup.com/#sle](http://www.c-sgroup.com/#sle).
- E. Interior Fire-Rated Floor/Wall Joints Subject to Seismic Movement:
  - 1. Manufacturers:
    - a. Watson Bowman Acme Corporation; Wabo FlameGuard II: [www.watsonbowmanacme.com/#sle](http://www.watsonbowmanacme.com/#sle).

- F. Interior Fire-Rated Wall/Ceiling/Floor Joints Subject to Thermal Movement:
  - 1. Manufacturers:
    - a. Construction Specialties, Inc; Fire Barriers: [www.c-sgroup.com/#sle](http://www.c-sgroup.com/#sle).
- G. Interior/Exterior Fire-Rated Wall Joints Subject to Thermal Movement:
  - 1. Manufacturers:
    - a. EMSEAL Joint Systems, Ltd; Emshield WFR2 System: [www.emseal.com/#sle](http://www.emseal.com/#sle).
- H. Exterior Wall Joints Subject to Thermal Movement:
  - 1. Manufacturers:
    - a. Construction Specialties, Inc; Exterior Wall Covers: [www.c-sgroup.com/#sle](http://www.c-sgroup.com/#sle).
- I. Exterior Roof Bellows with Metal Flange Expansion Joint Covers:
  - 1. Manufacturers:
    - a. Balco, Inc; Roof Bellows, Aluminum Flanges (BRBA): [www.balcousa.com/#sle](http://www.balcousa.com/#sle).
- J. Exterior Roof Expansion Joint Covers:
  - 1. Manufacturers:
- K. Parking/Traffic Deck Joints Subject to Seismic Movement:
- L. Below Grade, Blind-Side and Positive-Side, and Under-Slab Joints:
  - 1. Manufacturers:
    - a. EMSEAL Joint Systems, Ltd; BG System: [www.emseal.com/#sle](http://www.emseal.com/#sle).

### **2.03 EXPANSION JOINT COVER ASSEMBLIES**

- A. Expansion Joint Cover Assemblies - General: Factory-fabricated and assembled; designed to completely fill joint openings, sealed to prevent passage of air, dust, water, smoke; suitable for traffic expected.
  - 1. Joint Dimensions and Configurations: As indicated on drawings.
  - 2. Joint Cover Sizes: Selected to suit joint width and configuration, based on manufacturer's published recommendations and limitations.
  - 3. Joint Cover Styles: As indicated on drawings.
  - 4. Joint Movement Capability: If not indicated, provide minimum plus/minus 25 percent joint movement capability.
  - 5. Lengths: Provide covers in full lengths required; avoid splicing wherever possible.
  - 6. Anchors, Fasteners, and Fittings: Provided by cover manufacturer.
- B. Floor Joint Covers: Coordinate with indicated floor coverings.
- C. Covers In Fire Rated Assemblies: Provide cover assembly having fire rating equivalent to that of assembly into which it is installed.

### **2.04 MATERIALS**

- A. Extruded Aluminum: ASTM B221 (ASTM B221M), 6063 alloy, T6 temper; or ASTM B308/B308M, 6061 alloy, T6 temper.
  - 1. Exposed Finish Outdoors: Medium bronze anodized.
  - 2. Exposed Finish at Floors: Medium bronze anodized.
  - 3. Exposed Finish at Walls and Ceilings: Medium bronze anodized.
- B. Resilient Seals:
  - 1. For Ceilings: Any resilient material, flush, pleated, or hollow gasket.
  - 2. For Pedestrian Traffic Applications: EPDM rubber, Neoprene, or Santoprene; no PVC; Shore A hardness of 40 to 50 Durometer.
  - 3. For Vehicular Traffic Applications: EPDM rubber, Neoprene, or Santoprene; no PVC; Shore A hardness of 40 to 50 Durometer.
- C. Anchors and Fasteners: As recommended by cover manufacturer.
- D. Ferrous Metal Anchors: Galvanized where embedded in concrete or in contact with cementitious materials.
- E. Threaded Fasteners: Aluminum.

- F. Backing Paint for Aluminum Components in Contact with Cementitious Materials: Asphaltic type.

## **2.05 ACCESSORIES**

- A. Resilient Fire Barrier: For use with metal expansion joint covers and elastomeric seals without use of mechanical fasteners, with fire rating in accordance with surrounding construction performance capabilities.
  - 1. Application: Floor.
  - 2. Fire Resistance Rating: [\_\_\_\_], in accordance with ASTM E1966 and UL 2079.
  - 3. Joint Opening: 1 inch, nominal.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that joint preparation and dimensions are acceptable and in accordance with manufacturer's requirements.

### **3.02 INSTALLATION**

- A. Install components and accessories in accordance with manufacturer's instructions.
- B. Align work plumb and level, flush with adjacent surfaces.
- C. Rigidly anchor to substrate to prevent misalignment.

### **3.03 PROTECTION**

- A. Do not permit traffic over unprotected floor joint surfaces.
- B. Provide strippable coating to protect finish surface.

**END OF SECTION**

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**SECTION 08 1116  
ALUMINUM DOORS AND FRAMES**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Flush aluminum doors with fiberglass reinforced plastic (FRP) face sheets.
- B. Aluminum frames.
- C. Flush door panels.
- D. Glazing.

**1.02 RELATED REQUIREMENTS**

- A. Section 07 9200 - Joint Sealants: Sealing joints between door frames and adjacent construction.
- B. Section 08 1416 - Flush Wood Doors: Wood doors to be installed in aluminum frames specified in this section.
- C. Section 08 1213 - Hollow Metal Frames: Fire rated door frames.
- D. Section 08 7100 - Door Hardware: Hardware for aluminum doors.
- E. Section 08 8000 - Glazing: Glazing materials for aluminum doors and frames.

**1.03 REFERENCE STANDARDS**

- A. AAMA/WDMA/CSA 101/I.S.2/A440 - North American Fenestration Standard/Specification for Windows, Doors, and Skylights 2017.
- B. AAMA 502 - Voluntary Specification for Field Testing of Newly Installed Fenestration Products 2012.
- C. AAMA 609 & 610 - Cleaning and Maintenance Guide for Architecturally Finished Aluminum (Combined Document) 2015.
- D. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum 2020.
- E. AAMA 1503 - Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors and Glazed Wall Sections 2009.
- F. ADA Standards - Americans with Disabilities Act (ADA) Standards for Accessible Design 2010.
- G. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products 2017.
- H. ASTM B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate 2014.
- I. ASTM B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate (Metric) 2014.
- J. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes 2021.
- K. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric) 2021.
- L. ASTM D256 - Standard Test Methods for Determining the Izod Pendulum Impact Resistance of Plastics 2010 (Reapproved 2018).
- M. ASTM D570 - Standard Test Method for Water Absorption of Plastics 1998 (Reapproved 2018).
- N. ASTM D638 - Standard Test Method for Tensile Properties of Plastics 2014.
- O. ASTM D790 - Standard Test Methods for Flexural Properties of Unreinforced and Reinforced Plastics and Electrical Insulating Materials 2017.
- P. ASTM D2583 - Standard Test Method for Indentation Hardness of Rigid Plastics by Means of a Barcol Impressor 2013a.

- Q. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2021a.
- R. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements 2009 (Reapproved 2016).
- S. ASTM E283 - Standard Test Method for Determining the Rate of Air Leakage Through Exterior Windows, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen 2004 (Reapproved 2012).
- T. ASTM E331 - Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference 2000 (Reapproved 2016).
- U. ASTM E783 - Standard Test Method for Field Measurement of Air Leakage Through Installed Exterior Windows and Doors 2002 (Reapproved 2018).
- V. ASTM E1105 - Standard Test Method for Field Determination of Water Penetration of Installed Exterior Windows, Skylights, Doors, and Curtain Walls, by Uniform or Cyclic Static Air Pressure Difference 2015.
- W. ICC A117.1 - Accessible and Usable Buildings and Facilities 2017.

#### **1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Manufacturer's descriptive literature for each type of door; include information on fabrication methods.
- C. Shop Drawings: Include elevations of each opening type.
  - 1. Verify dimensions by field measurements before fabrication and indicate on shop drawings.
- D. Selection Samples: Complete set of color and finish options, using actual materials, for Architect's selection.
- E. Verification Samples: Actual pieces of products in each finish specified, not less than 6 inches square or 6 inches long for linear components. For finishes subject to color variation, include not less than two samples illustrating extreme range to be anticipated.
- F. Test Report: Submit certified test reports from qualified independent testing agency indicating doors comply with specified performance requirements.
- G. Installer's qualification statement.
- H. Field Quality Control Submittals: Report of field testing for water penetration and air leakage.
- I. Warranty: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

#### **1.05 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with not less than five years of documented experience.
- B. Installer Qualifications: Company specializing in performing work of type specified and with at least three years of documented experience.

#### **1.06 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver aluminum components in manufacturer's standard protective packaging, palletted, crated, or banded together.
- B. Inspect delivered components for damage and replace. Repaired components will not be accepted.
- C. Store components in clean, dry, indoor area, under cover in manufacturer's packaging until installation.
- D. Protect materials and finish from damage during handling and installation.

## **1.07 FIELD CONDITIONS**

- A. Do not begin installation of interior aluminum components until space has been enclosed and ambient thermal conditions are being maintained at levels consistent with final project requirements.

## **1.08 WARRANTY**

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.
- B. Correct defective Work within a five year period after Date of Substantial Completion.
- C. Provide ten year manufacturer warranty for defects in workmanship and materials.

## **PART 2 PRODUCTS**

### **2.01 MANUFACTURERS**

- A. Flush Aluminum Doors with Fiberglass Reinforced Plastic (FRP) Face Sheets:
  - 1. Special-Lite, Inc; SL-17: [www.special-lite.com/#sle](http://www.special-lite.com/#sle).
- B. Aluminum Frames:
  - 1. Special-Lite, Inc..

### **2.02 DOORS AND FRAMES**

- A. Accessibility: Comply with ICC A117.1 and ADA Standards.
- B. Flush Aluminum Doors with Fiberglass Reinforced Plastic (FRP) Face Sheets: Aluminum internal framing; no steel components.
  - 1. Thickness: 1-3/4 inches.
  - 2. Aluminum Finish: Class I - Color anodized.
  - 3. Facing: Seamless, ultraviolet stabilized laminated FRP sheet.
    - a. Sheet Thickness: 0.12 inch, minimum.
    - b. Texture - FRP: Pebble grain.
    - c. Surface Burning Characteristics: Flame spread index (FSI) of 0 to 25, Class A, and smoke developed index (SDI) of 450 or less; when tested in accordance with ASTM E84.
    - d. Color: Aluminum - medium bronze anodized.
    - e. Color - FRP: to be selected by Architect from manufacturer's full range.
  - 4. Weatherstripping: Replaceable pile type; at jambs and head of exterior doors.
- C. Aluminum Frames for Doors, Sidelights, or Transoms: Extruded aluminum, non-thermally broken hollow or C-shaped sections; no steel components.
  - 1. Frame Depth: 4-1/4 inches.
  - 2. Finish: Same as doors.
  - 3. Weatherstripping: Replaceable pile type; at jambs and head.
  - 4. Sidelight/Transom Glazing: See Section 08 8000.
- D. Dimensions and Shapes: As indicated on drawings; dimensions indicated are nominal.
  - 1. Provide vision lites as indicated on drawings.
  - 2. Provide the following clearances:
    - a. Hinge and Lock Stiles: 1/8 inch.
    - b. Between Meeting Stiles: 1/4 inch.
    - c. At Top Rail and Bottom Rail: 1/8 inch.

### **2.03 COMPONENTS**

- A. Flush Door Panels: Without visible seams on face sheet.
  - 1. Framing and Hardware Backup: Extruded aluminum tubing, 1/8 inch minimum thickness.
  - 2. Perimeter Edges: Extruded aluminum cap.
  - 3. Laminating Adhesive: Manufacturer's standard low-VOC materials.
- B. Frames: Extruded aluminum shapes, not less than 0.062 inch thick, reinforced at hinge and strike locations.
  - 1. Corner Brackets: Extruded aluminum, fastened with stainless steel screws.

2. Trim: Extruded aluminum, not less than 0.062 inch thick, removable snap-in type without exposed fasteners.
- C. Vision Lites: Extruded aluminum framed, gasket glazed.
  1. Glazing: See Section 08 8000.
- D. Astragals and Edges for Double Doors: Pairs of doors astragals, and door edge sealing and protection devices.
  1. Provide surface mounted astragal to cover or fill space for full door height between pair of doors or door and adjacent jamb.
  2. Edge Type: Beveled edge
  3. Material: Aluminum.
  4. Metal Finish: color powder coating.
- E. Additional Door Hardware: See Section 08 7100.

## **2.04 PERFORMANCE REQUIREMENTS**

- A. Provide door assemblies that have been designed and fabricated in compliance with specified performance requirements.
- B. Water Leakage: No uncontrolled leakage on interior face when tested in accordance with ASTM E331 at differential pressure of 7.5 psf.
- C. Air Leakage: Maximum of 0.1 cu ft/min/sq ft at 6.27 psf differential pressure, when tested in accordance with ASTM E283.
- D. Condensation Resistance Factor: 50, measured in accordance with AAMA 1503.
- E. Overall U-value, Including Glazing: 0.35, minimum, measured on exterior door size required for this project.
- F. Acoustical Performance: Sound Transmission Class (STC) of 25, minimum, when tested in accordance with ASTM E90.
- G. Fiberglass Reinforced Plastic (FRP) Face Sheet Properties:
  1. Izod Impact Resistance: ASTM D256, 7 ft lbf/inch of width, minimum, with notched izod.
  2. Tensile Strength at Break: ASTM D638, 13,250 psi, minimum.
  3. Water Absorption: ASTM D570, 0.16 percent, maximum, after 24 hours at 74 degrees F.
  4. Flexural Strength: ASTM D790, 27,000 psi, minimum.
  5. Barcol Hardness: ASTM D2583, minimum of 40 units.

## **2.05 MATERIALS**

- A. Aluminum Sheet: ASTM B209 (ASTM B209M), alloy 5005, temper H14, stretcher leveled.
- B. Extruded Aluminum: ASTM B221 (ASTM B221M), alloy 6063, temper T5, or alloy 6463, temper T5.

## **2.06 FINISHES**

- A. Class I Natural Anodized Finish: Clear anodic coating; AAMA 611 AA-M12C22A41, minimum dry film thickness (DFT) of 0.7 mils, 0.0007 inch.
- B. Class I Color Anodized Finish: Electrolytically deposited colored anodic coating; AAMA 611 AA-M12C22A44, minimum dry film thickness (DFT) of 0.7 mils, 0.0007 inch.
- C. Color: As selected by Architect from manufacturer's standard line.
- D. Touch-Up Materials: As recommended by coating manufacturer for field application.

## **2.07 ACCESSORIES**

- A. Fasteners: Aluminum, non-magnetic stainless steel, or other material warranted by manufacturer as non-corrosive and compatible with aluminum components.
- B. Brackets and Reinforcements: Manufacturer's high-strength aluminum units where feasible, otherwise, non-magnetic stainless steel or steel hot-dip galvanized in compliance with ASTM A123/A123M.
- C. Bituminous Coating: Cold-applied asphaltic mastic, compounded for 30-mil thickness per coat.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that wall surfaces and openings are ready to receive frames and are within tolerances specified in manufacturer's instructions.

### **3.02 PREPARATION**

- A. Perform cutting, fitting, forming, drilling, and grinding of frames as required for project conditions.
- B. Replace components with damage to exposed finishes.
- C. Separate dissimilar metals to prevent electrolytic action between metals.

### **3.03 INSTALLATION**

- A. Install doors and frames in accordance with manufacturer's instructions and approved shop drawings.
- B. Set frames plumb, square, level, and aligned to receive doors. Anchor frames to adjacent construction in strict accordance with manufacturer's recommendations and within specified tolerances.
- C. Where aluminum surfaces contact metals other than stainless steel, zinc, or small areas of white bronze, protect from direct contact by painting dissimilar metal with heavy coating of bituminous paint.
- D. Hang doors and adjust hardware to achieve specified clearances and proper door operation.
- E. Comply with glazing installation requirements of Section 08 8000.

### **3.04 FIELD QUALITY CONTROL**

- A. See Section 01 4000 - Quality Requirements, for independent field testing and inspection requirements, and requirements for monitoring quality of specified product installations.
- B. Provide field testing of installed aluminum doors by independent laboratory in accordance with AAMA 502 and AAMA/WDMA/CSA 101/I.S.2/A440 during construction process and before installation of interior finishes.
  - 1. Field test for water penetration in accordance with ASTM E1105 using Procedure B - cyclic static air pressure difference; test pressure shall not be less than 1.9 psf.
  - 2. Field test for air leakage in accordance with ASTM E783 with uniform static air pressure difference of 6.27 psf.
- C. Repair or replace fenestration components that have failed designated field testing, and retest to verify performance complies with specified requirements.

### **3.05 CLEANING**

- A. Upon completion of installation, thoroughly clean door and frame surfaces in accordance with AAMA 609 & 610.
- B. Do not use abrasive, caustic, or acid cleaning agents.

### **3.06 PROTECTION**

- A. Protect products of this section from damage caused by subsequent construction until Date of Substantial Completion.
- B. Replace damaged or defective components that cannot be repaired to a condition indistinguishable from undamaged components.

## **END OF SECTION**

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**SECTION 08 1213  
HOLLOW METAL FRAMES**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Non-fire-rated hollow metal frames for non-hollow metal doors.
- B. Fire-rated hollow metal frames for non-hollow metal doors.
- C. Interior glazed borrowed lite frames.

**1.02 RELATED REQUIREMENTS**

- A. Section 08 7100 - Door Hardware: Hardware, silencers, and weatherstripping.
- B. Section 08 8000 - Glazing: Glazed borrowed lites.

**1.03 REFERENCE STANDARDS**

- A. ADA Standards - Americans with Disabilities Act (ADA) Standards for Accessible Design 2010.
- B. ANSI/SDI A250.4 - Test Procedure and Acceptance Criteria for Physical Endurance for Steel Doors, Frames and Frame Anchors 2018.
- C. ANSI/SDI A250.8 - Specifications for Standard Steel Doors and Frames (SDI-100) 2017.
- D. ANSI/SDI A250.10 - Test Procedure and Acceptance Criteria for Prime Painted Steel Surfaces for Steel Doors and Frames 2020.
- E. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process 2020.
- F. ASTM A1008/A1008M - Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Required Hardness, Solution Hardened, and Bake Hardenable 2021a.
- G. ASTM A1011/A1011M - Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, and Ultra-High Strength 2018a.
- H. ASTM C143/C143M - Standard Test Method for Slump of Hydraulic-Cement Concrete 2020.
- I. ASTM C476 - Standard Specification for Grout for Masonry 2020.
- J. BHMA A156.115 - Hardware Preparation In Steel Doors And Steel Frames 2016.
- K. ICC A117.1 - Accessible and Usable Buildings and Facilities 2017.
- L. ITS (DIR) - Directory of Listed Products current edition.
- M. NAAMM HMMA 830 - Hardware Selection for Hollow Metal Doors and Frames 2002.
- N. NAAMM HMMA 831 - Hardware Locations for Hollow Metal Doors and Frames 2011.
- O. NAAMM HMMA 840 - Guide Specifications For Receipt, Storage and Installation of Hollow Metal Doors and Frames 2007.
- P. NFPA 80 - Standard for Fire Doors and Other Opening Protectives 2022.
- Q. UL (DIR) - Online Certifications Directory Current Edition.
- R. UL 10C - Standard for Positive Pressure Fire Tests of Door Assemblies Current Edition, Including All Revisions.

**1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Materials and details of design and construction, hardware locations, reinforcement type and locations, anchorage and fastening methods, and finishes; and one copy of referenced grade standard.
- C. Shop Drawings: Details of each opening, showing elevations, glazing, frame profiles, and identifying location of different finishes, if any.

- D. Manufacturer's Qualification Statement.
- E. Installer's Qualification Statement.

#### **1.05 QUALITY ASSURANCE**

- A. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience.

#### **1.06 DELIVERY, STORAGE, AND HANDLING**

- A. Store in accordance with applicable requirements and in compliance with standards and/or custom guidelines as indicated.

### **PART 2 PRODUCTS**

#### **2.01 MANUFACTURERS**

- A. Hollow Metal Frames with Integral Casings:
  - 1. Curries, an Assa Abloy Group company; [ ]: [www.assaabloydss.com/#sle](http://www.assaabloydss.com/#sle).
  - 2. Republic Doors, an Allegion brand; [ ]: [www.republicdoor.com/#sle](http://www.republicdoor.com/#sle).
  - 3. Steelcraft, an Allegion brand; [ ]: [www.allegion.com/#sle](http://www.allegion.com/#sle).

#### **2.02 PERFORMANCE REQUIREMENTS**

- A. Door Frame Type: Provide hollow metal door frames with integral casings.
  - 1. Interior Doors: Use frames with integral casings.
- B. Steel Sheet: Comply with one or more of the following requirements; galvanized steel complying with ASTM A653/A653M, cold-rolled steel complying with ASTM A1008/A1008M, or hot-rolled pickled and oiled (HRPO) steel complying with ASTM A1011/A1011M, commercial steel (CS) Type B, for each.
- C. Accessibility: Comply with ICC A117.1 and ADA Standards.
- D. Glazed Lights: Non-removable stops on non-secure side; sizes and configurations as indicated on drawings. Style: Manufacturers standard.
- E. Combined Requirements: If a particular door and frame unit is indicated to comply with more than one type of requirement, comply with the specified requirements for each type; for instance, an exterior frame that is also indicated as being sound-rated must comply with the requirements specified for exterior frames and for sound-rated frames; where two requirements conflict, comply with the most stringent.
- F. Hardware Preparations, Selections and Locations: Comply with BHMA A156.115, NAAMM HMMA 830, NAAMM HMMA 831 or ANSI/SDI A250.8 (SDI-100) in accordance with specified requirements.
- G. Provide mortar guard boxes for hardware cut-outs in frames to be installed in masonry or to be grouted.
- H. Mullions for Pairs of Doors: Removable type, with profile similar to jambs.
- I. Transom Bars: Fixed, of profile same as jamb and head.
- J. Frames for Interior Glazing or Borrowed Lites: Construction and face dimensions to match door frames, and as indicated on drawings.
- K. Frames in Masonry Walls: Size to suit masonry coursing with head member 4 inches high to fill opening without cutting masonry units.
- L. Frames Wider than 48 Inches: Reinforce with steel channel fitted tightly into head of frame, and flush with top.

#### **2.03 HOLLOW METAL DOOR FRAMES WITH INTEGRAL CASINGS**

- A. Frame Finish: Factory primed and field finished.
- B. Interior Door Frames, Non-Fire Rated: Slip-on type at gypsum board walls, and knock-down type at masonry walls.
  - 1. Based on SDI Standards: ANSI/SDI A250.8 (SDI-100).



- a. Level 2 - Heavy-duty.
  - b. Physical Performance Level B, 500,000 cycles; in accordance with ANSI/SDI A250.4.
  - c. Frame Metal Thickness: 16 gauge, 0.053 inch, minimum.
  - d. Zinc Coating: Manufacturer's standard coating thickness; ASTM A653/A653M.
- C. Fire-Rated Door Frames: Knock-down type.
  - 1. Based on SDI Standards: ANSI/SDI A250.8 (SDI-100).
    - a. Level 2 - Heavy-duty.
    - b. Physical Performance Level B, 500,000 cycles; in accordance with ANSI/SDI A250.4.
    - c. Frame Metal Thickness: 16 gauge, 0.053 inch, minimum.
    - d. Zinc Coating: Manufacturer's standard coating thickness; ASTM A653/A653M.
  - 2. Fire Rating: As indicated on Door and Frame Schedule, tested in accordance with UL 10C or NFPA 252 ("positive pressure fire tests").
  - 3. Provide units listed and labeled by ITS (DIR) or UL (DIR).
    - a. Attach fire rating label to each fire rated unit.

#### **2.04 FINISHES**

- A. Primer: Rust-inhibiting, complying with ANSI/SDI A250.10, door manufacturer's standard.
- B. Bituminous Coating: Cold-applied asphalt mastic, compounded for 15 mil, 0.015 inch dry film thickness (DFT) per coat; provide inert-type noncorrosive compound free of asbestos fibers, sulfur components, and other deleterious impurities.
  - 1. Fire-Rated Frames: Comply with fire rating requirements indicated.

#### **2.05 ACCESSORIES**

- A. Silencers: Resilient rubber, fitted into drilled hole; provide three on strike side of single door, three on center mullion of pairs, and two on head of pairs without center mullions.
- B. Grout for Frames: Mortar grout complying with ASTM C476 with maximum slump of 4 inches as measured in accordance with ASTM C143/C143M for hand troweling in place; plaster grout and thinner pumpable grout are prohibited.

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

- A. Verify existing conditions before starting work.
- B. Verify that opening sizes and tolerances are acceptable.
- C. Verify that finished walls are in plane to ensure proper door alignment.

#### **3.02 INSTALLATION**

- A. Install frames in accordance with manufacturer's instructions and related requirements of specified frame standards or custom guidelines indicated.
- B. Install fire rated units in accordance with NFPA 80.
- C. Coordinate frame anchor placement with wall construction.
- D. Grout frames in masonry construction, using hand trowel methods; brace frames so that pressure of grout before setting will not deform frames.
- E. Comply with glazing installation requirements of Section 08 8000.
- F. Install door hardware as specified in Section 08 7100.

#### **3.03 SCHEDULE**

- A. Refer to Door and Frame Schedule on the drawings.

### **END OF SECTION**

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**SECTION 08 1416  
FLUSH WOOD DOORS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Flush wood doors; flush configuration; fire-rated and non-rated.

**1.02 RELATED REQUIREMENTS**

- A. Section 06 2000 - Finish Carpentry: Wood door frames.
- B. Section 08 1213 - Hollow Metal Frames.
- C. Section 08 7100 - Door Hardware.
- D. Section 08 8000 - Glazing.
- E. Section 09 2116 - Gypsum Board Assemblies: Bullet-resistant sheathing and wallboard for bullet-resistant partitions and walls.

**1.03 REFERENCE STANDARDS**

- A. ASTM C1048 - Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass 2018.
- B. UL 10C - Standard for Positive Pressure Fire Tests of Door Assemblies Current Edition, Including All Revisions.
- C. WDMA I.S. 1A - Interior Architectural Wood Flush Doors 2013.

**1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Indicate door core materials and construction; veneer species, type and characteristics.
- C. Shop Drawings: Show doors and frames, elevations, sizes, types, swings, undercuts, beveling, blocking for hardware, factory machining, factory finishing, cutouts for glazing and other details.
- D. Manufacturer's Qualification Statement.
- E. Installer's Qualification Statement.
- F. Warranty, executed in Owner's name.

**1.05 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section, with not less than three years of documented experience.
  - 1. Company with at least one project within past five years with value of woodwork within at least 20 percent of cost of woodwork for this project.
  - 2. Accredited participant in the specified certification program prior to the commencement of fabrication and throughout the duration of the project.
- B. Installer Qualifications: Company specializing in performing work of the type specified in this section, with not less than three years of documented experience.

**1.06 DELIVERY, STORAGE, AND HANDLING**

- A. Package, deliver and store doors in accordance with specified quality standard.
- B. Accept doors on site in manufacturer's packaging, and inspect for damage.
- C. Protect doors with resilient packaging sealed with heat shrunk plastic; do not store in damp or wet areas or areas where sunlight might bleach veneer; seal top and bottom edges with tinted sealer if stored more than one week, and break seal on site to permit ventilation.

**1.07 WARRANTY**

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.
- B. Interior Doors: Provide manufacturer's warranty for the life of the installation.

- C. Include coverage for delamination of veneer, warping beyond specified installation tolerances, defective materials, and telegraphing core construction.

## **PART 2 PRODUCTS**

### **2.01 MANUFACTURERS**

- A. Wood Veneer Faced Doors:
  - 1. VT Industries, Inc: [www.vtindustries.com/#sle](http://www.vtindustries.com/#sle).

### **2.02 DOORS**

- A. Doors: See drawings for locations and additional requirements.
  - 1. Quality Standard: Custom Grade, Heavy Duty performance, in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), unless noted otherwise.
  - 2. Quality Standard: Custom Grade, Heavy Duty performance, in accordance with WDMA I.S. 1A.
  - 3. Wood Veneer Faced Doors: 5-ply unless otherwise indicated.
- B. Interior Doors: 1-3/4 inches thick unless otherwise indicated; flush construction.
  - 1. Provide solid core doors at each location.
  - 2. Fire Rated Doors: Tested to ratings indicated on drawings in accordance with UL 10C - Positive Pressure; Underwriters Laboratories Inc (UL) or Intertek/Warnock Hersey (WHI) labeled without any visible seals when door is open.

### **2.03 DOOR AND PANEL CORES**

- A. Non-Rated Solid Core and 20 Minute Rated Doors: Type structural composite lumber core (SCLC), plies and faces as indicated.
- B. Fire-Rated Doors: Mineral core type, with fire resistant composite core (FD), plies and faces as indicated above; with core blocking as required to provide adequate anchorage of hardware without through-bolting.

### **2.04 DOOR FACINGS**

- A. Veneer Facing for Transparent Finish: Natural birch, veneer grade in accordance with quality standard indicated, plain sliced (flat cut), with book match between leaves of veneer, running match of spliced veneer leaves assembled on door or panel face.

### **2.05 DOOR CONSTRUCTION**

- A. Fabricate doors in accordance with door quality standard specified.
- B. Cores Constructed with stiles and rails:
  - 1. Provide solid blocks at lock edge for hardware reinforcement.
  - 2. Provide solid blocking for other throughbolted hardware.
- C. Glazed Openings: Non-removable stops on non-secure side; sizes and configurations as indicated on drawings.
- D. Factory machine doors for hardware other than surface-mounted hardware, in accordance with hardware requirements and dimensions.
- E. Factory fit doors for frame opening dimensions identified on shop drawings, with edge clearances in accordance with specified quality standard.
- F. Provide edge clearances in accordance with the quality standard specified.

### **2.06 FINISHES - WOOD VENEER DOORS**

- A. Finish work in accordance with WDMA I.S. 1A for grade specified and as follows:
  - 1. Transparent:
    - a. System - TR-2, Catalyzed Lacquer.
    - b. Stain: As selected by Architect.
    - c. Sheen: Flat.
- B. Factory finish doors in accordance with approved sample.

## **2.07 ACCESSORIES**

- A. Hollow Metal Door Frames: See Section 08 1213.
- B. Glazed Openings:
  - 1. Heat-Strengthened and Fully Tempered Glass: ASTM C1048.
  - 2. Glazing: Single vision units, 1/4 inch thick glass.
  - 3. Tint: Clear.
- C. Glazing Stops: Wood, of same species as door facing, butted corners; prepared for countersink style tamper proof screws.
- D. Astragals and Edges for Double Doors: Pairs of doors astragals, and door edge sealing and protection devices.
  - 1. UL listed products in compliance with requirements of authorities having jurisdiction.
  - 2. Provide surface mounted astragal to cover or fill space for full door height between pair of doors or door and adjacent jamb.
  - 3. Edge Type: Beveled edge
  - 4. Material: Aluminum.
  - 5. Metal Finish: Dark Bronze powder coating.
- E. Astragals for Non-Rated Double Doors: Steel, T shaped, overlapping and recessed at face edge.
- F. Astragals for Fire-Rated Double Doors: Steel, T shaped, overlapping and recessed at face edge, specifically for double doors.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify existing conditions before starting work.
- B. Verify that opening sizes and tolerances are acceptable.
- C. Do not install doors in frame openings that are not plumb or are out-of-tolerance for size or alignment.

### **3.02 INSTALLATION**

- A. Install doors in accordance with manufacturer's instructions and specified quality standard.
- B. Factory-Finished Doors: Do not field cut or trim; if fit or clearance is not correct, replace door.
- C. Use machine tools to cut or drill for hardware.
- D. Coordinate installation of doors with installation of frames and hardware.
- E. Coordinate installation of glazing.

### **3.03 ADJUSTING**

- A. Adjust doors for smooth and balanced door movement.
- B. Adjust closers for full closure.

**END OF SECTION**

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**SECTION 08 3200  
SLIDING GLASS DOORS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Factory fabricated sliding glazed doors with frames and operating hardware.

**1.02 RELATED REQUIREMENTS**

- A. Section 05 5000 - Metal Fabrications: Steel lintels.
- B. Section 06 1000 - Rough Carpentry: Rough opening framing.
- C. Section 08 7100 - Door Hardware.

**1.03 REFERENCE STANDARDS**

- A. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum 2020.
- B. ASTM C1048 - Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass 2018.

**1.04 SUBMITTALS**

- A. See Section 01 3300 Administrative Requirements, for submittal procedures.
- B. Product Data: Provide component dimensions.
- C. Shop Drawings: Indicate opening dimensions, elevations of different types, and framed opening tolerances.
- D. Samples: Submit two samples, 12 by 12 inch in size illustrating typical sliding door panel corner construction, accessories, and finishes.
- E. Submit two samples of door hardware.
- F. Certificate: Certify that sliding glass doors meet or exceed specified requirements.
- G. Manufacturer's Installation Instructions: Include complete preparation, installation, and cleaning requirements.
- H. Warranty, executed in Owner's name.

**1.05 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than three years of documented experience.
- B. Installer Qualifications: Company specializing in performing work of type specified in this section, with at least three years of documented experience.

**1.06 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver products to project site and store in manufacturer's protective cartons until openings are ready for door installation.
- B. Protect finished surfaces with wrapping paper or strippable coating during installation. Do not use adhesive papers or sprayed coatings that bond to substrate when exposed to sunlight or weather.

**1.07 FIELD CONDITIONS**

- A. Maintain this minimum temperature during and 24 hours after installation of sealants.

**1.08 WARRANTY**

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.

**PART 2 PRODUCTS**

**2.01 MANUFACTURERS**

- A. Aluminum Sliding Doors:
  - 1. Basis of Design: the Sliding Door Company, Inc.; [www.slidingdoorco.com/#sle](http://www.slidingdoorco.com/#sle).

2. Substitutions: See Section 01 6000 - Product Requirements.

## **2.02 SLIDING GLASS DOORS**

- A. Interior Sliding Door Systems: Aluminum cased frame with receiving channel, adjustable top track assembly along with carriage assemblies; provide frames with integral double seal full gasketing; provide factory prepped locks and other related components in frame system.
  1. Configuration: As indicated on drawings. Surface mounted.
  2. Bottom Track:
    - a. Aluminum 6063 extrusions, 0.057 inch minimum metal thickness, 0.325 inch high, barrier-free per ADA.
    - b. Channels: Interlocking tracks with number of channels required for door operation indicated- sliding by-pass doors.
  3. Finish: Natural anodized.
  4. Color: As selected by Architect from manufacturer's standard colors.
  5. Doors: Aluminum and Glass Sliding Panels
    - a. Stiles and Rails:
      - 1) 3 inch wide, 0.051 inch minimum thickness.
    - b. Mullions:
      - 1) Built-in Mullions- 1.5" wide.
  6. Glass Category II Safety Glazing per CPSC 16 CFR 1201.
    - a. Monolithic clear Tempered Glass: 5mm thick, ASTM C1048, Kind FT.
    - b. Glazing pattern- Smoked- Milky.
  7. Operable Panels: Adjustable, with stainless steel bottom rollers.
  8. Weight Rating: Door carriage assembly rated for 220 pounds or greater.
  9. Hardware:
    - a. Standard Handle Brushed Silver- Aluminum.
    - b. Locks and Latches: Lockitron bolt for sliders..
    - c. Provide (2) keys per lockset- keyed alike- to match other doors entering the STEAM room.
- B. Construction: Factory assemble door frame as one unit, including head jambs, and sill; factory assemble operating and fixed panels.
  1. Sizes: Allow for tolerances of rough framed openings, clearances, and shims around perimeter of assemblies.
  2. Joints and Connections: Flush, hairline width, and waterproof; accurately and rigidly joined corners.
  3. Sills: One piece, sloped to drain, with integral roller track.

## **2.03 COMPONENTS**

### **2.04 ASSEMBLY**

- A. Factory assemble door frame as one unit, including head, jambs, and sill; factory assemble operating and fixed panels.
- B. Sizes: Allow for tolerances of rough framed openings, clearances, and shims around perimeter of assemblies.

### **2.05 ACCESSORIES**

- A. Limit Stops: Resilient rubber.
- B. Silicone Adhesive- clear, construction grade.
- C. Fasteners as indicated in shop drawings.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that openings are ready to receive work and opening dimensions and clearances are as indicated on shop drawings.



### **3.02 PREPARATION**

- A. Prepare opening to permit correct installation of door unit.

### **3.03 INSTALLATION**

- A. Install sliding glass door units in accordance with manufacturer's instructions.
- B. Attach frame and shims to perimeter opening to accommodate construction tolerances and other irregularities.
- C. Use anchorage devices to securely fasten sliding door assembly to wall construction without distortion or imposed stresses.
- D. Install operating hardware.
- E. Finish interior surfaces with transparent materials as specified in Section 09 9123.

### **3.04 TOLERANCES**

- A. Maintain dimensional tolerances and alignment with adjacent work.
- B. Maximum Variation from Plumb: 1/16 inch.
- C. Maximum Variation from Level: 1/16 inch.
- D. Longitudinal or Diagonal Warp: Plus or minus 1/8 inch from 10 feet straight edge.

### **3.05 ADJUSTING**

- A. Adjust hardware for smooth operation.

### **3.06 CLEANING**

- A. Remove protective material from factory finished surfaces.
- B. Remove labels and visible markings.
- C. Wash surfaces by method recommended and acceptable to sealant and sliding glass door manufacturer; rinse and wipe surfaces clean.

### **3.07 PROTECTION**

- A. Protect installed products from damage until Date of Substantial Completion.

**END OF SECTION**

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**SECTION 08 3313  
COILING COUNTER DOORS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Non-fire-rated coiling counter doors and operating hardware.
- B. Electric motor operation; wiring from electric circuit disconnect to operator to control station.

**1.02 RELATED REQUIREMENTS**

- A. Section 07 9200 - Joint Sealants: Sealing joints between frames and adjacent construction.
- B. Section 26 0533.13 - Conduit for Electrical Systems: Conduit from electric circuit to operator and from operator to control station.
- C. Section 26 0583 - Wiring Connections: Power to disconnect.

**1.03 REFERENCE STANDARDS**

- A. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes 2021.
- B. ITS (DIR) - Directory of Listed Products current edition.
- C. NEMA MG 1 - Motors and Generators 2018.
- D. NFPA 80 - Standard for Fire Doors and Other Opening Protectives 2022.
- E. UL (DIR) - Online Certifications Directory Current Edition.

**1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Submit manufacturer's standard literature showing materials and details of construction and finish. Include data on electrical operation.
- C. Shop Drawings: Indicate rough and actual opening dimensions, anchorage methods, hardware locations, and installation details.
- D. Project Record Documents: Include as-built electrical diagrams for electrical operation and connection to fire alarm system.

**1.05 QUALITY ASSURANCE**

- A. Products Requiring Electrical Connection: Listed and classified by UL (DIR) as suitable for the purpose specified and indicated.

**PART 2 PRODUCTS**

**2.01 MANUFACTURERS**

- A. Coiling Counter Doors:
  - 1. Alpine Overhead Doors, Inc; Counter Shutter (Aluminum): [www.alpinedoors.com/#sle](http://www.alpinedoors.com/#sle).
  - 2. C.H.I. Overhead Doors; Model 6544 (aluminum): [www.chiohd.com/#sle](http://www.chiohd.com/#sle).

**2.02 COILING COUNTER DOORS**

- A. Coiling Counter Doors, Non-Fire-Rated: Aluminum slat curtain.
  - 1. Mounting: Between jambs, within prepared opening.
  - 2. Provide integral frame and sill of same material and finish.
  - 3. Nominal Slat Size: 1-1/4 inches wide.
  - 4. Slat Profile: Flat, perforated.
  - 5. Finish, Aluminum: Anodized.
  - 6. Color: As selected by Architect from manufacturer's standard range.
  - 7. Guides: Formed track; same material and finish unless otherwise indicated.
  - 8. Hood Enclosure: Manufacturer's standard; aluminum.
  - 9. Electric operation.

## **2.03 MATERIALS**

- A. Curtain Construction: Interlocking, single thickness slats.
  - 1. Slat Ends: Alternate slats fitted with end locks to act as wearing surface in guides and to prevent lateral movement.
  - 2. Curtain Bottom: Fitted with angles to provide reinforcement and positive contact in closed position.
  - 3. Aluminum Slats: ASTM B221 (ASTM B221M), aluminum alloy Type 6063; minimum thickness 0.05 inch.
- B. Guide Construction: Continuous, of profile to retain door in place, with mounting brackets of same metal.
  - 1. Aluminum Guides: Extruded aluminum channel, with wool pile runners along inside.
- C. Hood Enclosure: Internally reinforced to maintain rigidity and shape.
- D. Lock Hardware:
  - 1. For motor operated units, additional lock or latching mechanisms are not required.
  - 2. Slide Bolt: Provide on single-jamb side, extending into slot in guides, with padlock on one side.
- E. Roller Shaft Counterbalance: Steel pipe and torsion steel spring system, capable of producing torque sufficient to ensure smooth operation of curtain from any position and capable of holding position at mid-travel; with adjustable spring tension; requiring 25 lb nominal force to operate.

## **2.04 ELECTRIC OPERATION**

- A. Operator, Controls, Actuators, and Safeties: Listed and classified by ITS (DIR), UL (DIR), or testing agency acceptable to authorities having jurisdiction (AHJ) as suitable for purpose specified and indicated.
  - 1. Provide interlock switches on motor operated units.
- B. Electric Operators:
  - 1. Mounting: Side mounted.
  - 2. Motor Enclosure: NEMA MG 1.
  - 3. Motor Rating: As recommended by manufacturer; continuous duty.
  - 4. Motor Voltage: 110-120 VAC, single phase, 60 Hz.
  - 5. Opening Speed: 6 inches per second.
  - 6. Manual override in case of power failure.
- C. Control Station: Standard three button (OPEN-STOP-CLOSE) momentary control for each electrical operator.
  - 1. Controls: 24 VAC circuit.
  - 2. Surface mounted.
- D. Safety Edge: Located at bottom of curtain, full width, electro-mechanical sensitized type, wired to stop operator upon striking object, hollow neoprene covered.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that opening sizes, tolerances and conditions are acceptable.

### **3.02 INSTALLATION**

- A. Install units in accordance with manufacturer's instructions.
- B. Use anchorage devices to securely fasten assembly to wall construction and building framing without distortion or stress.
- C. Securely and rigidly brace components suspended from structure. Secure guides to structural members only.
- D. Fit and align assembly including hardware; level and plumb, to provide smooth operation.
- E. Coordinate installation of electrical service with Section 26 0583.

- F. Complete wiring from disconnect to unit components.
- G. Install perimeter trim as indicated.

### **3.03 TOLERANCES**

- A. Maintain dimensional tolerances and alignment with adjacent work.
- B. Maximum Variation From Plumb: 1/16 inch.
- C. Maximum Variation From Level: 1/16 inch.
- D. Longitudinal or Diagonal Warp: Plus or minus 1/8 inch per 10 ft straight edge.

### **3.04 ADJUSTING**

- A. Adjust operating assemblies for smooth and noiseless operation.

### **3.05 CLEANING**

- A. Clean installed components.
- B. Remove labels and visible markings.

**END OF SECTION**

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**SECTION 08 3323  
OVERHEAD COILING DOORS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Interior non-fire-rated coiling doors.
- B. Fire-rated coiling doors.
- C. Electric operators and control stations.
- D. Wiring from electric circuit disconnect to operators and control stations.

**1.02 RELATED REQUIREMENTS**

- A. Section 07 9200 - Joint Sealants: Sealing joints between frames and adjacent construction.
- B. Section 26 0533.13 - Conduit for Electrical Systems: Conduit from electric circuit to operator and from operator to control station.
- C. Section 26 0583 - Wiring Connections: Power to disconnect.

**1.03 REFERENCE STANDARDS**

- A. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process 2020.
- B. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar 2015.
- C. ITS (DIR) - Directory of Listed Products current edition.
- D. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum) 2020.
- E. NEMA ICS 2 - Industrial Control and Systems Controllers, Contactors and Overload Relays Rated 600 Volts 2008 (Reaffirmed 2020).
- F. NEMA MG 1 - Motors and Generators 2018.
- G. NFPA 80 - Standard for Fire Doors and Other Opening Protectives 2022.
- H. NFPA 105 - Standard for Smoke Door Assemblies and Other Opening Protectives 2022.
- I. UL (DIR) - Online Certifications Directory Current Edition.
- J. UL 325 - Standard for Door, Drapery, Gate, Louver, and Window Operators and Systems Current Edition, Including All Revisions.
- K. UL 1784 - Standard for Air Leakage Tests of Door Assemblies Current Edition, Including All Revisions.

**1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide general construction, electrical equipment, and component connections and details.
- C. Shop Drawings: Indicate pertinent dimensioning, anchorage methods, hardware locations, and installation details.
- D. Warranty Documentation: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

**1.05 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of documented experience.
- B. Installer Qualifications: Company specializing in performing work of type specified and with at least three years documented experience.
- C. Products Requiring Electrical Connection: Listed and classified by ITS (DIR), UL (DIR), or testing firm acceptable to authorities having jurisdiction as suitable for purpose specified.

## **1.06 WARRANTY**

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.
- B. Manufacturer Warranty: Provide five-year manufacturer warranty for three-ply multifilament polyester fabric curtain. Complete forms in Owner's name and register with manufacturer.

## **PART 2 PRODUCTS**

### **2.01 MANUFACTURERS**

- A. Overhead Coiling Doors:
  - 1. Alpine Overhead Doors, Inc; Coiling Door: [www.alpinedoors.com/#sle](http://www.alpinedoors.com/#sle).
  - 2. C.H.I. Overhead Doors; Model 6180: [www.chiohd.com/#sle](http://www.chiohd.com/#sle).

### **2.02 COILING DOORS**

- A. Fire-Rated Coiling Doors: Steel slat curtain; comply with NFPA 80.
  - 1. 3/4-hour fire rating.
    - a. Provide smoke and draft control door assemblies tested in accordance with UL 1784.
  - 2. Provide products listed and labeled by ITS (DIR) or UL (DIR) as suitable for purpose specified and indicated on drawings.
  - 3. Oversized Openings: Provide certificate of compliance from authorities having jurisdiction indicating approval of fire rated units and operating hardware assembly.
  - 4. Nominal Slat Size: 2 inches wide by required length.
  - 5. Finish: Anodized color as selected.
  - 6. Guides, Formed Sheet Metal: Stainless steel.
  - 7. Hood Enclosure: Manufacturer's standard; primed steel.
  - 8. Coiling Door Release Mechanism: Fire alarm system activated with automatically governed closing speed.
  - 9. Electric operation.
  - 10. Locking Devices: Slide bolt on inside.

### **2.03 MATERIALS AND COMPONENTS**

- A. Metal Curtain Construction: Interlocking slats.
  - 1. Curtain Bottom for Slat Curtains: Fitted with angles to provide reinforcement and positive contact in closed position.
  - 2. Smoke Seals: Provide brush or gasket type weatherstripping seals to prevent passage of smoke and hot gases in compliance with UL 1784 testing requirements.
- B. Guide Construction: Continuous, of profile to retain door in place with snap-on trim, mounting brackets of same metal.
- C. Guides - Sheet Metal: Formed from sheet metal, thick; wide.
  - 1. Stainless Steel: ASTM A 666, Type 304, rollable temper.
- D. Hood Enclosure and Trim: Internally reinforced to maintain rigidity and shape.
- E. Lock Hardware:
  - 1. For motor operated units, additional lock or latching mechanisms are not required.
  - 2. Slide Bolt: Provide on single-jamb side, extending into slot in guides.
- F. Roller Shaft Counterbalance: Steel pipe and helical steel spring system, capable of producing torque sufficient to ensure smooth operation of curtain from any position and capable of holding position at mid-travel; with adjustable spring tension; requiring 25 lb nominal force to operate.

### **2.04 ELECTRIC OPERATION**

- A. Operator, Controls, Actuators, and Safeties: Comply with UL 325; provide products listed by ITS (DIR), UL (DIR), or testing agency acceptable to authorities having jurisdiction.
  - 1. Provide interlock switches on motor operated units.
  - 2. Provide tamperproof operation cycle counter.
- B. Electric Operators:
  - 1. Mounting: Side mounted.



2. Motor Enclosure:
    - a. Interior Coiling Doors: NEMA MG 1, Type 1; open drip proof.
  3. Motor Rating: 1/3 HP; continuous duty.
  4. Motor Voltage: 120 volts, single phase, 60 Hz.
  5. Motor Controller: NEMA ICS 2, full voltage, reversing magnetic motor starter.
  6. Controller Enclosure: NEMA 250, Type 4.
  7. Opening Speed: 12 inches per second.
  8. Brake: Manufacturer's standard type, activated by motor controller.
  9. Manual override in case of power failure.
  10. See Section 26 0583 for electrical connections.
- C. Control Station: Provide standard three button, 'Open-Close-Stop' momentary-contact control device for each operator complying with UL 325.
1. 24 volt circuit.
  2. Surface mounted, at interior door jamb.
  3. Entrapment Protection Devices: Provide sensing devices and safety mechanisms complying with UL 325.
    - a. Primary Device: Provide electric sensing edge, wireless sensing, NEMA 1 photo eye sensors, or NEMA 4X photo eye sensors as required with momentary-contact control device.
- D. Safety Edge: Located at bottom of coiling door, full width, electro-mechanical sensitized type, wired to stop and reverse door direction upon striking object, hollow neoprene covered.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that opening sizes, tolerances and conditions are acceptable.

### **3.02 INSTALLATION**

- A. Install units in accordance with manufacturer's instructions.
- B. Install fire-rated doors in accordance with NFPA 80.
- C. Install smoke door assemblies in accordance with NFPA 105.
- D. Use anchorage devices to securely fasten assembly to wall construction and building framing without distortion or stress.
- E. Securely and rigidly brace components suspended from structure. Secure guides to structural members only.
- F. Fit and align assembly including hardware; level and plumb, to provide smooth operation.
- G. Coordinate installation of electrical service with Section 26 0583.
- H. Complete wiring from disconnect to unit components.
- I. Complete wiring from fire alarm system.
- J. Install enclosure and perimeter trim.

### **3.03 ADJUSTING**

- A. Adjust operating assemblies for smooth and noiseless operation.

### **3.04 CLEANING**

- A. Clean installed components.
- B. Remove labels and visible markings.

## **END OF SECTION**

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**SECTION 08 3327  
SMOKE AND FIRE CURTAINS**

**PART 1 PRODUCTS**

**1.01 SECTION INCLUDES**

- A. Automatic Fire Curtains.

**1.02 REFERENCES**

- A. Underwriters Laboratories (UL):
  - 1. UL 10D - Standard for Fire Tests of Fire Protective Curtain Assemblies.

**1.03 SUBMITTALS**

- A. Submit under provisions of Section 01300.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
  - 1. Test reports.
  - 2. Preparation instructions and recommendations.
  - 3. Storage and handling requirements and recommendations.
  - 4. Installation methods:
    - a. Instructions for install and wiring.
- C. Shop Drawings: Include system components and relevant options.

**1.04 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Minimum 5 years experience manufacturing similar equipment.

**1.05 DELIVERY, STORAGE, AND HANDLING**

- A. Store products indoors in secure locker manufacturer's unopened packaging. Minimize movement until ready for installation. Delicate aluminum and electronic components can be damaged easily and should be handled with extreme care.

**1.06 PROJECT CONDITIONS**

- A. Product intended for indoor use. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's recommended limits.

**1.07 WARRANTY**

- A. Manufacturer's standard limited warranty.

**PART 2 PRODUCTS**

**2.01 MANUFACTURERS**

- A. Acceptable Manufacturer: Colt International GmbH, distributed by Fire Curtain Technologies; Canandaigua, NY 14424; Tel: 585-412-2179; Email: [info@firecurtaintech.com](mailto:info@firecurtaintech.com), [www.firecurtaintechnologies.com](http://www.firecurtaintechnologies.com)
- B. Substitutions: Not permitted.

**2.02 AUTOMATIC FIRE CURTAINS**

- A. Basis of Design: FA Automatic Fire Curtains by the Colt Group, and distributed by Fire Curtain Technologies.
  - 1. Electrically operated automatic fire curtain, seals off an area on fire, preventing fire from spreading. The curtain gravity falls in controlled manner to predetermined level when fire is detected or on loss of power. Curtain drops to floor from ceiling for fire containment.
  - 2. Performance Characteristics:
    - a. Tested and in compliance with UL 10D for one and three hour ratings.
    - b. Successful continuous performance test of 10,000 cycles
  - 3. Dimensions and Size Range: Provide size suitable for project requirements; refer to the Drawings.
  - 4. Curtain Type:

- a. Single Unit (type SI).
    - 1) Width: Up to 177 in (4500mm)
    - 2) Drop: Up to 236 in (6000mm).
- 5. Bottom Bar Type: ID bottom bar (fabric loop).
- 6. Bottom Bar Type: U bottom bar (aluminum profile).
- 7. Bottom Bar Type: UK bottom bar (aluminum profile).
- 8. Fire Rating Options, a, b.
  - a. Fire Rating: 1 hour, UL 10D.
  - b. Fire Rating: 3 hours, UL 10D.
- 9. Control Type: Control panel with integrated microprocessor designed to operate automatic smoke- or fire curtains in a safe and correct manner. The control panel shall be prepared for connection to a fire alarm system and designed to enable the implementation of additional operational functions. Options a, b, c, d.
  - a. Power supply for 24V DC output for direct connection to the fire alarm system.
  - b. Control panel can be wired to allow multiple curtains to operate as an integrated part of a smoke control and fire management system.
  - c. In event of power failure, an uninterruptible power supply (UPS) may be supplied and connected so that the curtain remains retracted for a predetermined period (nominally 30 minutes). If signaled to descend during this time, the smoke curtain shall drop in a controlled manner to its fire operational position in a fail-safe manner.
  - d. A key switch for manual operation can be connected to an uninterruptible power supply to maintain the curtains in their raised positions in the event of a main power outage.
- 10. Fabrication:
  - a. Fabricate frames to fit in openings of sizes indicated, with allowances made for fabrication and installation tolerances, adjoining material tolerances, and perimeter sealant joints. Assemble units in factory to minimize field splicing and assembly.
  - b. Disassemble units as necessary for shipping and handling limitations.
  - c. Clearly mark units for reassembly and coordinated installation.
  - d. Include anchors and accessories required for complete assembly.

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

- A. Do not begin installation until substrates and openings have been properly prepared.
- B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

#### **3.02 PREPARATION**

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

#### **3.03 INSTALLATION**

- A. Install in accordance with manufacturer's instructions. Test for proper operation.

#### **3.04 PROTECTION**

- A. After installation, clean as recommended by the manufacturer.
- B. Remove and legally dispose of construction debris from project site.
- C. Protect installed products until completion of project.
- D. Touch-up, repair or replace damaged products before Substantial Completion.

### **END OF SECTION**

**SECTION 08 4313  
ALUMINUM-FRAMED STOREFRONTS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Aluminum-framed storefront, with vision glass.
- B. Aluminum doors and frames.
- C. Weatherstripping.

**1.02 RELATED REQUIREMENTS**

- A. Section 08 7100 - Door Hardware: Hardware items other than specified in this section.

**1.03 REFERENCE STANDARDS**

- A. AAMA CW-10 - Care and Handling of Architectural Aluminum from Shop to Site 2015.
- B. AAMA 609 & 610 - Cleaning and Maintenance Guide for Architecturally Finished Aluminum (Combined Document) 2015.
- C. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum 2020.
- D. ASCE 7 - Minimum Design Loads and Associated Criteria for Buildings and Other Structures Most Recent Edition Cited by Referring Code or Reference Standard.
- E. ASTM B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate 2014.
- F. ASTM B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate (Metric) 2014.
- G. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes 2021.
- H. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric) 2021.
- I. ASTM E283/E283M - Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Skylights, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen 2019.
- J. ASTM E330/E330M - Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference 2014 (Reapproved 2021).

**1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide component dimensions, describe components within assembly, anchorage and fasteners, glass and infill, door hardware, and internal drainage details.
- C. Shop Drawings: Indicate system dimensions, framed opening requirements and tolerances, affected related work, expansion and contraction joint location and details, and field welding required.
- D. Manufacturer's Certificate: Certify that the products supplied meet or exceed the specified requirements.
- E. Hardware Schedule: Complete itemization of each item of hardware to be provided for each door, cross-referenced to door identification numbers in Contract Documents.
- F. Manufacturer's Qualification Statement.
- G. Installer's Qualification Statement.
- H. Warranty: Submit manufacturer warranty and ensure forms have been completed in Owner's name and registered with manufacturer.

## **1.05 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Company specializing in performing work of type specified and with at least Five years of documented experience.
  - 1. Provide certified glass products through ANSI accredited certifications that include plant audits and independent laboratory performance testing.
    - a. Insulating Glass Certification Council (IGCC).
- B. Installer Qualifications: Company specializing in performing work of type specified and with at least Five years of documented experience.

## **1.06 DELIVERY, STORAGE, AND HANDLING**

- A. Handle products of this section in accordance with AAMA CW-10.
- B. Protect finished aluminum surfaces with wrapping. Do not use adhesive papers or sprayed coatings that bond to aluminum when exposed to sunlight or weather.

## **1.07 FIELD CONDITIONS**

- A. Do not install sealants when ambient temperature is less than 40 degrees F. Maintain this minimum temperature during and 48 hours after installation.

## **1.08 WARRANTY**

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.
- B. Correct defective Work within a five year period after Date of Substantial Completion.

## **PART 2 PRODUCTS**

### **2.01 MANUFACTURERS**

- A. Basis of Design: Kawneer North America; 500 Series Swing Door, Wide Style.

### **2.02 BASIS OF DESIGN -- FRAMING FOR INSULATING GLAZING**

- A. Center-Set Style, Wind-Borne-Debris Resistance Tested:
  - 1. Basis of Design: Kawneer North America; Thermally Broken Entrance Framing - Kawneer IsoLock Thermal Break.
  - 2. Vertical Mullion Dimensions: 2 inches wide by 4-1/2 inches deep.

### **2.03 BASIS OF DESIGN -- SWINGING DOORS**

- A. Wide Stile, Insulating Glazing, Thermally-Broken:
  - 1. Basis of Design: Kawneer - 500 Series Wide Style.
- B. Other Manufacturers: Provide either the product identified as "Basis of Design" or an equivalent product of another manufacturer.
- C. Substitutions: See Section 01 6000 - Product Requirements.
  - 1. For any product not identified as "Basis of Design", submit information as specified for substitutions.

### **2.04 ALUMINUM-FRAMED STOREFRONT**

- A. Aluminum-Framed Storefront: Factory fabricated, factory finished aluminum framing members with infill, and related flashings, anchorage and attachment devices.
  - 1. Unitized, shop assembly.
  - 2. Finish: Class I color anodized.
    - a. Factory finish all surfaces that will be exposed in completed assemblies.
  - 3. Finish Color: As selected by Architect from manufacturer's standard line.
  - 4. Fabrication: Joints and corners flush, hairline, and weatherproof, accurately fitted and secured; prepared to receive anchors and hardware; fasteners and attachments concealed from view; reinforced as required for imposed loads.
  - 5. Construction: Eliminate noises caused by wind and thermal movement, prevent vibration harmonics, and prevent "stack effect" in internal spaces.
  - 6. System Internal Drainage: Drain to the exterior by means of a weep drainage network any water entering joints, condensation occurring in glazing channel, and migrating moisture

- occurring within system.
7. Expansion/Contraction: Provide for expansion and contraction within system components caused by cycling temperature range of 170 degrees F over a 12 hour period without causing detrimental effect to system components, anchorages, and other building elements.
  8. Movement: Allow for movement between storefront and adjacent construction, without damage to components or deterioration of seals.
  9. Perimeter Clearance: Minimize space between framing members and adjacent construction while allowing expected movement.
- B. Performance Requirements
1. Wind Loads: Design and size components to withstand the specified load requirements without damage or permanent set, when tested in accordance with ASTM E330/E330M, using loads 1.5 times the design wind loads and 10 second duration of maximum load.
    - a. Design Wind Loads: Comply with requirements of ASCE 7.
    - b. Member Deflection: Limit member deflection to 1/175 in any direction, with full recovery of glazing materials.
  2. Air Leakage: 0.06 cfm/sq ft maximum leakage of storefront wall area when tested in accordance with ASTM E283/E283M at 1.57 psf pressure difference.

## **2.05 COMPONENTS**

- A. Aluminum Framing Members: Tubular aluminum sections, thermally broken with interior section insulated from exterior, drainage holes and internal weep drainage system.
1. Glazing Stops: Flush.
  2. Cross-Section: As indicated on drawings.
- B. Glazing: As specified in Section 08 8000.
- C. Applied Muntins: Prefabricated simulated divided lite grid assembly with perimeter surround; designed to be adhered and fastened to storefront framing members and glazing.
1. Material: Extruded aluminum.
  2. Profile: Manufacturer's standard, as detailed on drawings.
  3. Finish: Same as storefront.
- D. Swing Doors: Glazed aluminum.
1. Thickness: 1-3/4 inches.
  2. Top Rail: 5 inches wide.
  3. Vertical Stiles: 5 inches wide.
  4. Bottom Rail: 6-1/2 inches wide.
  5. Glazing Stops: Square.
  6. Finish: Same as storefront.

## **2.06 MATERIALS**

- A. Extruded Aluminum: ASTM B221 (ASTM B221M).
- B. Sheet Aluminum: ASTM B209 (ASTM B209M).
- C. Fasteners: Stainless steel.
- D. Glazing Gaskets: Type to suit application to achieve weather, moisture, and air infiltration requirements.
- E. Glazing Accessories: As specified in Section 08 8000.

## **2.07 FINISHES**

- A. Class I Natural Anodized Finish: AAMA 611 AA-M12C22A41 Clear anodic coating not less than 0.7 mils thick.
- B. Class I Color Anodized Finish: AAMA 611 AA-M12C22A44 Electrolytically deposited colored anodic coating not less than 0.7 mils thick.
- C. Color: As selected by Architect from manufacturer's standard range.
- D. Touch-Up Materials: As recommended by coating manufacturer for field application.

## **2.08 HARDWARE**

- A. For each door, include weatherstripping, sill sweep strip, and threshold.
- B. Other Door Hardware: As specified in Section 08 7100.
- C. Other Door Hardware: Storefront manufacturer's standard type to suit application.
  - 1. Finish on Hand-Contacted Items: Polished chrome.
  - 2. For each door, include butt hinges, pivots, push handle, pull handle, exit device, narrow stile handle latch, and closer.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify dimensions, tolerances, and method of attachment with other work.

### **3.02 INSTALLATION**

- A. Install wall system in accordance with manufacturer's instructions.
- B. Attach to structure to permit sufficient adjustment to accommodate construction tolerances and other irregularities.
- C. Provide alignment attachments and shims to permanently fasten system to building structure.
- D. Align assembly plumb and level, free of warp or twist. Maintain assembly dimensional tolerances, aligning with adjacent work.
- E. Provide thermal isolation where components penetrate or disrupt building insulation.
- F. Install sill flashings. Turn up ends and edges; seal to adjacent work to form water tight dam.
- G. Where fasteners penetrate sill flashings, make watertight by seating and sealing fastener heads to sill flashing.
- H. Pack fibrous insulation in shim spaces at perimeter of assembly to maintain continuity of thermal barrier.
- I. Set thresholds in bed of sealant and secure.
- J. Install hardware using templates provided.
  - 1. See Section 08 7100 for hardware installation requirements.
- K. Install applied muntin grid assembly in accordance with manufacturer's instructions.
- L. Touch-up minor damage to factory applied finish; replace components that cannot be satisfactorily repaired.

### **3.03 FIELD QUALITY CONTROL**

- A. See Section 01 4000 - Quality Requirements, for general testing and inspection requirements.

### **3.04 ADJUSTING**

- A. Adjust operating hardware and sash for smooth operation.

### **3.05 CLEANING**

- A. Remove protective material from pre-finished aluminum surfaces.
- B. Wash down surfaces with a solution of mild detergent in warm water, applied with soft, clean wiping cloths, and take care to remove dirt from corners and to wipe surfaces clean.
- C. Upon completion of installation, thoroughly clean aluminum surfaces in accordance with AAMA 609 & 610.

### **3.06 PROTECTION**

- A. Protect installed products from damage until Date of Substantial Completion.

## **END OF SECTION**



**SECTION 08 4523**  
**FIBERGLASS-SANDWICH-PANEL ASSEMBLIES - KALWALL**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Fiberglass reinforced plastic (FRP) sandwich panel system and accessories.
  - 1. Wall panel system.

**1.02 RELATED REQUIREMENTS**

- A. Section 07 2500 - Weather Barriers: Sealing perimeter frame to weather barrier installed on adjacent construction.
- B. Section 07 9200 - Joint Sealants: Sealing joints between perimeter frame and adjacent construction.

**1.03 REFERENCE STANDARDS**

- A. AAMA 1503 - Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors and Glazed Wall Sections 2009.
- B. ASTM C297/C297M - Standard Test Method for Flatwise Tensile Strength of Sandwich Constructions 2016.
- C. ASTM D635 - Standard Test Method for Rate of Burning and/or Extent and Time of Burning of Plastics in a Horizontal Position 2018.
- D. ASTM D1002 - Standard Test Method for Apparent Shear Strength of Single-Lap-Joint Adhesively Bonded Metal Specimens by Tension Loading (Metal-to-Metal) 2010 (Reapproved 2019).
- E. ASTM D1037 - Standard Test Methods for Evaluating Properties of Wood-Base Fiber and Particle Panel Materials 2012 (Reapproved 2020).
- F. ASTM D2244 - Standard Practice for Calculation of Color Tolerances and Color Differences from Instrumentally Measured Color Coordinates 2021.
- G. ASTM E72 - Standard Test Methods of Conducting Strength Tests of Panels for Building Construction 2015.
- H. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2021a.
- I. ASTM E283/E283M - Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Skylights, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen 2019.
- J. ASTM E330/E330M - Standard Test Method for Structural Performance of Exterior Windows, Doors, Skylights and Curtain Walls by Uniform Static Air Pressure Difference 2014 (Reapproved 2021).
- K. ASTM E331 - Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference 2000 (Reapproved 2016).
- L. ASTM E972 - Standard Test Method for Solar Photometric Transmittance of Sheet Materials Using Sunlight 1996 (Reapproved 2021).
- M. ASTM E2707 - Standard Test Method for Determining Fire Penetration of Exterior Wall Assemblies Using a Direct Flame Impingement Exposure 2015.
- N. ICC-ES AC05 - Acceptance Criteria for Sandwich Panel Adhesives 2009, with Editorial Revision (2015).
- O. ICC-ES AC177 - Acceptance Criteria for Translucent Fiberglass Reinforced Plastic (FRP) Faced Panel Wall, Roof and Skylight Systems 2014, with Editorial Revision (2018).
- P. ISO/IEC 17065 - Conformity Assessment - Requirements for Bodies Certifying Products, Processes and Services 2012.

- Q. NFRC 100 - Procedure for Determining Fenestration Product U-factors 2020.
- R. NFRC 201 - Procedure for Interim Standard Test Method for Measuring the Solar Heat Gain Coefficient of Fenestration Systems Using Calorimetry Hot Box Methods Current Edition.
- S. NFRC 202 - Procedure for Determining Translucent Fenestration Product Visible Transmittance at Normal Incidence Current Edition.
- T. UL 723 - Standard for Test for Surface Burning Characteristics of Building Materials Current Edition, Including All Revisions.
- U. UL 972 - Standard for Burglary Resisting Glazing Material Current Edition, Including All Revisions.

#### **1.04 SUBMITTALS**

- A. Product Data: Include construction details, material descriptions, profiles, span analysis data, and component finishes.
- B. Shop Drawings: Include plans, elevations, and details.
- C. Samples:
- D. Test Reports: Include the following product test reports from qualified independent testing agency indicating that each type and class of panel system complies with performance requirements indicated, based on comprehensive testing of these products. Reports completed for previous projects are also acceptable when for current manufacturer and relating to products used on this project.
  - 1. ICC-ES Acceptance Criteria; ICC-ES AC177.
  - 2. Flame Spread and Smoke Developed Index; UL 723.
  - 3. Rate and/or Extent and Time of Burning; ASTM D635.
  - 4. Color Difference; ASTM D2244.
  - 5. Burglary Resisting Glazing; UL 972.
  - 6. Bond Tensile Strength of Sandwich Construction; ASTM C297/C297M.
  - 7. Bond Shear Strength; ASTM D1002.
  - 8. Panel Beam Bending Strength; ASTM E72.
  - 9. Panel U-factor; NFRC 100.
  - 10. Visible Light Transmittance (VLT), Translucent; NFRC 202 or ASTM E972.
  - 11. Solar Heat Gain Coefficient (SHGC); NFRC 201 calculation.
  - 12. Condensation Resistance Factor; AAMA 1503.
  - 13. Air Leakage; ASTM E283/E283M.
  - 14. Structural Performance; ASTM E330/E330M.
  - 15. Water Penetration; ASTM E331.
  - 16. Fire Penetration of Exterior Wall Assemblies; ASTM E2707.
  - 17. Daylight Modeling Report.
- E. Manufacturer's qualification statement.
- F. Installer's qualification statement.

#### **1.05 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Manufactured material and products by company continuously and regularly employed in manufacture of specified materials for period of at least ten consecutive years, and with documented evidence of those materials being satisfactorily used on at least six projects of similar size, scope, and location, and at least three of these projects having been in successful use for ten years or longer.
  - 1. Listed panel system by certification agency complying with ISO/IEC 17065, that requires quality control inspections and fire, structural, and water infiltration testing of sandwich panel systems by accredited testing agency.
  - 2. Conduct quality control inspections at least once each year that include manufacturing facilities, sandwich panel components, and production sandwich panels to ensure product

complies with ICC-ES AC177 requirements.

- B. Installer Qualifications: Experienced installer that has been installing Kalwall panel systems for at least two consecutive years and that also provides documented evidence of satisfactory completion of projects of similar size, scope, and type.

#### **1.06 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver panel system, components and materials in manufacturer's standard protective packaging.
- B. Store panels on long edge above ground, blocked and under cover in accordance with manufacturer's storage and handling instructions.
- C. Handle products in accordance with manufacturer's written instructions.

#### **1.07 WARRANTY**

- A. See Section 01 7800 - Closeout Submittals for additional warranty requirements.
- B. Extended Panel Warranty:
  - 1. Provide 20-year limited warranty from Date of Delivery against external exposure of reinforcing glass fibers.

### **PART 2 PRODUCTS**

#### **2.01 MANUFACTURERS**

- A. This specification is based on products manufactured by Kalwall Corporation. Other manufacturers may bid this project subject to compliance with performance requirements as indicated and required submittals. Listing other manufacturer's names in this specification does not constitute approval of their products or relieve them of compliance with performance requirements as indicated.
  - 1. Kalwall Corporation:
    - a. Telephone: (800) 258-9777.
    - b. Fax: (603) 627-7905.
    - c. Email: info@kalwall.com.
- B. Fiberglass-Sandwich-Panel Assemblies Manufacturers:

#### **2.02 PERFORMANCE REQUIREMENTS**

- A. Manufacturer responsible for configuration and fabrication of complete panel system.
- B. Structural Wall Loads: Provide system capable of handling the following loads:
  - 1. Positive Wind Load: [ ] psf, allowable stress design (ASD).
  - 2. Negative Wind Load: [ ] psf, allowable stress design (ASD).
  - 3. Allowable Deflection Ratio: L/60, maximum.
- C. Air Leakage: Limit to allowable air leakage through panel system assembly with pressure difference across assembly at 6.24 psf in accordance with ASTM E283/E283M.
- D. Water Leakage: None, when measured in accordance with ASTM E331 at test-pressure difference of 15 psf.
- E. Structural Performance Testing by Uniform Static Air Pressure Difference: Comply with ASTM E330/E330M.
- F. Panel Beam Bending Strength: Less than 1.9 inch deflection at 30 psf loading and 10 ft span without supporting frame in accordance with ASTM E72 test method.
- G. Exterior Face Sheet Strength: Uniform in strength and impenetrable by handheld pencil and as follows:
  - 1. Ball Impact Test: Pass, based on repelling impact without fracture or tear by at least 70 ft lbf from 3-1/4 inch diameter 5 lb free-falling ball in accordance with UL 972 testing.
- H. Fire Penetration Resistance of Wall Assembly: Panels comply with conditions of acceptance in accordance with ASTM E2707.

1. Absence of flame penetration through wall assembly at any time.
  2. Absence of glowing combustion on interior surface of assembly at end of 60-minute observation period.
  3. Absence of flame, glow, and smoke when test is terminated prior to completion of 60-minute observation period.
- I. Expansion/Contraction: Provide for expansion and contraction within system components caused by cycling temperature range of 110 degrees F over 12-hour period without causing detrimental effect to system components.

## 2.03 COMPONENTS

- A. Type [ ] - Wall System: Sandwich panels of fiberglass-reinforced-plastic (FRP), translucent face sheets laminated to grid core with mechanically interlocking I-beams and straight adhesive bonding line that covers entire width of I-beam having neat, sharp edge, and protection of exterior face sheet provided with integral, embedded-glass erosion barrier.
- B. Face Sheets:
1. Translucent Face Sheets: Fabricated using glass fiber reinforced thermoset resins, and formulated specifically for architectural use.
    - a. Use of thermoplastic, e.g., polycarbonate and acrylic, for face sheets is not permitted.
    - b. Deformation, deflection, or dripping of face sheets upon exposure to fire is not permitted.
  2. Exterior Face Sheet:
    - a. Thickness: As required for system characteristics indicated; 0.070 inch, minimum.
    - b. Color as indicated under system description.
    - c. Color Stability: Color of exterior face sheet to not change color more than three CIE Units DELTA E in accordance with ASTM D2244 after 5 years outdoors in South Florida weathering facing south; color stability not affected by abrasion or scratching.
  3. Interior Face Sheet:
    - a. Thickness: As required for system characteristics indicated; 0.045 inch, minimum.
    - b. Provide exposed surface of interior face sheets with following flame spread index (FSI) and smoke developed index (SDI) in compliance with ASTM E84 or UL 723.
    - c. Provide Class CC1 face sheets with burning extent of 1 inch or less when tested in accordance with ASTM D635.
- C. Laminate Adhesive: Provided for adhering translucent panel face sheets to grid core; heat and pressure resistant resin-type adhesive for use with structural sandwich panels and designed for at least 25 years of field use, and complying with testing requirements of ICC-ES AC05.
1. Tensile Strength: At least 750 psi when panel assembly is tested in accordance with ASTM C297/C297M test method after two exposures to six cycles each of accelerated aging conditions complying with ASTM D1037.
  2. Shear Strength: Panel adhesive complying with ASTM D1002 upon exposure to the following conditions:
    - a. Exposed to 50 percent Relative Humidity (RH) at 68 degrees F, minimum shear strength of 540 psi.
    - b. Exposed to temperature of 182 degrees F, minimum shear strength of 100 psi.
    - c. Exposed to accelerated aging complying with ASTM D1037, minimum shear strength of 800 psi, tested at room temperature.
    - d. Exposed to accelerated aging complying with ASTM D1037, minimum shear strength of 250 psi, tested at 182 degrees F.

## 2.04 PERIMETER CLOSURE SYSTEM

- A. Closure Aluminum Clamp-Tite Installation System:
- B. Water-Resistive Barriers: To suit application, nonbleeding and nonstaining; see Section 07 2500.
- C. Sealant for Within Translucent Assembly: As required by manufacturer; see Section 07 9200.

- D. Sealing Tape: Manufacturer's standard; factory applied to closure system under controlled conditions.
- E. Fasteners: Stainless steel 300 Series screws for aluminum closures; excluding final fasteners to building.

**END OF SECTION**

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**SECTION 08 5113  
ALUMINUM WINDOWS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Extruded aluminum windows with fixed sash and operating sash.
- B. Factory glazing.
- C. Operating hardware.
- D. Insect screens.

**1.02 RELATED REQUIREMENTS**

- A. Section 05 5000 - Metal Fabrications: Steel lintels.
- B. Section 06 1000 - Rough Carpentry: Wood perimeter shims.
- C. Section 07 2500 - Weather Barriers: Sealing frame to weather barrier installed on adjacent construction.
- D. Section 07 9200 - Joint Sealants: Sealing joints between window frames and adjacent construction.
- E. Section 08 8000 - Glazing.

**1.03 REFERENCE STANDARDS**

- A. AAMA/WDMA/CSA 101/I.S.2/A440 - North American Fenestration Standard/Specification for Windows, Doors, and Skylights 2017.
- B. AAMA CW-10 - Care and Handling of Architectural Aluminum from Shop to Site 2015.
- C. AAMA 502 - Voluntary Specification for Field Testing of Newly Installed Fenestration Products 2012.
- D. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum 2020.
- E. AAMA 1503 - Voluntary Test Method for Thermal Transmittance and Condensation Resistance of Windows, Doors and Glazed Wall Sections 2009.
- F. ASHRAE Std 90.1 I-P - Energy Standard for Buildings Except Low-Rise Residential Buildings Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- G. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes 2021.
- H. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric) 2021.
- I. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements 2009 (Reapproved 2016).
- J. ASTM E283/E283M - Standard Test Method for Determining Rate of Air Leakage Through Exterior Windows, Skylights, Curtain Walls, and Doors Under Specified Pressure Differences Across the Specimen 2019.
- K. ASTM E331 - Standard Test Method for Water Penetration of Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform Static Air Pressure Difference 2000 (Reapproved 2016).
- L. ASTM E783 - Standard Test Method for Field Measurement of Air Leakage Through Installed Exterior Windows and Doors 2002 (Reapproved 2018).
- M. ASTM E1105 - Standard Test Method for Field Determination of Water Penetration of Installed Exterior Windows, Skylights, Doors, and Curtain Walls, by Uniform or Cyclic Static Air Pressure Difference 2015.
- N. ASTM E1332 - Standard Classification for Rating Outdoor-Indoor Sound Attenuation 2016.

- O. ASTM F588 - Standard Test Methods for Measuring the Forced Entry Resistance of Window Assemblies, Excluding Glazing Impact 2017.

#### **1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide component dimensions, information on glass and glazing, internal drainage details, and descriptions of hardware and accessories.
- C. Shop Drawings: Indicate opening dimensions, elevations of different types, framed opening tolerances, method for achieving air and vapor barrier seal to adjacent construction, anchorage locations, and installation requirements.
- D. Grade Substantiation: Prior to submitting shop drawings or starting fabrication, submit one of the following showing compliance with specified grade:
  - 1. Evidence of AAMA Certification.
  - 2. Evidence of WDMA Certification.
  - 3. Evidence of CSA Certification.
  - 4. Test report(s) by independent testing agency itemizing compliance and acceptable to authorities having jurisdiction.
- E. Test Reports: Prior to submitting shop drawings or starting fabrication, submit test report(s) by independent testing agency showing compliance with performance requirements in excess of those prescribed by specified grade.
- F. Field Quality Control Submittals: Report of field testing for water penetration and air leakage.
- G. Manufacturer's Qualification Statement.
- H. Installer's Qualification Statement.
- I. Warranty: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

#### **1.05 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with minimum ten years of documented experience.
- B. Installer Qualifications: Company specializing in performing work of type specified and with at least five years of documented experience.

#### **1.06 DELIVERY, STORAGE, AND HANDLING**

- A. Comply with requirements of AAMA CW-10.
- B. Protect finished surfaces with wrapping paper or strippable coating during installation. Do not use adhesive papers or sprayed coatings that bond to substrate when exposed to sunlight or weather.

#### **1.07 FIELD CONDITIONS**

- A. Do not install sealants when ambient temperature is less than 40 degrees F.
- B. Maintain this minimum temperature during and 24 hours after installation of sealants.

#### **1.08 WARRANTY**

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.
- B. Correct defective Work within a five year period after Date of Substantial Completion.
- C. Provide five year manufacturer warranty against failure of glass seal on insulating glass units, including interpane dusting or misting. Include provision for replacement of failed units.
- D. Provide five year manufacturer warranty against excessive degradation of exterior finish. Include provision for replacement of units with excessive fading, chalking, or flaking.



## **PART 2 PRODUCTS**

### **2.01 MANUFACTURERS**

- A. Basis of Design: Kawneer Series 8400TL Thermal Windows.
  - 1. Model 8340TL Single Hung Window
  - 2. 4" Frame Depth with Frame extenders

### **2.02 BASIS OF DESIGN - AW PERFORMANCE CLASS WINDOWS**

- A. Grade: AAMA/WDMA/CSA 101/I.S.2/A440 having Performance Class of AW, and Performance Grade PG70-H.
- B. Hung Windows; with Matching Fixed Units:
  - 1. Basis of Design: Kawneer Series 8400 TL Thermal Windows.
- C. Other Manufacturers: Provide either the product identified as "Basis of Design" or an equivalent product of one of the manufacturers listed below:
  - 1. EFCO Series 601 Single Hung 3-7/8" Architectural Grade Hung Thermal Window.
- D. Substitutions: See Section 01 6000 - Product Requirements.
  - 1. For any product not identified as "Basis of Design", submit information as specified for substitutions.

### **2.03 ALUMINUM WINDOWS**

- A. Aluminum Windows: Extruded aluminum frame and sash, factory fabricated, factory finished, with operating hardware, related flashings, and anchorage and attachment devices.
  - 1. Frame Depth: 4 inch plus extension frames to match at existing building.
  - 2. Operable Units: Double weatherstripped.
  - 3. Provide units factory glazed.
  - 4. Fabrication: Joints and corners flush, hairline, and weatherproof, accurately fitted and secured; prepared to receive anchors; fasteners and attachments concealed from view; reinforced as required for operating hardware and imposed loads.
  - 5. Perimeter Clearance: Minimize space between framing members and adjacent construction while allowing expected movement.
  - 6. Movement: Accommodate movement between window and perimeter framing and deflection of lintel, without damage to components or deterioration of seals.
  - 7. System Internal Drainage: Drain to the exterior by means of a weep drainage network any water entering joints, condensation occurring in glazing channel, and migrating moisture occurring within system.
  - 8. Thermal Movement: Design to accommodate thermal movement caused by 180 degrees F surface temperature without buckling stress on glass, joint seal failure, damaging loads on structural elements, damaging loads on fasteners, reduction in performance or other detrimental effects.
- B. Fixed, Non-Operable Type:
  - 1. Construction: Thermally broken.
  - 2. Glazing: Double; bronze tinted; low-e.
  - 3. Exterior Finish: Class I color anodized.
  - 4. Interior Finish: Class I color anodized.
- C. Single-Hung Type:
  - 1. Construction: Thermally broken.
  - 2. Provide screens.
  - 3. Glazing: Double; bronze tinted; low-e.

### **2.04 PERFORMANCE REQUIREMENTS**

- A. Grade: AAMA/WDMA/CSA 101/I.S.2/A440 requirements for specific window type:
  - 1. Performance Class (PC): AW.
  - 2. Performance Grade (PG): Equivalent to or greater than specified design pressure.
- B. Design Pressure (DP): In accordance with applicable codes.

- C. Member Deflection: Limit member deflection to 1/175 in any direction, with full recovery of glazing materials.
- D. Water Leakage: No uncontrolled leakage on interior face when tested in accordance with ASTM E331 at static air differential pressure of 10 psf.
- E. Air Leakage: 0.30 cfm/sq ft maximum leakage per unit area of outside window frame dimension when tested at 6.2 psf pressure difference in accordance with ASTM E283/E283M.
- F. Condensation Resistance Factor of Frame: 55 frame and 62 glass, measured in accordance with AAMA 1503.
- G. Overall Thermal Transmittance (U-value): .51, maximum, including glazing, measured on window sizes required for this project.
- H. Fenestration Assembly Thermal Transmittance (U-value): Comply with ASHRAE Std 90.1 I-P for building envelope requirements for applicable climate zone.
- I. Forced Entry Resistance: Tested to comply with ASTM F588 requirements for performance level of Grade 10 for specific window style required.
- J. Acoustic Performance: Minimum outdoor-indoor transmission class (OITC) rating of 32, when tested in accordance with ASTM E90 and ASTM E1332.

## **2.05 COMPONENTS**

- A. Frames: 4 inch wide by 4 inch deep profile, of 0.070 inch thick section; thermally broken with interior portion of frame insulated from exterior portion; flush glass stops of snap-on type.
- B. Glazing: See Section 08 8000.
  - 1. For Exterior Windows: Type IG-1.
- C. Sills: 0.070 inch thick, extruded aluminum; sloped for positive wash; fit under sash leg to 1/2 inch beyond wall face; one piece full width of opening; jamb angles to terminate sill end.
- D. Insect Screens: Extruded aluminum frame with mitered and reinforced corners; screen mesh taut and secure to frame; secured to window with adjustable hardware allowing screen removal without use of tools.
  - 1. Hardware: Spring loaded steel pins; four per screen unit.
  - 2. Screen Mesh: Vinyl-coated fiberglass, window manufacturer's standard mesh.
  - 3. Frame Finish: Same as frame and sash.
- E. Operable Sash Weatherstripping: Wool pile; permanently resilient, profiled to achieve effective weather seal.
- F. Fasteners: Aluminum, nonmagnetic stainless steel, or nickel/chrome-plated steel, or zinc-coated steel steel.
- G. Applied Muntins as shown on the drawings.
- H. Sub Frames and Window Panning to match profile of existing windows at 1922 building, as shown on the Drawings.
- I. Glazing Materials: See Section 08 8000.
- J. Sealant for Setting Sills and Sill Flashing: Non-curing butyl type.

## **2.06 MATERIALS**

- A. Extruded Aluminum: ASTM B221 (ASTM B221M), 6063 alloy, T6 temper.

## **2.07 HARDWARE**

- A. Sash lock: Lever handle with cam lock.
- B. Pulls: Manufacturer's standard type.
- C. Limit Stops: Resilient rubber.

## **2.08 FINISHES**

- A. Class I Color Anodized Finish: AAMA 611 AA-M12C22A44 Electrolytically deposited colored anodic coating not less than 0.7 mils thick.

- B. Finish Color: As selected by Architect from manufacturer's full range.
- C. Operator and Exposed Hardware: Enameled to color as selected from manufacturer's standard line.

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

- A. Verify that wall openings and adjoining air and vapor seal materials are ready to receive aluminum windows.

#### **3.02 INSTALLATION**

- A. Install windows in accordance with manufacturer's instructions.
- B. Install window assembly in accordance with AAMA/WDMA/CSA 101/I.S.2/A440.
- C. Attach window frame and shims to perimeter opening to accommodate construction tolerances and other irregularities.
- D. Align window plumb and level, free of warp or twist. Maintain dimensional tolerances and alignment with adjacent work.
- E. Install sill and panning.
- F. Set sill members and sill flashing in continuous bead of sealant.
- G. Provide thermal isolation where components penetrate or disrupt building insulation. Pack fibrous insulation in shim spaces at perimeter of assembly to maintain continuity of thermal barrier.
- H. Install operating hardware not pre-installed by manufacturer.

#### **3.03 TOLERANCES**

- A. Maximum Variation from Level or Plumb: 1/16 inches every 3 ft non-cumulative or 1/8 inches per 10 ft, whichever is less.

#### **3.04 FIELD QUALITY CONTROL**

- A. Provide services of aluminum window manufacturer's field representative to observe for proper installation of system.
- B. See Section 01 4000 - Quality Requirements, for independent field testing and inspection requirements, and requirements for monitoring quality of specified product installations.
- C. Provide field testing of installed aluminum windows by independent laboratory in accordance with AAMA 502 and AAMA/WDMA/CSA 101/I.S.2/A440 during construction process and before installation of interior finishes.
  - 1. Field test for water penetration in accordance with ASTM E1105 using Procedure B - cyclic static air pressure difference; test pressure shall not be less than 1.9 psf.
  - 2. Field test for air leakage in accordance with ASTM E783 with uniform static air pressure difference of 1.57 psf.
- D. Repair or replace fenestration components that have failed designated field testing, and retest to verify performance complies with specified requirements.

#### **3.05 ADJUSTING**

- A. Adjust hardware for smooth operation and secure weathertight closure.

#### **3.06 CLEANING**

- A. Remove protective material from factory finished aluminum surfaces.
- B. Wash surfaces by method recommended and acceptable to window manufacturer; rinse and wipe surfaces clean.

**END OF SECTION**

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**SECTION 08 5653  
SECURITY WINDOWS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Security transaction windows with pass-through device.

**1.02 RELATED REQUIREMENTS**

- A. Section 04 2000 - Unit Masonry: Installation of anchorage items embedded in masonry.
- B. Section 07 9200 - Joint Sealants: Sealing joints between frames and adjacent construction.

**1.03 REFERENCE STANDARDS**

- A. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum 2020.
- B. ASTM F588 - Standard Test Methods for Measuring the Forced Entry Resistance of Window Assemblies, Excluding Glazing Impact 2017.
- C. ASTM F1233 - Standard Test Method for Security Glazing Materials And Systems 2008 (Reapproved 2019).
- D. SSPC-Paint 33 - Coal Tar Mastic Coating, Cold-Applied 2006, with Editorial Revision (2015).
- E. UL (DIR) - Online Certifications Directory Current Edition.
- F. UL 752 - Standard for Bullet-Resisting Equipment Current Edition, Including All Revisions.

**1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Manufacturer's published data showing materials, construction details, dimensions of components, and finishes.
- C. Shop Drawings: Drawings prepared specifically for this project, showing plans, elevations, sections, details of construction, anchorage to other work, hardware, and glazing.
  - 1. For new work show required opening dimensions and allowance for field deviation.

**1.05 QUALITY ASSURANCE**

- A. Testing Agency Qualifications: Independent testing agency able to show experience in conducting tests of the type specified.

**1.06 WARRANTY**

- A. See Section 01 7800 - Closeout Submittals for additional warranty requirements.
- B. Provide manufacturer's warranty agreeing to repair or replace windows and window components that fail within three years after Date of Substantial Completion due to, but not limited to, the following:
  - 1. Structural failure, failure of welds, and deterioration of metals and finishes beyond that expected under detention use and normal weathering.
  - 2. Failure of glazing due to excessive deflection of supporting members under wind load.

**PART 2 PRODUCTS**

**2.01 MANUFACTURERS**

- A. Security Transaction Windows with Pass-Through Device:
  - 1. Quikserv Corporation; Model No. TI - 3036: [www.quikserv.com/#sle](http://www.quikserv.com/#sle).

**2.02 ASSEMBLIES**

- A. Security and Detention Windows:
  - 1. Dimensions, profiles, features, and performance specified and indicated on drawings are required; do not deviate unless specifically approved by Architect under substitution procedures; see Section 01 6000.
  - 2. Design to fit openings indicated on drawings; design to accommodate deviation of actual construction from dimensions indicated on drawings.

3. Fabricate frames and sash with corners mitered or coped full depth with concealed welded joints.
4. Design anchorages to provide performance equivalent to that required for window unit; provide anchorages at least equivalent to those by which the tested units were anchored to the test frame.
5. Separate dissimilar metals to prevent corrosion by galvanic action by painting contact surfaces with primer or with sealant or tape recommended by manufacturer for the purpose.
6. Weld components before finishing and in concealed locations, to greatest extent possible; minimize distortion and discoloration of finish; remove residue of welding; grind exposed welds smooth and finish to match.
7. Label units to indicate which side is which, such as inside/outside or secure/non-secure; use labels that are removable after installation but durable enough not to be lost during delivery, storage, handling, and installation.

### **2.03 SECURITY TRANSACTION WINDOWS WITH PASS-THROUGH DEVICE**

- A. Security Transaction Windows:
  1. Location: Built within interior wall at Main Office, as indicated on drawings.
  2. Type of Use: Walk-up.
  3. Forced Entry Resistance: Tested to meet ASTM F588, Grade 10 for window type and ASTM F1233, Class Achieved 1.0 for security glazing.
  4. Ballistic Resistance: Tested to meet UL 752, Level 1.
  5. Window Type: Fixed.
    - a. Mounting: Flush with the wall surface.
    - b. Window Size: 30 inch wide by 36 inch high.
    - c. Size of Counter Space: Manufacturer's standard size.
    - d. Material: Aluminum.
      - 1) Finish: Color anodized.
  6. Glazing: Single (monolithic), clear, and ballistic resistant.
  7. Counter Staging Area: Attendant-side.
  8. Communication: Integrated microphone, speaker and call button. Manufactured by Haven Technology Corporation- Model SC-100L with rechargeable lithium battery.
  9. Manufacturers:
    - a. Basis of Design: Quickserv Corp.: [www.quickserv.com/#sle](http://www.quickserv.com/#sle); Ticket/ Teller Window #TI-3036: 30" W x 36" H and built-in deal tray.
    - b. Substitutions: See Section 01 6000 - Product Requirements.

### **2.04 ASSEMBLY COMPONENTS**

- A. Frame Anchors: Mild steel plates, shapes, or bars, concealed in completed construction; provide anchorage devices as necessary to securely fasten windows to adjacent construction; use security fasteners for exposed anchors.
  1. Provide minimum of two anchors per side of window plus one additional anchor for each 18 inches or fraction thereof more than 36 inches in height or width.
- B. Glazing Seals: Factory installed; molded EPDM or neoprene compressible gaskets and compression strips.
- C. Speaking Aperture Covers: Stainless steel, round, allowing passage of speech at normal volume without distortion; listed and labeled by UL (DIR) as bullet resisting to UL 752, Level 1.
- D. Bituminous Paint: Cold-applied asbestos-free asphalt mastic, complying with SSPC-Paint 33; 30 mils, 0.030 inch minimum thickness per coat.

### **2.05 FINISHES**

- A. Class I Color Anodized Finish: AAMA 611 AA-M12C22A42 Integrally colored anodic coating not less than 0.7 mils thick.
- B. Color: As selected by Architect from manufacturer's full range.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that window openings are ready for installation of windows.
- B. Notify Architect if conditions are not suitable for installation of windows; do not proceed until conditions are satisfactory.

### **3.02 INSTALLATION**

- A. Install in accordance with manufacturer's instructions and drawing details.
- B. Install windows in correct orientation (inside/outside or secure/non-secure).
- C. Anchor windows securely in manner so as to achieve performance specified.
- D. Separate metal members from concrete and masonry using bituminous paint.
- E. Set sill members and sill flashing in continuous bead of sealant.

### **3.03 CLEANING**

- A. Clean exposed surfaces promptly after installation without damaging finishes.
- B. Remove and replace defective work.

**END OF SECTION**

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## **SECTION 08 7100 DOOR HARDWARE**

### **PART 1 GENERAL**

#### **1.01 SUMMARY**

- A. Section includes:
  - 1. Mechanical and electrified door hardware for:
    - a. Swinging doors.
    - b. Sliding doors.
    - c. Gates.
  - 2. Electronic access control system components
  - 3. Field verification, preparation and modification of existing doors and frames to receive new door hardware.
- B. Section excludes:
  - 1. Windows
  - 2. Cabinets (casework), including locks in cabinets
  - 3. Signage
  - 4. Toilet accessories
  - 5. Overhead doors
- C. Related Sections:
  - 1. Division 01 Section "Alternates" for alternates affecting this section.
  - 2. Division 06 Section "Rough Carpentry"
  - 3. Division 06 Section "Finish Carpentry"
  - 4. Division 07 Section "Joint Sealants" for sealant requirements applicable to threshold installation specified in this section.
  - 5. Division 08 Sections:
    - a. "Metal Doors and Frames"
    - b. "Flush Wood Doors"
    - c. "Aluminum-Framed Entrances and Storefronts"
  - 6. Division 09 sections for touchup, finishing or refinishing of existing openings modified by this section.
  - 7. Division 26 "Electrical" sections for connections to electrical power system and for low-voltage wiring.
  - 8. Division 28 "Electronic Safety and Security" sections for coordination with other components of electronic access control system and fire alarm system.

#### **1.02 REFERENCES**

- A. UL - Underwriters Laboratories
  - 1. UL 10B - Fire Test of Door Assemblies
  - 2. UL 10C - Positive Pressure Test of Fire Door Assemblies
  - 3. UL 1784 - Air Leakage Tests of Door Assemblies
  - 4. UL 305 - Panic Hardware
- B. DHI - Door and Hardware Institute
  - 1. Sequence and Format for the Hardware Schedule
  - 2. Recommended Locations for Builders Hardware
  - 3. Keying Systems and Nomenclature
  - 4. Installation Guide for Doors and Hardware
- C. NFPA – National Fire Protection Association
  - 1. NFPA 70 – National Electric Code
  - 2. NFPA 80 – 2016 Edition – Standard for Fire Doors and Other Opening Protectives
  - 3. NFPA 101 – Life Safety Code
  - 4. NFPA 105 – Smoke and Draft Control Door Assemblies
  - 5. NFPA 252 – Fire Tests of Door Assemblies

- D. ANSI - American National Standards Institute
1. ANSI A117.1 – 2017 Edition – Accessible and Usable Buildings and Facilities
  2. ANSI/BHMA A156.1 - A156.29, and ANSI/BHMA A156.31 - Standards for Hardware and Specialties
  3. ANSI/BHMA A156.28 - Recommended Practices for Keying Systems
  4. ANSI/WDMA I.S. 1A - Interior Architectural Wood Flush Doors
  5. ANSI/SDI A250.8 - Standard Steel Doors and Frames

### 1.03 SUBMITTALS

- A. General:
1. Submit in accordance with Conditions of Contract and Division 01 Submittal Procedures.
  2. Prior to forwarding submittal:
    - a. Comply with procedures for verifying existing door and frame compatibility for new hardware, as specified in PART 3, "EXAMINATION" article, herein.
    - b. Review drawings and Sections from related trades to verify compatibility with specified hardware.
    - c. Highlight, encircle, or otherwise specifically identify on submittals: deviations from Contract Documents, issues of incompatibility or other issues which may detrimentally affect the Work.
- B. Action Submittals:
1. Product Data: Submit technical product data for each item of door hardware, installation instructions, maintenance of operating parts and finish, and other information necessary to show compliance with requirements.
  2. Riser and Wiring Diagrams: After final approval of hardware schedule, submit details of electrified door hardware, indicating:
    - a. Wiring Diagrams: For power, signal, and control wiring and including:
      - 1) Details of interface of electrified door hardware and building safety and security systems.
      - 2) Schematic diagram of systems that interface with electrified door hardware.
      - 3) Point-to-point wiring.
      - 4) Risers.
  3. Samples for Verification: If requested by Architect, submit production sample of requested door hardware unit in finish indicated and tagged with full description for coordination with schedule.
    - a. Samples will be returned to supplier. Units that are acceptable to Architect may, after final check of operations, be incorporated into Work, within limitations of key coordination requirements.
  4. Door Hardware Schedule:
    - a. Submit concurrent with submissions of Product Data, Samples, and Shop Drawings. Coordinate submission of door hardware schedule with scheduling requirements of other work to facilitate fabrication of other work critical in Project construction schedule.
    - b. Submit under direct supervision of a Door Hardware Institute (DHI) certified Architectural Hardware Consultant (AHC) or Door Hardware Consultant (DHC) with hardware sets in vertical format as illustrated by Sequence of Format for the Hardware Schedule published by DHI.
    - c. Indicate complete designations of each item required for each opening, include:
      - 1) Door Index: door number, heading number, and Architect's hardware set number.
      - 2) Quantity, type, style, function, size, and finish of each hardware item.
      - 3) Name and manufacturer of each item.
      - 4) Fastenings and other pertinent information.
      - 5) Location of each hardware set cross-referenced to indications on Drawings.
      - 6) Explanation of all abbreviations, symbols, and codes contained in schedule.
      - 7) Mounting locations for hardware.

- 8) Door and frame sizes and materials.
  - 9) Degree of door swing and handing.
  - 10) Operational Description of openings with electrified hardware covering egress, ingress (access), and fire/smoke alarm connections.
5. Key Schedule:
    - a. After Keying Conference, provide keying schedule that includes levels of keying, explanations of key system's function, key symbols used, and door numbers controlled.
    - b. Use ANSI/BHMA A156.28 "Recommended Practices for Keying Systems" as guideline for nomenclature, definitions, and approach for selecting optimal keying system.
    - c. Provide 3 copies of keying schedule for review prepared and detailed in accordance with referenced DHI publication. Include schematic keying diagram and index each key to unique door designations.
    - d. Index keying schedule by door number, keyset, hardware heading number, cross keying instructions, and special key stamping instructions.
    - e. Provide one complete bitting list of key cuts and one key system schematic illustrating system usage and expansion. Forward bitting list, key cuts and key system schematic directly to Owner, by means as directed by Owner.
    - f. Prepare key schedule by or under supervision of supplier, detailing Owner's final keying instructions for locks.
  6. Templates: After final approval of hardware schedule, provide templates for doors, frames and other work specified to be factory or shop prepared for door hardware installation.
- C. Informational Submittals:
1. Provide Qualification Data for Supplier, Installer and Architectural Hardware Consultant.
  2. Provide Product Data:
    - a. Certify that door hardware approved for use on types and sizes of labeled fire-rated doors complies with listed fire-rated door assemblies.
    - b. Include warranties for specified door hardware.
- D. Closeout Submittals:
1. Operations and Maintenance Data: Provide in accordance with Division 01 and include:
    - a. Complete information on care, maintenance, and adjustment; data on repair and replacement parts, and information on preservation of finishes.
    - b. Catalog pages for each product.
    - c. Factory order acknowledgement numbers (for warranty and service)
    - d. Name, address, and phone number of local representative for each manufacturer.
    - e. Parts list for each product.
    - f. Final approved hardware schedule edited to reflect conditions as installed.
    - g. Final keying schedule
    - h. Copies of floor plans with keying nomenclature
    - i. Copy of warranties including appropriate reference numbers for manufacturers to identify project.
    - j. As-installed wiring diagrams for each opening connected to power, both low voltage and 110 volts.
- E. Inspection and Testing:
1. Submit a written report of the results of functional testing and inspection for fire door assemblies, in compliance with NFPA 80.
    - a. Written report to be provided to the Owner and be made available to the Authority Having Jurisdiction (AHJ).
    - b. Report to include the door number for each fire door assembly, door location, door and frame material, fire rating, and summary of deficiencies.
  2. Submit a written report of the results of functional testing and inspection for required egress door assemblies, in compliance with NFPA 101.

- a. Written report to be provided to the Owner and be made available to the Authority Having Jurisdiction (AHJ).
- b. Report to include the door number for each required egress door assembly, door location, door and frame material, fire rating, and summary of deficiencies.

#### **1.04 QUALITY ASSURANCE**

##### **A. Qualifications and Responsibilities:**

1. Supplier: Recognized architectural hardware supplier with record of successful in-service performance for supplying door hardware similar in quantity, type, and quality to that indicated for this Project and that provides certified Architectural Hardware Consultant (AHC) or Door Hardware Consultant (DHC) available to Owner, Architect, and Contractor, at reasonable times during the Work for consultation.
  - a. Warehousing Facilities: In Project's vicinity.
  - b. Scheduling Responsibility: Preparation of door hardware and keying schedules.
  - c. Engineering Responsibility: Preparation of data for electrified door hardware, including Shop Drawings, based on testing and engineering analysis of manufacturer's standard units in assemblies like those indicated for this Project.
  - d. Coordination Responsibility: Assist in coordinating installation of electronic security hardware with Architect and electrical engineers and provide installation and technical data to Architect and other related subcontractors.
    - 1) Upon completion of electronic security hardware installation, inspect and verify that all components are working properly.
2. Installer: Qualified tradesperson skilled in the application of commercial grade hardware with experience installing door hardware similar in quantity, type, and quality as indicated for this Project.
3. Architectural Hardware Consultant: Person who is experienced in providing consulting services for door hardware installations that are comparable in material, design, and extent to that indicated for this Project and meets these requirements:
  - a. For door hardware: DHI certified AHC or DHC.
  - b. Can provide installation and technical data to Architect and other related subcontractors.
  - c. Can inspect and verify components are in working order upon completion of installation.
  - d. Capable of producing wiring diagram and coordinating installation of electrified hardware with Architect and electrical engineers.
4. Single Source Responsibility: Obtain each type of door hardware from single manufacturer.

##### **B. Certifications:**

1. Fire-Rated Door Openings:
  - a. Provide door hardware for fire-rated openings that complies with NFPA 80 and requirements of authorities having jurisdiction.
  - b. Provide only items of door hardware that are listed products tested by Underwriters Laboratories, Intertek Testing Services, or other testing and inspecting organizations acceptable to authorities having jurisdiction for use on types and sizes of doors indicated, based on testing at positive pressure and according to NFPA 252 or UL 10C and in compliance with requirements of fire-rated door and door frame labels.
2. Smoke and Draft Control Door Assemblies:
  - a. Provide door hardware that meets requirements of assemblies tested according to UL 1784 and installed in compliance with NFPA 105
  - b. Comply with the maximum air leakage of 0.3 cfm/sq. ft. (3 cu. m per minute/sq. m) at tested pressure differential of 0.3-inch wg (75 Pa) of water.
3. Electrified Door Hardware
  - a. Listed and labeled as defined in NFPA 70, Article 100, by testing agency acceptable to authorities having jurisdiction.
4. Accessibility Requirements:

- a. Comply with governing accessibility regulations cited in "REFERENCES" article 087100, 1.02.D3 herein for door hardware on doors in an accessible route. This project must comply with all Federal Americans with Disability Act regulations and all Local Accessibility Regulations.
- C. Pre-Installation Meetings
  - 1. Keying Conference
    - a. Incorporate keying conference decisions into final keying schedule after reviewing door hardware keying system including:
      - 1) Function of building, flow of traffic, purpose of each area, degree of security required, and plans for future expansion.
      - 2) Preliminary key system schematic diagram.
      - 3) Requirements for key control system.
      - 4) Requirements for access control.
      - 5) Address for delivery of keys.
  - 2. Pre-installation Conference
    - a. Review and finalize construction schedule and verify availability of materials, Installer's personnel, equipment, and facilities needed to make progress and avoid delays.
    - b. Inspect and discuss preparatory work performed by other trades.
    - c. Inspect and discuss electrical roughing-in for electrified door hardware.
    - d. Review sequence of operation for each type of electrified door hardware.
    - e. Review required testing, inspecting, and certifying procedures.
    - f. Review questions or concerns related to proper installation and adjustment of door hardware.
  - 3. Electrified Hardware Coordination Conference:
    - a. Prior to ordering electrified hardware, schedule and hold meeting to coordinate door hardware with security, electrical, doors and frames, and other related suppliers.

#### **1.05 DELIVERY, STORAGE, AND HANDLING**

- A. Inventory door hardware on receipt and provide secure lock-up for hardware delivered to Project site. Promptly replace products damaged during shipping.
- B. Tag each item or package separately with identification coordinated with final door hardware schedule, and include installation instructions, templates, and necessary fasteners with each item or package. Deliver each article of hardware in manufacturer's original packaging.
- C. Maintain manufacturer-recommended environmental conditions throughout storage and installation periods.
- D. Provide secure lock-up for door hardware delivered to Project. Control handling and installation of hardware items so that completion of Work will not be delayed by hardware losses both before and after installation.
- E. Handle hardware in manner to avoid damage, marring, or scratching. Correct, replace or repair products damaged during Work. Protect products against malfunction due to paint, solvent, cleanser, or any chemical agent.
- F. Deliver keys to manufacturer of key control system for subsequent delivery to Owner.

#### **1.06 COORDINATION**

- A. Coordinate layout and installation of floor-recessed door hardware with floor construction. Cast anchoring inserts into concrete.
- B. Installation Templates: Distribute for doors, frames, and other work specified to be factory or shop prepared. Check Shop Drawings of other work to confirm that adequate provisions are made for locating and installing door hardware to comply with indicated requirements.
- C. Security: Coordinate installation of door hardware, keying, and access control with Owner's security consultant.

- D. Electrical System Roughing-In: Coordinate layout and installation of electrified door hardware with connections to power supplies and building safety and security systems.
- E. Existing Openings: Where existing doors, frames and/or hardware are to remain, field verify existing functions, conditions and preparations and coordinate to suit opening conditions and to provide proper door operation.

## **1.07 WARRANTY**

- A. Manufacturer's standard form in which manufacturer agrees to repair or replace components of door hardware that fail in materials or workmanship within published warranty period.
  - 1. Warranty does not cover damage or faulty operation due to improper installation, improper use or abuse.
  - 2. Warranty Period: Beginning from date of Substantial Completion, for durations indicated in manufacturer's published listings.
    - a. Mechanical Warranty
      - 1) Locks
        - (a) Schlage ND Series: 10 year
      - 2) Exit Devices
        - (a) Von Duprin: 3 year
      - 3) Closers
        - (a) LCN 4050 Series: 25 year
      - 4) Accessories
        - (a) Ives Continuous Hinges: Lifetime
    - b. Electrical Warranty
      - 1) Exit Devices
        - (a) Von Duprin: 1 year

## **1.08 MAINTENANCE**

- A. Furnish complete set of special tools required for maintenance and adjustment of hardware, including changing of cylinders.
- B. Turn over unused materials to Owner for maintenance purposes.

## **PART 2 PRODUCTS**

### **2.01 MANUFACTURERS**

- A. Approval of manufacturers and/or products other than those listed as "Scheduled Manufacturer" or "Acceptable Manufacturers" in the individual article for the product category shall be in accordance with QUALITY ASSURANCE article, herein.
- B. Approval of products from manufacturers indicated in "Acceptable Manufacturers" is contingent upon those products providing all functions and features and meeting all requirements of scheduled manufacturer's product.
- C. Where specified hardware is not adaptable to finished shape or size of members requiring hardware, furnish suitable types having same operation and quality as type specified, subject to Architect's approval.

### **2.02 MATERIALS**

- A. Fasteners
  - 1. Provide hardware manufactured to conform to published templates, generally prepared for machine screw installation.
  - 2. Furnish screws for installation with each hardware item. Finish exposed (exposed under any condition) screws to match hardware finish, or, if exposed in surfaces of other work, to match finish of this other work including prepared for paint surfaces to receive painted finish.
  - 3. Provide concealed fasteners for hardware units exposed when door is closed except when no standard units of type specified are available with concealed fasteners. Do not use thru-bolts for installation where bolt head or nut on opposite face is exposed in other work unless thru-bolts are required to fasten hardware securely. Review door specification and

- advise Architect if thru bolts are required.
4. Install hardware with fasteners provided by hardware manufacturer.
- B. Provide screws, bolts, expansion shields, drop plates and other devices necessary for hardware installation.
1. Where fasteners are exposed to view: Finish to match adjacent door hardware material.

## **2.03 HINGES**

- A. Manufacturers and Products:
1. Scheduled Manufacturer and Product:
    - a. Ives 5BB series
  2. Acceptable Manufacturers and Products:
    - a. Hager BB1191/1279 series
    - b. McKinney TA/T4A series
- B. Requirements:
1. Provide hinges conforming to ANSI/BHMA A156.1.
  2. Provide five knuckle, ball bearing hinges.
  3. 1-3/4 inch (44 mm) thick doors, up to and including 36 inches (914 mm) wide:
    - a. Exterior: Standard weight, bronze or stainless steel, 4-1/2 inches (114 mm) high
    - b. Interior: Standard weight, steel, 4-1/2 inches (114 mm) high
  4. 1-3/4 inch (44 mm) thick doors over 36 inches (914 mm) wide:
    - a. Exterior: Heavy weight, bronze/stainless steel, 5 inches (127 mm) high
    - b. Interior: Heavy weight, steel, 5 inches (127 mm) high
  5. 2 inches or thicker doors:
    - a. Exterior: Heavy weight, bronze or stainless steel, 5 inches (127 mm) high
    - b. Interior: Heavy weight, steel, 5 inches (127 mm) high
  6. Adjust hinge width for door, frame, and wall conditions to allow proper degree of opening.
  7. Provide three hinges per door leaf for doors 90 inches (2286 mm) or less in height, and one additional hinge for each 30 inches (762 mm) of additional door height.
  8. Where new hinges are specified for existing doors or existing frames, provide new hinges of identical size to hinge preparation present in existing door or existing frame.
  9. Hinge Pins: Except as otherwise indicated, provide hinge pins as follows:
    - a. Steel Hinges: Steel pins
    - b. Non-Ferrous Hinges: Stainless steel pins
    - c. Out-Swinging Exterior Doors: Non-removable pins
    - d. Out-Swinging Interior Lockable Doors: Non-removable pins
    - e. Interior Non-lockable Doors: Non-rising pins
  10. Provide hinges with electrified options as scheduled in the hardware sets. Provide with number and gage of wires enough to accommodate electric function of specified hardware. Locate electric hinge at second hinge from bottom or nearest to electrified locking component. Provide mortar guard for each electrified hinge specified.

## **2.04 CONTINUOUS HINGES**

- A. Manufacturers:
1. Scheduled Manufacturer:
    - a. Ives
  2. Acceptable Manufacturers:
    - a. Stanley
    - b. Roton
- B. Requirements:
1. Provide aluminum geared continuous hinges conforming to ANSI/BHMA A156.26, Grade 1.
  2. Provide aluminum geared continuous hinges, where specified in the hardware sets, fabricated from 6063-T6 aluminum.

3. Provide split nylon bearings at each hinge knuckle for quiet, smooth, self-lubricating operation.
4. Provide hinges capable of supporting door weights up to 450 pounds, and successfully tested for 1,500,000 cycles.
5. On fire-rated doors, provide aluminum geared continuous hinges classified for use on rated doors by testing agency acceptable to authority having jurisdiction.
6. Provide aluminum geared continuous hinges with electrified option scheduled in the hardware sets. Provide with number and gage of wires enough to accommodate electric function of specified hardware.
7. Provide hinges 1 inch (25 mm) shorter in length than nominal height of door, unless otherwise noted or door details require shorter length and with symmetrical hole pattern.

## **2.05 FLUSH BOLTS**

- A. Manufacturers:
  1. Scheduled Manufacturer:
    - a. Ives
  2. Acceptable Manufacturers:
    - a. Burns
    - b. Rockwood
- B. Requirements:
  1. Provide automatic, constant latching, and manual flush bolts with forged bronze or stainless-steel face plates, extruded brass levers, and with wrought brass guides and strikes. Provide 12 inch (305 mm) steel or brass rods at doors up to 90 inches (2286 mm) in height. For doors over 90 inches (2286 mm) in height increase top rods by 6 inches (152 mm) for each additional 6 inches (152 mm) of door height. Provide dust-proof strikes at each bottom flush bolt.

## **2.06 CYLINDRICAL LOCKS**

- A. Manufacturers and Products:
  1. Scheduled Manufacturer and Product:
    - a. Schlage ND series
  2. Acceptable Manufacturers and Products:
    - a. Match Existing
- B. Requirements:
  1. Provide cylindrical locks conforming to ANSI/BHMA A156.2 Series 4000, Grade 1, and UL Listed for 3-hour fire doors.
  2. Cylinders: Refer to "KEYING" article, herein.
  3. Provide locks with standard 2-3/4 inches (70 mm) backset, unless noted otherwise, with 1/2-inch latch throw. Provide proper latch throw for UL listing at pairs.
  4. Provide locksets with separate anti-rotation thru-bolts, and no exposed screws.
  5. Provide independently operating levers with two external return spring cassettes mounted under roses to prevent lever sag.
  6. Provide standard ASA strikes unless extended lip strikes are necessary to protect trim.
  7. Provide electrified options as scheduled in the hardware sets.
  8. Lever Trim: Solid cast levers without plastic inserts and wrought roses on both sides.
    - a. Lever Design: RHO.

## **2.07 EXIT DEVICES**

- A. Manufacturers and Products:
  1. Scheduled Manufacturer and Product:
    - a. Von Duprin 99/33A series
  2. Acceptable Manufacturers and Products:
    - a. Detex Advantex series
    - b. Precision APEX 2000 series
- B. Requirements:



1. Provide exit devices tested to ANSI/BHMA A156.3 Grade 1 and UL listed for Panic Exit or Fire Exit Hardware.
2. Cylinders: Refer to "KEYING" article, herein.
3. Provide grooved touchpad type exit devices, fabricated of brass, bronze, stainless steel, or aluminum, plated to standard architectural finishes to match balance of door hardware.
4. Touchpad must extend a minimum of one half of door width. No plastic inserts are allowed in touchpads.
5. Provide exit devices with deadlatching feature for security and for future addition of alarm kits and/or other electrified requirements.
6. Provide exit devices with weather resistant components that can withstand harsh conditions of various climates and corrosive cleaners used in outdoor pool environments.
7. Provide flush end caps for exit devices.
8. Provide exit devices with manufacturer's approved strikes.
9. Provide exit devices cut to door width and height. Install exit devices at height recommended by exit device manufacturer, allowable by governing building codes, and approved by Architect.
10. Mount mechanism case flush on face of doors or provide spacers to fill gaps behind devices. Where glass trim or molding projects off face of door, provide glass bead kits.
11. Provide cylinder or hex-key dogging as specified at non fire-rated openings.
12. Provide dogging indicators (CDSI/HDSI) for visible indication of dogging status.
13. Removable Mullions: 2 inches (51 mm) x 3 inches (76 mm) steel tube. Where scheduled as keyed removable mullion, provide type that can be removed by use of a keyed cylinder, which is self-locking when re-installed.
14. Provide factory drilled weep holes for exit devices used in full exterior application, highly corrosive areas, and where noted in hardware sets.
15. Provide electrified options as scheduled.
16. Top latch mounting: double- or single-tab mount for steel doors, face mount for aluminum doors eliminating requirement of tabs, and double tab mount for wood doors.
17. Provide exit devices with optional trim designs to match other lever and pull designs used on the project.

## **2.08 POWER SUPPLIES**

- A. Manufacturers and Products:
  1. Scheduled Manufacturer and Product:
    - a. Schlage/Von Duprin PS900 Series
  2. Acceptable Manufacturers and Products:
    - a. Precision ELR series
    - b. Securitron BPS series
- B. Requirements:
  1. Provide power supplies approved by manufacturer of supplied electrified hardware.
  2. Provide appropriate quantity of power supplies necessary for proper operation of electrified locking components as recommended by manufacturer of electrified locking components with consideration for each electrified component using power supply, location of power supply, and approved wiring diagrams. Locate power supplies as directed by Architect.
  3. Provide regulated and filtered 24 VDC power supply, and UL class 2 listed.
  4. Provide power supplies with the following features:
    - a. 12/24 VDC Output, field selectable.
    - b. Class 2 Rated power limited output.
    - c. Universal 120-240 VAC input.
    - d. Low voltage DC, regulated and filtered.
    - e. Polarized connector for distribution boards.
    - f. Fused primary input.
    - g. AC input and DC output monitoring circuit w/LED indicators.
    - h. Cover mounted AC Input indication.

- i. Tested and certified to meet UL294.
- j. NEMA 1 enclosure.
- k. Hinged cover w/lock down screws.
- l. High voltage protective cover.

## 2.09 CYLINDERS

- A. Manufacturers and Products:
  - 1. Scheduled Manufacturer and Product:
    - a. By Owner
- B. Requirements:
  - 1. All cylinder housings to be prepped for Small Format Interchangeable cores - cores to be supplied by Owner.
  - 2. Provide cylinders/cores, compliant with ANSI/BHMA A156.5; latest revision; cylinder face finished to match lockset, manufacturer's series as indicated. Refer to "KEYING" article, herein.
  - 3. Provide cylinders in the below-listed configuration(s), distributed throughout the Project as indicated.
    - a. High Security: dual-locking cylinder with permanent core requiring restricted, patented keyway. Dual-locking mechanism with interlocking finger pin(s) to check for patented features on keys.
  - 4. Patent Protection: Cylinders/cores requiring use of restricted, patented keys, patent protected.
  - 5. Nickel silver bottom pins.
- C. Construction Keying:
  - 1. Replaceable Construction Cores.
    - a. Provide temporary construction cores replaceable by permanent cores, furnished in accordance with the following requirements.
      - 1) 3 construction control keys
      - 2) 12 construction change (day) keys.
    - b. Owner or Owner's Representative will replace temporary construction cores with permanent cores.

## 2.10 KEYING

- A. Provide cylinders/cores keyed into Owner's existing factory registered keying system. Comply with guidelines in ANSI/BHMA A156.28, incorporating decisions made at keying conference.
- B. Requirements:
  - 1. Provide permanent cylinders/cores keyed by the manufacturer according to the following key system.
    - a. Master Keying system as directed by the Owner.
  - 2. Forward bitting list and keys separately from cylinders, by means as directed by Owner. Failure to comply with forwarding requirements will be cause for replacement of cylinders/cores involved at no additional cost to Owner.
  - 3. Provide keys with the following features:
    - a. Material: Nickel silver; minimum thickness of .107-inch (2.3mm)
    - b. Patent Protection: Keys and blanks protected by one or more utility patent(s).
  - 4. Identification:
    - a. Mark permanent cylinders/cores and keys with applicable blind code for identification. Do not provide blind code marks with actual key cuts.
    - b. Identification stamping provisions must be approved by the Architect and Owner.
    - c. Stamp cylinders/cores and keys with Owner's unique key system facility code as established by the manufacturer; key symbol and embossed or stamped with "DO NOT DUPLICATE" along with the "PATENTED" or patent number to enforce the patent protection.
    - d. Failure to comply with stamping requirements will be cause for replacement of keys involved at no additional cost to Owner.

- e. Forward permanent cylinders/cores to Owner, separately from keys, by means as directed by Owner.
- 5. Quantity: Furnish in the following quantities.
  - a. Change (Day) Keys: 3 per cylinder/core.
  - b. Permanent Control Keys: 3.
  - c. Master Keys: 6.

## **2.11 KEY CONTROL SYSTEM**

- A. Manufacturers:
  - 1. Scheduled Manufacturer:
    - a. Telkee
  - 2. Acceptable Manufacturers:
    - a. No Substitute
    - b. HPC
    - c. Lund
- B. Requirements:
  - 1. Provide key control system, including envelopes, labels, tags with self-locking key clips, receipt forms, 3-way visible card index, temporary markers, permanent markers, and standard metal cabinet, all as recommended by system manufacturer, with capacity for 150% of number of locks required for Project.
    - a. Provide complete cross index system set up by hardware supplier, and place keys on markers and hooks in cabinet as determined by final key schedule.
    - b. Provide hinged-panel type cabinet for wall mounting.

## **2.12 DOOR CLOSERS**

- A. Manufacturers and Products:
  - 1. Scheduled Manufacturer and Product:
    - a. LCN 4050A series
  - 2. Acceptable Manufacturers and Products:
    - a. Norton 7500 series
- B. Requirements:
  - 1. Provide door closers conforming to ANSI/BHMA A156.4 Grade 1 requirements by BHMA certified independent testing laboratory. ISO 9000 certify closers. Stamp units with date of manufacture code.
  - 2. Provide door closers with fully hydraulic, full rack and pinion action with cast aluminum cylinder.
  - 3. Closer Body: 1-1/2-inch (38 mm) diameter with 11/16-inch (17 mm) diameter heat-treated pinion journal and full complement bearings.
  - 4. Hydraulic Fluid: Fireproof, passing requirements of UL10C, and all weather requiring no seasonal closer adjustment for temperatures ranging from 120 degrees F to -30 degrees F.
  - 5. Spring Power: Continuously adjustable over full range of closer sizes, and providing reduced opening force as required by accessibility codes and standards.
  - 6. Hydraulic Regulation: By tamper-proof, non-critical valves, with separate adjustment for latch speed, general speed, and back check.
  - 7. Pressure Relief Valve (PRV) Technology: Not permitted.
  - 8. Provide stick on templates, special templates, drop plates, mounting brackets, or adapters for arms as required for details, overhead stops, and other door hardware items interfering with closer mounting.

## **2.13 DOOR TRIM**

- A. Manufacturers:
  - 1. Scheduled Manufacturer:
  - 2. Acceptable Manufacturers:
    - a. Burns

- b. Rockwood
- B. Requirements:
  - 1. Provide push plates, push bars, pull plates, pulls, and hands-free reversible door pulls with diameter and length as scheduled.

#### **2.14 PROTECTION PLATES**

- A. Manufacturers:
  - 1. Scheduled Manufacturer:
    - a. Ives
  - 2. Acceptable Manufacturers:
    - a. Trimco
    - b. Rockwood
- B. Requirements:
  - 1. Provide protection plates with a minimum of 0.050 inch (1 mm) thick, beveled four edges as scheduled. Furnish with sheet metal or wood screws, finished to match plates.
  - 2. Size plates 2 inches (51 mm) less width of door on single doors, pairs of doors with a mullion, and doors with edge guards. Size plates 1 inch (25 mm) less width of door on pairs without a mullion or edge guards.
  - 3. At fire rated doors, provide protection plates over 16 inches high with UL label.

#### **2.15 OVERHEAD STOPS AND OVERHEAD STOP/HOLDERS**

- A. Manufacturers:
  - 1. Scheduled Manufacturers:
    - a. Glynn-Johnson
  - 2. Acceptable Manufacturers:
    - a. Rixson
    - b. Sargent
- B. Requirements:
  - 1. Provide overhead stop at any door where conditions do not allow for a wall stop or floor stop presents tripping hazard.
  - 2. Provide friction type at doors without closer and positive type at doors with closer.

#### **2.16 DOOR STOPS AND HOLDERS**

- A. Manufacturers:
  - 1. Scheduled Manufacturer:
    - a. Ives
  - 2. Acceptable Manufacturers:
    - a. Burns
    - b. Rockwood
- B. Provide door stops at each door leaf:
  - 1. Provide wall stops wherever possible. Provide concave type where lockset has a push button of thumbturn.
  - 2. Where a wall stop cannot be used, provide universal floor stops.
  - 3. Where wall or floor stop cannot be used, provide overhead stop.
  - 4. Provide roller bumper where doors open into each other and overhead stop cannot be used.

#### **2.17 THRESHOLDS, SEALS, DOOR SWEEPS, AUTOMATIC DOOR BOTTOMS, AND GASKETING**

- A. Manufacturers:
  - 1. Scheduled Manufacturer:
    - a. Zero International
  - 2. Acceptable Manufacturers:
    - a. National Guard
    - b. Reese

- B. Requirements:
  - 1. Provide thresholds, weather-stripping, and gasketing systems as specified and per architectural details. Match finish of other items.
  - 2. Smoke- and Draft-Control Door Assemblies: Where smoke- and draft-control door assemblies are required, provide door hardware that meets requirements of assemblies tested according to UL 1784 and installed in compliance with NFPA 105.
  - 3. Provide door sweeps, seals, astragals, and auto door bottoms only of type where resilient or flexible seal strip is easily replaceable and readily available.
  - 4. Size thresholds 1/2 inch (13 mm) high by 5 inches (127 mm) wide by door width unless otherwise specified in the hardware sets or detailed in the drawings.

## **2.18 SILENCERS**

- A. Manufacturers:
  - 1. Scheduled Manufacturer:
    - a. Ives
  - 2. Acceptable Manufacturers:
    - a. Rockwood
    - b. Trimco
- B. Requirements:
  - 1. Provide "push-in" type silencers for hollow metal or wood frames.
  - 2. Provide one silencer per 30 inches (762 mm) of height on each single frame, and two for each pair frame.
  - 3. Omit where gasketing is specified.

## **2.19 FINISHES**

- A. Finish: BHMA 626/652 (US26D); except:
  - 1. Aluminum Geared Continuous Hinges: BHMA 628 (US28)
  - 2. Push Plates, Pulls, and Push Bars: BHMA 630 (US32D)
  - 3. Protection Plates: BHMA 630 (US32D)
  - 4. Overhead Stops and Holders: BHMA 630 (US32D)
  - 5. Door Closers: Powder Coat to Match
  - 6. Wall Stops: BHMA 630 (US32D)
  - 7. Weatherstripping: Clear Anodized Aluminum
  - 8. Thresholds: Mill Finish Aluminum

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Prior to installation of hardware, examine doors and frames, with Installer present, for compliance with requirements for installation tolerances, labeled fire-rated door assembly construction, wall and floor construction, and other conditions affecting performance. Verify doors, frames, and walls have been properly reinforced for hardware installation.
- B. Field verify existing doors and frames receiving new hardware and existing conditions receiving new openings. Verify that new hardware is compatible with existing door and frame preparation and existing conditions.
- C. Examine roughing-in for electrical power systems to verify actual locations of wiring connections before electrified door hardware installation.
- D. Submit a list of deficiencies in writing and proceed with installation only after unsatisfactory conditions have been corrected.

### **3.02 PREPARATION**

- A. Where on-site modification of doors and frames is required:
  - 1. Carefully remove existing door hardware and components being reused. Clean, protect, tag, and store in accordance with storage and handling requirements specified herein.
  - 2. Field modify and prepare existing doors and frames for new hardware being installed.

3. When modifications are exposed to view, use concealed fasteners, when possible.
4. Prepare hardware locations and reinstall in accordance with installation requirements for new door hardware and with:
  - a. Steel Doors and Frames: For surface applied door hardware, drill and tap doors and frames according to ANSI/SDI A250.6.
  - b. Wood Doors: DHI WDHS.5 "Recommended Hardware Reinforcement Locations for Mineral Core Wood Flush Doors."
  - c. Doors in rated assemblies: NFPA 80 for restrictions on on-site door hardware preparation.

### **3.03 INSTALLATION**

- A. Mount door hardware units at heights to comply with the following, unless otherwise indicated or required to comply with governing regulations.
  1. Standard Steel Doors and Frames: ANSI/SDI A250.8.
  2. Custom Steel Doors and Frames: HMMA 831.
  3. Interior Architectural Wood Flush Doors: ANSI/WDMA I.S. 1A
  4. Installation Guide for Doors and Hardware: DHI TDH-007-20
- B. Install each hardware item in compliance with manufacturer's instructions and recommendations, using only fasteners provided by manufacturer.
- C. Do not install surface mounted items until finishes have been completed on substrate. Protect all installed hardware during painting.
- D. Set units level, plumb and true to line and location. Adjust and reinforce attachment substrate as necessary for proper installation and operation.
- E. Drill and countersink units that are not factory prepared for anchorage fasteners. Space fasteners and anchors according to industry standards.
- F. Install operating parts so they move freely and smoothly without binding, sticking, or excessive clearance.
- G. Hinges: Install types and in quantities indicated in door hardware schedule but not fewer than quantity recommended by manufacturer for application indicated.
- H. Lock Cylinders:
  1. Install construction cores to secure building and areas during construction period.
  2. Replace construction cores with permanent cores as indicated in keying section.
  3. Furnish permanent cores to Owner for installation.
- I. Wiring: Coordinate with Division 26, ELECTRICAL and Division 28 ELECTRONIC SAFETY AND SECURITY sections for:
  1. Conduit, junction boxes and wire pulls.
  2. Connections to and from power supplies to electrified hardware.
  3. Connections to fire/smoke alarm system and smoke evacuation system.
  4. Connection of wire to door position switches and wire runs to central room or area, as directed by Architect.
  5. Connections to panel interface modules, controllers, and gateways.
  6. Testing and labeling wires with Architect's opening number.
- J. Key Control System: Tag keys and place them on markers and hooks in key control system cabinet, as determined by final keying schedule.
- K. Door Closers: Mount closers on room side of corridor doors, inside of exterior doors, and stair side of stairway doors from corridors. Mount closers so they are not visible in corridors, lobbies and other public spaces unless approved by Architect.
- L. Closer/Holders: Mount closer/holders on room side of corridor doors, inside of exterior doors, and stair side of stairway doors.
- M. Power Supplies: Locate power supplies as indicated or, if not indicated, above accessible ceilings or in equipment room, or alternate location as directed by Architect.

- N. Thresholds: Set thresholds in full bed of sealant complying with requirements specified in Division 07 Section "Joint Sealants."
- O. Stops: Provide floor stops for doors unless wall or other type stops are indicated in door hardware schedule. Do not mount floor stops where they may impede traffic or present tripping hazard.
- P. Perimeter Gasketing: Apply to head and jamb, forming seal between door and frame.
- Q. Meeting Stile Gasketing: Fasten to meeting stiles, forming seal when doors are closed.
- R. Door Bottoms and Sweeps: Apply to bottom of door, forming seal with threshold when door is closed.

### **3.04 FIELD QUALITY CONTROL**

- A. Inspection and Testing:
  - 1. Provide functional testing and inspection of fire door assemblies by a qualified person in accordance with NFPA 80.
    - a. Schedule fire door assembly inspection within 90 days of Substantial Completion of the Project.
    - b. Submit a signed, written final report as specified in Paragraph 1.03.E.1.
    - c. Correct all deficiencies and schedule a reinspection of fire door assemblies noted as deficient on the inspection report.
    - d. Inspector to reinspect fire door assemblies after repairs are made.
  - 2. Provide inspection of required egress door assemblies by a qualified person in accordance with NFPA 101.
    - a. Schedule egress door assembly inspection within 90 days of Substantial Completion of the Project for the required openings.
    - b. Submit a signed, written final report as specified in Paragraph 1.03.E.2.
    - c. Correct all deficiencies and schedule a reinspection of egress door assemblies noted as deficient on the inspection report.
    - d. Inspector to reinspect required egress door assemblies after repairs are made.

### **3.05 ADJUSTING**

- A. Initial Adjustment: Adjust and check each operating item of door hardware and each door to ensure proper operation or function of every unit. Replace units that cannot be adjusted to operate as intended. Adjust door control devices to compensate for final operation of heating and ventilating equipment and to comply with referenced accessibility requirements.
  - 1. Door Closers: Adjust sweep period to comply with accessibility requirements and requirements of authorities having jurisdiction.
- B. Occupancy Adjustment: Approximately three to six months after date of Substantial Completion, examine and readjust each item of door hardware, including adjusting operating forces, as necessary to ensure function of doors and door hardware.

### **3.06 CLEANING AND PROTECTION**

- A. Clean adjacent surfaces soiled by door hardware installation.
- B. Clean operating items per manufacturer's instructions to restore proper function and finish.
- C. Provide final protection and maintain conditions that ensure door hardware is without damage or deterioration at time of Substantial Completion.

### **3.07 DOOR HARDWARE SCHEDULE**

- A. The intent of the hardware specification is to specify the hardware for interior and exterior doors, and to establish a type, continuity, and standard of quality. However, it is the door hardware supplier's responsibility to thoroughly review existing conditions, schedules, specifications, drawings, and other Contract Documents to verify the suitability of the hardware specified.
- B. Discrepancies, conflicting hardware, and missing items are to be brought to the attention of the architect with corrections made prior to the bidding process. Omitted items not included in a

hardware set should be scheduled with the appropriate additional hardware required for proper application.

- C. Hardware items are referenced in the following hardware schedule. Refer to the above specifications for special features, options, cylinders/keying, and other requirements.

- D. Hardware Sets:

Hardware Group No. 01

|   |    |                     |                                        |   |  |         |     |
|---|----|---------------------|----------------------------------------|---|--|---------|-----|
| 2 | EA | CONT. HINGE         | 112HD EPT                              |   |  | 628     | IVE |
| 2 | EA | POWER TRANSFER      | EPT10                                  | ~ |  | 689     | VON |
| 1 | EA | REMOVABLE MULLION   | KR4954 STAB                            |   |  | 689     | VON |
| 1 | EA | ELEC PANIC HARDWARE | CD-RX-LC-33A-EO                        | ~ |  | 626     | VON |
| 1 | EA | ELEC PANIC HARDWARE | RX-LC-QEL-33A-NL-OP-388 24 VDC         | ~ |  | 626     | VON |
| 1 | EA | RIM CYLINDER        | 20-057 ICX                             |   |  | 626     | SCH |
| 2 | EA | SFIC MORTISE CYL.   | 26-091 ICX                             |   |  | 626     | SCH |
|   |    |                     |                                        |   |  |         |     |
| 1 | EA | 90 DEG OFFSET PULL  | 8190EZHD 12" STD                       |   |  | 630-316 | IVE |
| 2 | EA | OH STOP             | 100S                                   |   |  | 630     | GLY |
| 2 | EA | SURFACE CLOSER      | 4050A EDA                              |   |  | 689     | LCN |
| 2 | EA | PA MOUNTING PLATE   | 4050-18PA                              |   |  | 689     | LCN |
| 2 | EA | BLADE STOP SPACER   | 4050-61                                |   |  | 689     | LCN |
| 2 | EA | DOOR SWEEP          | 39A                                    |   |  | A       | ZER |
| 1 | EA | THRESHOLD           | 655A                                   |   |  | A       | ZER |
| 1 | EA | POWER SUPPLY        | PS902 BBK 900-2RS 120/240 VAC          | ~ |  | LGR     | SCE |
| 1 |    |                     | CARD READER - WORK OF DIVISION 28      |   |  |         |     |
| 1 | EA | NOTE                | PROVIDE POINT TO POINT WIRING DIAGRAMS |   |  |         |     |
| 1 | EA | NOTE                | PROVIDE RISER WIRING DIAGRAMS          |   |  |         |     |

DOOR NORMALLY CLOSED AND LOCKED. PRESENTATION OF VALID CREDENTIAL TO RETRACT LATCHBOLT, SHUNT ALARM AND ALLOW ENTRY. FREE EGRESS AT ALL TIMES BY DEPRESSING EXIT DEVICE. DEPRESSING EXIT DEVICE WILL SHUNT ALARM AND ALLOW EGRESS.

Hardware Group No. 02

|   |    |                    |                  |  |  |         |     |
|---|----|--------------------|------------------|--|--|---------|-----|
| 2 | EA | CONT. HINGE        | 112HD            |  |  | 628     | IVE |
| 2 | EA | DUMMY PUSH BAR     | 330              |  |  | 626     | VON |
| 2 | EA | 90 DEG OFFSET PULL | 8190EZHD 12" STD |  |  | 630-316 | IVE |
| 2 | EA | OH STOP            | 100S             |  |  | 630     | GLY |
| 2 | EA | SURFACE CLOSER     | 4050A EDA        |  |  | 689     | LCN |
| 2 | EA | PA MOUNTING PLATE  | 4050-18PA        |  |  | 689     | LCN |



|   |    |                      |         |  |  |     |     |
|---|----|----------------------|---------|--|--|-----|-----|
| 2 | EA | BLADE STOP<br>SPACER | 4050-61 |  |  | 689 | LCN |
| 2 | EA | DOOR SWEEP           | 39A     |  |  | A   | ZER |

Hardware Group No. 03

|   |    |                        |                                           |   |  |         |     |
|---|----|------------------------|-------------------------------------------|---|--|---------|-----|
| 2 | EA | CONT. HINGE            | 112HD EPT                                 |   |  | 628     | IVE |
| 2 | EA | POWER TRANSFER         | EPT10                                     | ~ |  | 689     | VON |
| 1 | EA | REMOVABLE<br>MULLION   | KR4954 STAB                               |   |  | 689     | VON |
| 1 | EA | ELEC PANIC<br>HARDWARE | CD-RX-LC-33A-EO                           | ~ |  | 626     | VON |
| 1 | EA | ELEC PANIC<br>HARDWARE | CD-RX-LC-33A-NL-OP-388                    | ~ |  | 626     | VON |
| 1 | EA | RIM CYLINDER           | 20-057 ICX                                |   |  | 626     | SCH |
| 3 | EA | SFIC MORTISE CYL.      | 26-091 ICX                                |   |  | 626     | SCH |
|   |    |                        |                                           |   |  |         |     |
| 1 | EA | 90 DEG OFFSET<br>PULL  | 8190EZHD 12" STD                          |   |  | 630-316 | IVE |
| 2 | EA | OH STOP                | 100S                                      |   |  | 630     | GLY |
| 2 | EA | SURFACE CLOSER         | 4050A EDA                                 |   |  | 689     | LCN |
| 2 | EA | PA MOUNTING<br>PLATE   | 4050-18PA                                 |   |  | 689     | LCN |
| 2 | EA | BLADE STOP<br>SPACER   | 4050-61                                   |   |  | 689     | LCN |
| 2 | EA | DOOR SWEEP             | 39A                                       |   |  | A       | ZER |
| 1 | EA | THRESHOLD              | 655A                                      |   |  | A       | ZER |
| 1 | EA | NOTE                   | PROVIDE POINT TO<br>POINT WIRING DIAGRAMS |   |  |         |     |
| 1 | EA | NOTE                   | PROVIDE RISER WIRING<br>DIAGRAMS          |   |  |         |     |

DOOR NORMALLY CLOSED AND LOCKED. FREE EGRESS AT ALL TIMES BY DEPRESSING EXIT DEVICE. DEPRESSING EXIT DEVICE WILL SHUNT ALARM AND ALLOW EGRESS.

Hardware Group No. 04

|   |    |                        |                        |   |  |         |     |
|---|----|------------------------|------------------------|---|--|---------|-----|
| 2 | EA | CONT. HINGE            | 112HD EPT              |   |  | 628     | IVE |
| 2 | EA | POWER TRANSFER         | EPT10                  | ~ |  | 689     | VON |
| 1 | EA | ELEC PANIC<br>HARDWARE | CD-RX-LC-33A-NL-OP-388 | ~ |  | 626     | VON |
| 1 | EA | RIM CYLINDER           | 20-057 ICX             |   |  | 626     | SCH |
| 1 | EA | SFIC MORTISE CYL.      | 26-091 ICX             |   |  | 626     | SCH |
|   |    |                        |                        |   |  |         |     |
| 1 | EA | ELECTRIC STRIKE        | 6300 FSE 12/24 VAC/VDC | ~ |  | 630     | VON |
| 1 | EA | 90 DEG OFFSET<br>PULL  | 8190EZHD 12" STD       |   |  | 630-316 | IVE |
| 1 | EA | OH STOP                | 100S                   |   |  | 630     | GLY |
| 1 | EA | SURFACE CLOSER         | 4050A EDA              |   |  | 689     | LCN |
| 1 | EA | PA MOUNTING<br>PLATE   | 4050-18PA              |   |  | 689     | LCN |

|   |    |                      |                                           |   |  |     |     |
|---|----|----------------------|-------------------------------------------|---|--|-----|-----|
| 1 | EA | BLADE STOP<br>SPACER | 4050-61                                   |   |  | 689 | LCN |
| 1 | EA | DOOR SWEEP           | 39A                                       |   |  | A   | ZER |
| 1 | EA | THRESHOLD            | 655A                                      |   |  | A   | ZER |
| 1 | EA | POWER SUPPLY         | PS902 BBK 900-2RS<br>120/240 VAC          | ~ |  | LGR | SCE |
| 1 |    |                      | CARD READER - WORK<br>OF DIVISION 28      |   |  |     |     |
| 1 | EA | NOTE                 | PROVIDE POINT TO<br>POINT WIRING DIAGRAMS |   |  |     |     |
| 1 | EA | NOTE                 | PROVIDE RISER WIRING<br>DIAGRAMS          |   |  |     |     |

DOOR NORMALLY CLOSED AND LOCKED. PRESENTATION OF VALID CREDENTIAL TO RELEASE ELECTRIC STRIKE, SHUNT ALARM AND ALLOW ENTRY. FREE EGRESS AT ALL TIMES BY DEPRESSING EXIT DEVICE. DEPRESSING EXIT DEVICE WILL SHUNT ALARM AND ALLOW EGRESS.

Hardware Group No. 05

|   |     |                        |                        |  |  |     |     |
|---|-----|------------------------|------------------------|--|--|-----|-----|
| 2 | EA  | CONT. HINGE            | 224HD                  |  |  | 628 | IVE |
| 1 | SET | CONST LATCHING<br>BOLT | FB51P                  |  |  | 630 | IVE |
| 1 | EA  | DUST PROOF<br>STRIKE   | DP2                    |  |  | 626 | IVE |
| 1 | EA  | DBL CYL STORE<br>LOCK  | ND66TD RHO             |  |  | 626 | SCH |
| 1 | EA  | OH STOP                | 90S                    |  |  | 630 | GLY |
| 1 | EA  | SURFACE CLOSER         | 4050A SCUSH            |  |  | 689 | LCN |
| 2 | EA  | KICK PLATE             | 8400 10" X 1" LDW B-CS |  |  | 630 | IVE |
| 1 | SET | GASKETING              | 328AA-S                |  |  | AA  | ZER |
| 2 | EA  | MEETING STILE          | 155AA                  |  |  | AA  | ZER |
| 1 | EA  | DOOR SWEEP             | 39A                    |  |  | A   | ZER |
| 1 | EA  | THRESHOLD              | 655A                   |  |  | A   | ZER |

Hardware Group No. 06

|   |    |                       |                      |  |  |     |     |
|---|----|-----------------------|----------------------|--|--|-----|-----|
| 3 | EA | HINGE                 | 5BB1HW 4.5 X 4.5 NRP |  |  | 652 | IVE |
| 1 | EA | CLASSROOM<br>SECURITY | ND75TD RHO XN12-035  |  |  | 626 | SCH |
| 1 | EA | WALL STOP             | WS406/407CCV         |  |  | 630 | IVE |
| 1 | EA | GASKETING             | 488SBK PSA           |  |  | BK  | ZER |

Hardware Group No. 07

|   |    |                       |                        |  |  |     |     |
|---|----|-----------------------|------------------------|--|--|-----|-----|
| 3 | EA | HINGE                 | 5BB1HW 4.5 X<br>4.5    |  |  | 652 | IVE |
| 1 | EA | CLASSROOM<br>SECURITY | ND75TD RHO<br>XN12-035 |  |  | 626 | SCH |
| 1 | EA | SURFACE<br>CLOSER     | 4050A RW/PA            |  |  | 689 | LCN |

|   |    |            |                            |  |  |     |     |
|---|----|------------|----------------------------|--|--|-----|-----|
| 1 | EA | KICK PLATE | 8400 10" X 1 1/2" LDW B-CS |  |  | 630 | IVE |
| 1 | EA | WALL STOP  | WS406/407CCV               |  |  | 630 | IVE |
| 1 | EA | GASKETING  | 488SBK PSA                 |  |  | BK  | ZER |

Hardware Group No. 08

|   |    |                    |                            |  |  |     |     |
|---|----|--------------------|----------------------------|--|--|-----|-----|
| 3 | EA | HINGE              | 5BB1HW 4.5 X 4.5           |  |  | 652 | IVE |
| 1 | EA | CLASSROOM SECURITY | ND75TD RHO XN12-035        |  |  | 626 | SCH |
|   |    |                    |                            |  |  |     |     |
| 1 | EA | OH STOP            | 100S                       |  |  | 630 | GLY |
| 1 | EA | SURFACE CLOSER     | 4050A RW/PA ST-5003        |  |  | 689 | LCN |
| 1 | EA | MOUNTING PLATE     | 4050-18                    |  |  | 689 | LCN |
| 1 | EA | KICK PLATE         | 8400 10" X 1 1/2" LDW B-CS |  |  | 630 | IVE |
| 1 | EA | GASKETING          | 488SBK PSA                 |  |  | BK  | ZER |

Hardware Group No. 09

|   |    |                    |                            |  |  |     |     |
|---|----|--------------------|----------------------------|--|--|-----|-----|
| 3 | EA | HINGE              | 5BB1HW 4.5 X 4.5 NRP       |  |  | 652 | IVE |
| 1 | EA | CLASSROOM SECURITY | ND75TD RHO XN12-035        |  |  | 626 | SCH |
|   |    |                    |                            |  |  |     |     |
| 1 | EA | SURFACE CLOSER     | 4050A EDA                  |  |  | 689 | LCN |
| 1 | EA | KICK PLATE         | 8400 10" X 1 1/2" LDW B-CS |  |  | 630 | IVE |
| 1 | EA | WALL STOP          | WS406/407CCV               |  |  | 630 | IVE |
| 1 | EA | GASKETING          | 488SBK PSA                 |  |  | BK  | ZER |

Hardware Group No. 10

|   |    |                  |                               |  |  |     |     |
|---|----|------------------|-------------------------------|--|--|-----|-----|
| 3 | EA | HINGE            | 5BB1HW 4.5 X 4.5              |  |  | 652 | IVE |
| 1 | EA | FACULTY RESTROOM | L9485T 06A 09-544<br>L283-722 |  |  | 626 | SCH |
|   |    |                  |                               |  |  |     |     |
| 1 | EA | OH STOP          | 100S                          |  |  | 630 | GLY |
| 1 | EA | SURFACE CLOSER   | 4050A RW/PA ST-5003           |  |  | 689 | LCN |
| 1 | EA | MOUNTING PLATE   | 4050-18                       |  |  | 689 | LCN |
| 1 | EA | KICK PLATE       | 8400 10" X 1 1/2" LDW B-CS    |  |  | 630 | IVE |
| 1 | EA | GASKETING        | 488SBK PSA                    |  |  | BK  | ZER |

Hardware Group No. 11

|   |    |                  |                               |  |  |     |     |
|---|----|------------------|-------------------------------|--|--|-----|-----|
| 3 | EA | HINGE            | 5BB1HW 4.5 X 4.5              |  |  | 652 | IVE |
| 1 | EA | FACULTY RESTROOM | L9485T 06A 09-544<br>L283-722 |  |  | 626 | SCH |
|   |    |                  |                               |  |  |     |     |
| 1 | EA | SURFACE CLOSER   | 4050A RW/PA                   |  |  | 689 | LCN |
| 1 | EA | KICK PLATE       | 8400 10" X 1 1/2" LDW B-CS    |  |  | 630 | IVE |
| 1 | EA | WALL STOP        | WS406/407CCV                  |  |  | 630 | IVE |
| 1 | EA | GASKETING        | 488SBK PSA                    |  |  | BK  | ZER |

E. Hardware Group No. 12

|   |    |                |                      |  |  |     |     |
|---|----|----------------|----------------------|--|--|-----|-----|
| 3 | EA | HINGE          | 5BB1HW 4.5 X 4.5 NRP |  |  | 652 | IVE |
| 1 | EA | STOREROOM LOCK | ND80TD RHO           |  |  | 626 | SCH |
|   |    |                |                      |  |  |     |     |

|   |    |                |                            |  |  |     |     |
|---|----|----------------|----------------------------|--|--|-----|-----|
| 1 | EA | SURFACE CLOSER | 4050A CUSH                 |  |  | 689 | LCN |
| 1 | EA | KICK PLATE     | 8400 10" X 1 1/2" LDW B-CS |  |  | 630 | IVE |
| 3 | EA | SILENCER       | SR64                       |  |  | GRY | IVE |

Hardware Group No. 13

|   |    |                     |                            |  |  |     |     |
|---|----|---------------------|----------------------------|--|--|-----|-----|
| 3 | EA | HINGE               | 5BB1HW 4.5 X 4.5 NRP       |  |  | 652 | IVE |
| 1 | EA | CLASSROOM DEAD LOCK | L463T                      |  |  | 626 | SCH |
| 1 | EA | STOREROOM LOCK      | ND80TD RHO                 |  |  | 626 | SCH |
|   |    |                     |                            |  |  |     |     |
| 1 | EA | SURFACE CLOSER      | 4050A CUSH                 |  |  | 689 | LCN |
| 1 | EA | KICK PLATE          | 8400 10" X 1 1/2" LDW B-CS |  |  | 630 | IVE |
| 3 | EA | SILENCER            | SR64                       |  |  | GRY | IVE |

F. Hardware Group No. 14

|   |    |                |                            |  |  |     |     |
|---|----|----------------|----------------------------|--|--|-----|-----|
| 3 | EA | HINGE          | 5BB1HW 4.5 X 4.5 NRP       |  |  | 652 | IVE |
| 1 | EA | STOREROOM LOCK | ND80TD RHO                 |  |  | 626 | SCH |
|   |    |                |                            |  |  |     |     |
| 1 | EA | SURFACE CLOSER | 4050A CUSH                 |  |  | 689 | LCN |
| 1 | EA | KICK PLATE     | 8400 10" X 1 1/2" LDW B-CS |  |  | 630 | IVE |
| 3 | EA | SILENCER       | SR64                       |  |  | GRY | IVE |

Hardware Group No. 15

|   |    |                |                            |  |  |     |     |
|---|----|----------------|----------------------------|--|--|-----|-----|
| 3 | EA | HINGE          | 5BB1HW 4.5 X 4.5           |  |  | 652 | IVE |
| 1 | EA | STOREROOM LOCK | ND80TD RHO                 |  |  | 626 | SCH |
| 1 |    |                |                            |  |  |     |     |
| 1 | EA | SURFACE CLOSER | 4050A RW/PA                |  |  | 689 | LCN |
| 1 | EA | KICK PLATE     | 8400 10" X 1 1/2" LDW B-CS |  |  | 630 | IVE |
| 1 | EA | WALL STOP      | WS406/407CCV               |  |  | 630 | IVE |
| 3 | EA | SILENCER       | SR64                       |  |  | GRY | IVE |

Hardware Group No. 16

|   |    |                     |                            |  |  |     |     |
|---|----|---------------------|----------------------------|--|--|-----|-----|
| 3 | EA | HINGE               | 5BB1HW 4.5 X 4.5 NRP       |  |  | 652 | IVE |
| 1 | EA | PRIVACY W/COIN TURN | L9044 06A 09-544 L283-722  |  |  | 626 | SCH |
| 1 | EA | KICK PLATE          | 8400 10" X 1 1/2" LDW B-CS |  |  | 630 | IVE |
| 1 | EA | WALL STOP           | WS406/407CCV               |  |  | 630 | IVE |
| 1 | EA | GASKETING           | 488SBK PSA                 |  |  | BK  | ZER |

Hardware Group No. 17

|   |    |                     |                           |  |  |     |     |
|---|----|---------------------|---------------------------|--|--|-----|-----|
| 3 | EA | HINGE               | 5BB1HW 4.5 X 4.5 NRP      |  |  | 652 | IVE |
| 1 | EA | PRIVACY W/COIN TURN | L9044 06A 09-544 L283-722 |  |  | 626 | SCH |
| 1 | EA | OH STOP             | 100S                      |  |  | 630 | GLY |
| 1 | EA | KICK PLATE          | 8400 10" X                |  |  | 630 | IVE |

|   |    |           |                    |  |  |    |     |
|---|----|-----------|--------------------|--|--|----|-----|
|   |    |           | 1 1/2"<br>LDW B-CS |  |  |    |     |
| 1 | EA | GASKETING | 488SBK<br>PSA      |  |  | BK | ZER |

Hardware Group No. 18

|   |    |                |                            |  |  |     |     |
|---|----|----------------|----------------------------|--|--|-----|-----|
| 3 | EA | HINGE          | 5BB1HW 4.5 X 4.5 NRP       |  |  | 652 | IVE |
| 1 | EA | PRIVACY LOCK   | L9040 06A 09-544 L283-722  |  |  | 626 | SCH |
| 1 | EA | SURFACE CLOSER | 4050A RW/PA                |  |  | 689 | LCN |
| 1 | EA | KICK PLATE     | 8400 10" X 1 1/2" LDW B-CS |  |  | 630 | IVE |
| 1 | EA | WALL STOP      | WS406/407CCV               |  |  | 630 | IVE |
| 1 | EA | GASKETING      | 488SBK PSA                 |  |  | BK  | ZER |

Hardware Group No. 19

|   |    |                         |                     |  |  |     |     |
|---|----|-------------------------|---------------------|--|--|-----|-----|
| 3 | EA | HINGE                   | 5BB1HW 4.5 X<br>4.5 |  |  | 652 | IVE |
| 1 | EA | ENTRANCE/OFFICE<br>LOCK | ND50TD RHO          |  |  | 626 | SCH |
|   |    |                         |                     |  |  |     |     |
| 1 | EA | WALL STOP               | WS406/407CCV        |  |  | 630 | IVE |
| 1 | EA | GASKETING               | 488SBK PSA          |  |  | BK  | ZER |

Hardware Group No. 20

|   |    |                |                     |  |  |     |     |
|---|----|----------------|---------------------|--|--|-----|-----|
| 3 | EA | HINGE          | 5BB1HW 4.5 X<br>4.5 |  |  | 652 | IVE |
| 1 | EA | PASSAGE<br>SET | ND10S RHO           |  |  | 626 | SCH |
| 1 | EA | WALL STOP      | WS406/407CCV        |  |  | 630 | IVE |
| 1 | EA | GASKETING      | 488SBK PSA          |  |  | BK  | ZER |

Hardware Group No. 21

|   |    |                   |                  |  |  |     |         |
|---|----|-------------------|------------------|--|--|-----|---------|
| 3 | EA | HINGE             | 5BB1HW 4.5 X 4.5 |  |  | 652 | IVE     |
| 1 | EA | CLASSROOM<br>LOCK | ND70TD RHO       |  |  | 626 | SCH     |
|   |    |                   |                  |  |  |     |         |
| 1 | EA | WALL STOP         | WS406/407CCV     |  |  | 630 | IVE     |
| 3 | EA | SILENCER          | SR64             |  |  |     | GRY IVE |

Hardware Group No. 22

|   |    |                   |                               |  |  |     |     |
|---|----|-------------------|-------------------------------|--|--|-----|-----|
| 3 | EA | HINGE             | 5BB1HW 4.5 X<br>4.5 NRP       |  |  | 652 | IVE |
| 1 | EA | CLASSROOM<br>LOCK | ND70TD RHO                    |  |  | 626 | SCH |
|   |    |                   |                               |  |  |     |     |
| 1 | EA | SURFACE<br>CLOSER | 4050A EDA                     |  |  | 689 | LCN |
| 1 | EA | KICK PLATE        | 8400 10" X 1<br>1/2" LDW B-CS |  |  | 630 | IVE |
| 1 | EA | WALL STOP         | WS406/407CCV                  |  |  | 630 | IVE |
| 1 | EA | GASKETING         | 488SBK PSA                    |  |  | BK  | ZER |

Hardware Group No. 23

|   |    |          |                                                   |  |  |     |     |
|---|----|----------|---------------------------------------------------|--|--|-----|-----|
| 1 | EA | CYLINDER | IC CYLINDER AS<br>REQUIRED                        |  |  | 619 | SCH |
|   |    |          |                                                   |  |  |     |     |
| 1 |    |          | BALANCE OF<br>HARDWARE BY<br>DOOR<br>MANUFACTURER |  |  |     |     |

Hardware Group No. 24

|   |    |                         |                           |  |  |     |     |
|---|----|-------------------------|---------------------------|--|--|-----|-----|
| 2 | EA | CONT.<br>HINGE          | 224XY                     |  |  | 628 | IVE |
| 1 | EA | REMOVABLE<br>MULLION    | KR4954 STAB               |  |  | 689 | VON |
| 2 | EA | FIRE EXIT<br>HARDWARE   | 99-L-F-2SI-06             |  |  | 626 | VON |
| 2 | EA | RIM<br>CYLINDER         | 20-057 ICX                |  |  | 626 | SCH |
| 3 | EA | SFIC<br>MORTISE<br>CYL. | 26-091 ICX                |  |  | 626 | SCH |
|   |    |                         |                           |  |  |     |     |
| 2 | EA | SURFACE<br>CLOSER       | 4050A EDA                 |  |  | 689 | LCN |
| 2 | EA | KICK PLATE              | 8400 10" X 1"<br>LDW B-CS |  |  | 630 | IVE |
| 2 | EA | WALL STOP               | WS406/407CCV              |  |  | 630 | IVE |
| 1 | EA | GASKETING               | 488SBK PSA                |  |  | BK  | ZER |
| 1 | EA | ASTRAGAL                | 8193AA                    |  |  | AA  | ZER |

Hardware Group No. 25

|   |    |                         |                                        |   |  |     |     |
|---|----|-------------------------|----------------------------------------|---|--|-----|-----|
| 2 | EA | CONT.<br>HINGE          | 224XY                                  |   |  | 628 | IVE |
| 1 | EA | REMOVABLE<br>MULLION    | KR4954<br>STAB                         |   |  | 689 | VON |
| 2 | EA | FIRE EXIT<br>HARDWARE   | 99-L-<br>F-2SI-06                      |   |  | 626 | VON |
| 2 | EA | RIM<br>CYLINDER         | 20-057 ICX                             |   |  | 626 | SCH |
| 3 | EA | SFIC<br>MORTISE<br>CYL. | 26-091 ICX                             |   |  | 626 | SCH |
| 5 | EA |                         |                                        |   |  |     |     |
| 1 | EA | FIRE/LIFE<br>HOLDER     | 4040SEH<br>24V/120V<br>AC/DC AS<br>REQ | ~ |  | 689 | LCN |
| 1 | EA | SURFACE<br>CLOSER       | 4050A EDA                              |   |  | 689 | LCN |
| 1 | EA | SURFACE<br>CLOSER       | 4050A<br>SCUSH                         |   |  | 689 | LCN |

|   |    |                    |                                             |  |  |     |     |
|---|----|--------------------|---------------------------------------------|--|--|-----|-----|
| 2 | EA | PA MOUNTING PLATE  | 4050-18PA                                   |  |  | 689 | LCN |
| 1 | EA | CUSH SHOE SUPPORT  | 4050-30                                     |  |  | 689 | LCN |
| 2 | EA | BLADE STOP SPACER  | 4050-61                                     |  |  | 689 | LCN |
| 2 | EA | KICK PLATE         | 8400 10" X 1" LDW B-CS                      |  |  | 630 | IVE |
| 1 | EA | FIRE/LIFE WALL MAG | SEM7850 AS REQ (12/24/120V~ AC/DC TRI-VOLT) |  |  | 689 | LCN |
| 1 | EA | GASKETING          | 488SBK PSA                                  |  |  | BK  | ZER |
| 1 | EA | ASTRAGAL           | 8193AA                                      |  |  | AA  | ZER |

Hardware Group No. 26

|   |    |                    |                                            |   |  |     |     |
|---|----|--------------------|--------------------------------------------|---|--|-----|-----|
| 2 | EA | CONT. HINGE        | 224XY                                      |   |  | 628 | IVE |
| 1 | EA | REMOVABLE MULLION  | KR4954 STAB                                |   |  | 689 | VON |
| 2 | EA | FIRE EXIT HARDWARE | 99-L-F-2SI-06                              |   |  | 626 | VON |
| 2 | EA | RIM CYLINDER       | 20-057 ICX                                 |   |  | 626 | SCH |
| 3 | EA | SFIC MORTISE CYL.  | 26-091 ICX                                 |   |  | 626 | SCH |
|   |    |                    |                                            |   |  |     |     |
| 1 | EA | FIRE/LIFE HOLDER   | 4040SEH 24V/120V AC/DC AS REQ              | ~ |  | 689 | LCN |
| 1 | EA | SURFACE CLOSER     | 4050A EDA                                  |   |  | 689 | LCN |
| 1 | EA | SURFACE CLOSER     | 4050A SCUSH                                |   |  | 689 | LCN |
| 1 | EA | CUSH SHOE SUPPORT  | 4050-30                                    |   |  | 689 | LCN |
| 2 | EA | BLADE STOP SPACER  | 4050-61                                    |   |  | 689 | LCN |
| 1 | EA | FIRE/LIFE WALL MAG | SEM7850 AS REQ (12/24/120V AC/DC TRI-VOLT) | ~ |  | 689 | LCN |

Hardware Group No. 27

|   |    |                    |               |  |  |     |     |
|---|----|--------------------|---------------|--|--|-----|-----|
| 2 | EA | CONT. HINGE        | 224XY         |  |  | 628 | IVE |
| 1 | EA | REMOVABLE MULLION  | KR4954 STAB   |  |  | 689 | VON |
| 2 | EA | FIRE EXIT HARDWARE | 99-L-F-2SI-06 |  |  | 626 | VON |
| 2 | EA | RIM CYLINDER       | 20-057 ICX    |  |  | 626 | SCH |

|   |    |                   |            |  |  |     |     |
|---|----|-------------------|------------|--|--|-----|-----|
| 3 | EA | SFIC MORTISE CYL. | 26-091 ICX |  |  | 626 | SCH |
| 2 | EA | SURFACE CLOSER    | 4050A HEDA |  |  | 689 | LCN |
| 2 | EA | BLADE STOP SPACER | 4050-61    |  |  | 689 | LCN |

G. Hardware Group No. 28

|   |     |                     |                        |  |  |     |     |
|---|-----|---------------------|------------------------|--|--|-----|-----|
| 6 | EA  | HINGE               | 5BB1HW 4.5 X 4.5       |  |  | 652 | IVE |
| 1 | SET | CONST LATCHING BOLT | FB51P                  |  |  | 630 | IVE |
| 1 | EA  | DUST PROOF STRIKE   | DP2                    |  |  | 626 | IVE |
| 1 | EA  | STOREROOM LOCK      | ND80TD RHO             |  |  | 626 | SCH |
| 2 | EA  | OH STOP             | 100S                   |  |  | 630 | GLY |
| 2 | EA  | SURFACE CLOSER      | 4050A RW/PA ST-5003    |  |  | 689 | LCN |
| 2 | EA  | MOUNTING PLATE      | 4050-18                |  |  | 689 | LCN |
| 2 | EA  | KICK PLATE          | 8400 10" X 1" LDW B-CS |  |  | 630 | IVE |
| 1 | EA  | GASKETING           | 488SBK PSA             |  |  | BK  | ZER |
| 1 | EA  | ASTRAGAL            | 8193AA                 |  |  | AA  | ZER |

Hardware Group No. 29

|   |    |                   |                      |  |  |     |     |
|---|----|-------------------|----------------------|--|--|-----|-----|
| 6 | EA | HINGE             | 5BB1HW 4.5 X 4.5 NRP |  |  | 652 | IVE |
| 1 | EA | MANUAL FLUSH BOLT | FB458                |  |  | 626 | IVE |
| 1 | EA | DUST PROOF STRIKE | DP2                  |  |  | 626 | IVE |
| 1 | EA | CLASSROOM LOCK    | ND70TD RHO           |  |  | 626 | SCH |
| 2 | EA | OH STOP           | 90S                  |  |  | 630 | GLY |
| 2 | EA | SILENCER          | SR64                 |  |  | GRY | IVE |

Hardware Group No. 30

|   |    |                    |                           |   |  |     |     |
|---|----|--------------------|---------------------------|---|--|-----|-----|
| 2 | EA | CONT. HINGE        | 224XY                     |   |  | 628 | IVE |
| 2 | EA | FIRE EXIT HARDWARE | 9927-L-BE-F-LBRAF-06-499F |   |  | 626 | VON |
| 2 | EA | SURFACE CLOSER     | 4050A EDA                 |   |  | 689 | LCN |
| 2 | EA | KICK PLATE         | 8400 10" X 1" LDW B-CS    |   |  | 630 | IVE |
| 2 | EA | WALL STOP          | WS406/407CCV              |   |  | 630 | IVE |
| 2 | EA | FIRE/LIFE          | SEM7850 AS                | ~ |  | 689 | LCN |



|   |    |           |                                           |  |  |    |     |
|---|----|-----------|-------------------------------------------|--|--|----|-----|
|   |    | WALL MAG  | REQ<br>(12/24/120V<br>AC/DC TRI-<br>VOLT) |  |  |    |     |
| 1 | EA | GASKETING | 488SBK PSA                                |  |  | BK | ZER |
| 1 | EA | ASTRAGAL  | 8193AA                                    |  |  | AA | ZER |

Hardware Group No. 31

|   |    |                       |                                               |   |  |     |     |
|---|----|-----------------------|-----------------------------------------------|---|--|-----|-----|
| 1 | EA | CONT. HINGE           | 224XY                                         |   |  | 628 | IVE |
| 2 | EA | FIRE EXIT<br>HARDWARE | 99-L-BE-F-06                                  |   |  | 626 | VON |
| 2 | EA | SURFACE<br>CLOSER     | 4050A EDA                                     |   |  | 689 | LCN |
| 2 | EA | KICK PLATE            | 8400 10" X 1" LDW B-CS                        |   |  | 630 | IVE |
| 2 | EA | WALL STOP             | WS406/407CCV                                  |   |  | 630 | IVE |
| 2 | EA | FIRE/LIFE WALL<br>MAG | SEM7850 AS REQ (12/24/120V<br>AC/DC TRI-VOLT) | ~ |  | 689 | LCN |
| 1 | EA | GASKETING             | 488SBK PSA                                    |   |  | BK  | ZER |

**HARDWARE GROUP NO. 32**

|   |    |                         |           |  |  |     |     |
|---|----|-------------------------|-----------|--|--|-----|-----|
| 2 | EA | CONT.<br>HINGE          | 224XY     |  |  | 628 | IVE |
| 2 | EA | MANUAL<br>FLUSH BOLT    | FB458     |  |  | 626 | IVE |
| 1 | EA | DUST<br>PROOF<br>STRIKE | DP2       |  |  | 626 | IVE |
| 1 | EA | CLASSROOM<br>DEAD LOCK  | L463T     |  |  | 626 | SCH |
|   |    |                         |           |  |  |     |     |
| 2 | EA | RECESSED<br>PULL        | 94P X 94L |  |  | 630 | ROC |
| 2 | EA | OH STOP                 | 100S      |  |  | 630 | GLY |
| 2 | EA | SILENCER                | SR64      |  |  | GRY | IVE |

Hardware Group No. 33

|   |    |                      |                            |  |  |     |     |
|---|----|----------------------|----------------------------|--|--|-----|-----|
| 1 | EA | CONT. HINGE          | 224XY                      |  |  | 628 | IVE |
| 2 | EA | PANIC<br>HARDWARE    | 99-L-2SI-06                |  |  | 626 | VON |
| 1 | EA | RIM CYLINDER         | 20-057 ICX                 |  |  | 626 | SCH |
| 1 | EA | SFIC MORTISE<br>CYL. | 26-091 ICX                 |  |  | 626 | SCH |
|   |    |                      |                            |  |  |     |     |
| 1 | EA | SURFACE<br>CLOSER    | 4050A EDA                  |  |  | 689 | LCN |
| 1 | EA | KICK PLATE           | 8400 10" X 1 1/2" LDW B-CS |  |  | 630 | IVE |
| 2 | EA | WALL STOP            | WS406/407CCV               |  |  | 630 | IVE |
| 2 | EA | GASKETING            | 488SBK PSA                 |  |  | BK  | ZER |
| 1 | EA | DOOR BOTTOM          | 350AA                      |  |  | AA  | ZER |

Hardware Group No. 34

|   |    |                      |                        |  |  |     |     |
|---|----|----------------------|------------------------|--|--|-----|-----|
| 2 | EA | CONT. HINGE          | 224XY                  |  |  | 628 | IVE |
| 2 | EA | PANIC<br>HARDWARE    | CDSI-9927-L-NL-LBR-06  |  |  | 626 | VON |
| 2 | EA | RIM CYLINDER         | 20-057 ICX             |  |  | 626 | SCH |
| 2 | EA | SFIC MORTISE<br>CYL. | 26-091 ICX             |  |  | 626 | SCH |
|   |    |                      |                        |  |  |     |     |
| 2 | EA | SURFACE<br>CLOSER    | 4050A EDA              |  |  | 689 | LCN |
| 2 | EA | KICK PLATE           | 8400 10" X 1" LDW B-CS |  |  | 630 | IVE |
| 2 | EA | WALL STOP            | WS406/407CCV           |  |  | 630 | IVE |
| 2 | EA | GASKETING            | 488SBK PSA             |  |  | BK  | ZER |
| 1 | EA | ASTRAGAL             | 8193AA                 |  |  | AA  | ZER |
| 2 | EA | DOOR BOTTOM          | 350AA                  |  |  | AA  | ZER |

Hardware Group No. 35

|   |    |                       |           |  |  |     |     |
|---|----|-----------------------|-----------|--|--|-----|-----|
| 1 | EA | SLIDING DOOR<br>TRACK | 100SD     |  |  | AL  | JOH |
| 4 | EA | RECESSED PULL         | 94P X 94L |  |  | 630 | ROC |

Hardware Group No. 36

|   |    |                   |                               |  |  |     |     |
|---|----|-------------------|-------------------------------|--|--|-----|-----|
| 1 | EA | CONT.<br>HINGE    | 224HD                         |  |  | 628 | IVE |
| 1 | EA | PUSH<br>PLATE     | 8200 4" X 16"                 |  |  | 630 | IVE |
| 1 | EA | PULL<br>PLATE     | 8302 8" 4" X 16"              |  |  | 630 | IVE |
| 1 | EA | SURFACE<br>CLOSER | 4050A RW/PA                   |  |  | 689 | LCN |
| 1 | EA | KICK PLATE        | 8400 10" X 1<br>1/2" LDW B-CS |  |  | 630 | IVE |
| 1 | EA | WALL STOP         | WS406/407CCV                  |  |  | 630 | IVE |
| 1 | EA | GASKETING         | 488SBK PSA                    |  |  | BK  | ZER |

Hardware Group No. 37

|   |    |                      |                            |  |  |     |     |
|---|----|----------------------|----------------------------|--|--|-----|-----|
| 1 | EA | CONT. HINGE          | 224XY                      |  |  | 628 | IVE |
| 2 | EA | PANIC HARDWARE       | 99-L-2SI-06                |  |  | 626 | VON |
| 1 | EA | RIM CYLINDER         | 20-057 ICX                 |  |  | 626 | SCH |
| 1 | EA | SFIC MORTISE<br>CYL. | 26-091 ICX                 |  |  | 626 | SCH |
|   |    |                      |                            |  |  |     |     |
| 1 | EA | SURFACE CLOSER       | 4050A EDA                  |  |  | 689 | LCN |
| 1 | EA | KICK PLATE           | 8400 10" X 1 1/2" LDW B-CS |  |  | 630 | IVE |
| 2 | EA | WALL STOP            | WS406/407CCV               |  |  | 630 | IVE |
| 2 | EA | GASKETING            | 488SBK PSA                 |  |  | BK  | ZER |
| 1 | EA | DOOR BOTTOM          | 350AA                      |  |  | AA  | ZER |

**END OF SECTION**

## **SECTION 08 8000 GLAZING**

### **PART 1 GENERAL**

#### **1.01 SECTION INCLUDES**

- A. Insulating glass units.
- B. Glazing units.

#### **1.02 RELATED REQUIREMENTS**

- A. Section 07 9200 - Joint Sealants: Sealants for other than glazing purposes.
- B. Section 08 1213 - Hollow Metal Frames: Glazed borrowed lites.
- C. Section 08 1416 - Flush Wood Doors: Glazed lites in doors.
- D. Section 08 4313 - Aluminum-Framed Storefronts: Glazing furnished as part of storefront assembly.
- E. Section 08 5113 - Aluminum Windows: Glazing furnished by window manufacturer.
- F. Section 08 8300 - Mirrors.
- G. Section 08 8723 - Safety and Security Films.

#### **1.03 REFERENCE STANDARDS**

- A. 16 CFR 1201 - Safety Standard for Architectural Glazing Materials Current Edition.
- B. ANSI Z97.1 - American National Standard for Safety Glazing Materials Used in Buildings - Safety Performance Specifications and Methods of Test 2015 (Reaffirmed 2020).
- C. ASCE 7 - Minimum Design Loads and Associated Criteria for Buildings and Other Structures Most Recent Edition Cited by Referring Code or Reference Standard.
- D. ASTM C1036 - Standard Specification for Flat Glass 2021.
- E. ASTM C1048 - Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass 2018.
- F. ASTM C1193 - Standard Guide for Use of Joint Sealants 2016.
- G. ASTM C1376 - Standard Specification for Pyrolytic and Vacuum Deposition Coatings on Flat Glass 2021a.
- H. ASTM E1300 - Standard Practice for Determining Load Resistance of Glass in Buildings 2016.
- I. ASTM E2190 - Standard Specification for Insulating Glass Unit Performance and Evaluation 2019.
- J. GANA (GM) - GANA Glazing Manual 2008.
- K. GANA (SM) - GANA Sealant Manual 2008.
- L. NFRC 100 - Procedure for Determining Fenestration Product U-factors 2020.
- M. NFRC 200 - Procedure for Determining Fenestration Product Solar Heat Gain Coefficient and Visible Transmittance at Normal Incidence 2020.
- N. NFRC 300 - Test Method for Determining the Solar Optical Properties of Glazing Materials and Systems 2017.

#### **1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data on Insulating Glass Unit and Glazing Unit Glazing Types: Provide structural, physical and environmental characteristics, size limitations, special handling and installation requirements.
- C. Product Data on Glazing Compounds and Accessories: Provide chemical, functional, and environmental characteristics, limitations, special application requirements, and identify available colors.

- D. Certificate: Certify that products of this section meet or exceed specified requirements.
- E. Manufacturer's qualification statement.
- F. Installer's qualification statement.
- G. Warranty Documentation: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.
- H. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
  - 1. See Section 01 6000 - Product Requirements, for additional provisions.
  - 2. Extra Insulating Glass Units: One of each glass size and each glass type.

## **1.05 QUALITY ASSURANCE**

- A. Perform Work in accordance with GANA (GM) for glazing installation methods.
- B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of documented experience.
  - 1. Provide certified glass products through ANSI accredited certifications that include plant audits and independent laboratory performance testing.
- C. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years documented experience.
  - 1. Provide company, field supervisors, and installers that hold active ANSI accredited certifications in appropriate categories for work specified.
    - a. North American Contractor Certification (NACC) for glazing contractors.
    - b. Equivalent independent third-party ANSI accredited certification.

## **1.06 WARRANTY**

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.
- B. Insulating Glass Units: Provide a five (5) year manufacturer warranty to include coverage for seal failure, interpane dusting or misting, including providing products to replace failed units.

## **PART 2 PRODUCTS**

### **2.01 MANUFACTURERS**

- A. Float Glass Manufacturers:
  - 1. Cardinal Glass Industries: [www.cardinalcorp.com/#sle](http://www.cardinalcorp.com/#sle).
  - 2. Guardian Glass, LLC: [www.guardianglass.com/#sle](http://www.guardianglass.com/#sle).
  - 3. Pilkington North America Inc: [www.pilkington.com/na/#sle](http://www.pilkington.com/na/#sle).
- B. Laminated Glass Manufacturers:
  - 1. Cardinal Glass Industries: [www.cardinalcorp.com/#sle](http://www.cardinalcorp.com/#sle).
- C. Fire-Resistance-Rated Glass: Provide products as required to achieve indicated fire-rating period.
  - 1. Manufacturers:
    - a. SAFTIFIRST, a division of O'Keeffe's Inc; SuperLite II-XL: [www.safti.com/#sle](http://www.safti.com/#sle).

### **2.02 PERFORMANCE REQUIREMENTS - EXTERIOR GLAZING ASSEMBLIES**

- A. Provide type and thickness of exterior glazing assemblies to support assembly dead loads, and to withstand live loads caused by positive and negative wind pressure acting normal to plane of glass.
  - 1. Comply with ASTM E1300 for design load resistance of glass type, thickness, dimensions, and maximum lateral deflection of supported glass.
  - 2. Seismic Loads: Design and size glazing components to withstand seismic loads and sway displacement in accordance with the requirements of ASCE 7
  - 3. Provide glass edge support system sufficiently stiff to limit the lateral deflection of supported glass edges to less than 1/175 of their lengths under specified design load.
  - 4. Glass thicknesses listed are minimum.
- B. Thermal and Optical Performance: Provide exterior glazing products with performance properties as indicated. Performance properties are in accordance with manufacturer's

published data as determined with the following procedures and/or test methods:

1. Center of Glass U-Value: Comply with NFRC 100 using Lawrence Berkeley National Laboratory (LBNL) WINDOW 6.3 computer program.
2. Center of Glass Solar Heat Gain Coefficient (SHGC): Comply with NFRC 200 using Lawrence Berkeley National Laboratory (LBNL) WINDOW 6.3 computer program.
3. Solar Optical Properties: Comply with NFRC 300 test method.

## **2.03 GLASS MATERIALS**

- A. Float Glass: Provide float glass based glazing unless otherwise indicated.
  1. Annealed Type: ASTM C1036, Type I - Transparent Flat, Class 1 - Clear, Quality - Q3.
  2. Kind HS - Heat-Strengthened Type: Complies with ASTM C1048.
  3. Kind FT - Fully Tempered Type: Complies with ASTM C1048.
  4. Fully Tempered Safety Glass: Complies with ANSI Z97.1 or 16 CFR 1201 criteria for safety glazing used in hazardous locations.
  5. Thicknesses: As indicated; for exterior glazing comply with requirements for wind load design regardless of specified thickness.

## **2.04 INSULATING GLASS UNITS**

- A. Manufacturers:
  1. Cardinal Glass Industries; [\_\_\_\_]: [www.cardinalcorp.com/#sle](http://www.cardinalcorp.com/#sle).
  2. Guardian Glass, LLC; [\_\_\_\_]: [www.guardianglass.com/#sle](http://www.guardianglass.com/#sle).
- B. Insulating Glass Units: Types as indicated.
  1. Durability: Certified by an independent testing agency to comply with ASTM E2190.
  2. Coated Glass: Comply with requirements of ASTM C1376 for pyrolytic (hard-coat) or magnetic sputter vapor deposition (soft-coat) type coatings on flat glass; coated vision glass, Kind CV; coated overhead glass, Kind CO; or coated spandrel glass, Kind CS.
  3. Metal Edge Spacers: Aluminum, bent and soldered corners.
  4. Spacer Color: Black.
  5. Edge Seal:
    - a. Dual-Sealed System: Provide polyisobutylene sealant as primary seal applied between spacer and glass panes, and silicone, polysulfide, or polyurethane sealant as secondary seal applied around perimeter.
    - b. Color: Black.
  6. Purge interpane space with dry air, hermetically sealed.
- C. Type IG-1 - Insulating Glass Units: Vision glass, double glazed.
  1. Applications: Exterior glazing unless otherwise indicated.
  2. Space between lites filled with air.
  3. Outboard Lite: Annealed float glass, 1/4 inch thick, minimum.
    - a. Tint: Bronze.
    - b. Coating: Low-E (passive type), on #2 surface.
  4. Metal edge spacer.
  5. Inboard Lite: Annealed float glass, 1/4 inch thick, minimum.
    - a. Tint: Clear.
  6. Total Thickness: 1 inch.
  7. Thermal Transmittance (U-Value), 0.26, nominal.
  8. Visible Light Transmittance (VLT): 0.20, nominal.
  9. Solar Heat Gain Coefficient (SHGC): 0.20, nominal.
- D. Type IG-5 - Insulating Glass Units: Safety glazing.
  1. Applications:
    - a. Glazed lites in exterior doors.
    - b. Glazed sidelights and panels next to doors.
    - c. Other locations required by applicable federal, state, and local codes and regulations.
  2. Space between lites filled with air.

3. Glass Type: Same as Type [ ] except use fully tempered float glass for both outboard and inboard lites.
4. Total Thickness: 1 inch.
5. Metal edge spacer.
6. Thermal Transmittance (U-Value), Summer - Center of Glass: 0.26, nominal.

## **2.05 GLAZING UNITS**

- A. Type G-3 - Fire-Resistance-Rated Glazing: Type, thickness, and configuration of glazing that contains flame, smoke, and blocks radiant heat, as required to achieve indicated fire-rating period exceeding 45 minutes.
  1. Applications:
    - a. Glazing in fire-rated door assembly.
    - b. Glazing in sidelites, borrowed lites, and other glazed openings in fire-rated wall assemblies.
  2. Glazing Method: As required for fire rating.
  3. Fire-Rating Period: 60 minutes.
  4. Markings for Fire-Resistance-Rated Glazing Assemblies: Provide permanent markings on fire-resistance-rated glazing in compliance with ICC (IBC), local building code, and authorities having jurisdiction.
- B. Type G-4 - Fire-Protection-Rated Glazing: Type, thickness, and configuration of glazing that contains flame, smoke, and does not block radiant heat, as required to achieve fire-doors indicated fire-rating period of 90 minutes or less.
  1. Applications:
    - a. Glazing in fire-rated door assembly.
  2. Glass Type: Specialty tempered float glass.
  3. Glazing Method: As required for fire rating.
  4. Fire-Rating Period: As indicated on drawings.
  5. Markings for Fire-Protection-Rated Glazing Assemblies: Provide permanent markings on fire-protection-rated glazing in compliance with ICC (IBC), local building code, and authorities having jurisdiction
- C. Type G-5 - Monolithic Safety Glazing: Non-fire-rated.
  1. Applications:
    - a. Glazed lites in doors, except fire doors.
    - b. Glazed sidelights to doors, except in fire-rated walls and partitions.
    - c. Other locations required by applicable federal, state, and local codes and regulations.
    - d. Other locations indicated on drawings.
  2. Glass Type: Fully tempered safety glass as specified.
  3. Tint: Clear.
  4. Thickness: 1/4 inch, nominal.

## **2.06 GLAZING COMPOUNDS**

- A. Silicone Sealant: Single component; neutral curing; capable of water immersion without loss of properties; non-bleeding, non-staining; ASTM C920 Type S, Grade NS, Class 25, Uses M, A, and G; with cured Shore A hardness range of 15 to 25; color as selected.

## **2.07 ACCESSORIES**

- A. Glazing Tape: Closed cell polyvinyl chloride (PVC) foam, coiled on release paper over adhesive on two sides, maximum water absorption by volume of 2 percent, designed for compression of 25 percent to effect an air barrier and vapor retarder seal.

## **PART 3 EXECUTION**

### **3.01 VERIFICATION OF CONDITIONS**

- A. Verify that openings for glazing are correctly sized and within tolerances, including those for size, squareness, and offsets at corners.

- B. Verify that surfaces of glazing channels or recesses are clean, free of obstructions that may impede moisture movement, weeps are clear, and support framing is ready to receive glazing system.

### **3.02 PREPARATION**

- A. Clean contact surfaces with appropriate solvent and wipe dry within maximum of 24 hours before glazing. Remove coatings that are not tightly bonded to substrates.
- B. Seal porous glazing channels or recesses with substrate compatible primer or sealer.
- C. Prime surfaces scheduled to receive sealant where required for proper sealant adhesion.

### **3.03 INSTALLATION, GENERAL**

- A. Install glazing sealants in accordance with ASTM C1193, GANA (SM), and manufacturer's instructions.

### **3.04 FIELD QUALITY CONTROL**

- A. See Section 01 4000 - Quality Requirements, for additional requirements.
- B. Glass and Glazing product manufacturers to provide field surveillance of the installation of their products.
- C. Monitor and report installation procedures and unacceptable conditions.

### **3.05 CLEANING**

- A. Remove excess glazing materials from finish surfaces immediately after application using solvents or cleaners recommended by manufacturers.
- B. Remove non-permanent labels immediately after glazing installation is complete.
- C. Clean glass and adjacent surfaces after sealants are fully cured.
- D. Clean glass on both exposed surfaces not more than 4 days prior to Date of Substantial Completion in accordance with glass manufacturer's written recommendations.

### **3.06 PROTECTION**

- A. After installation, mark pane with an 'X' by using removable plastic tape or paste; do not mark heat absorbing or reflective glass units.
- B. Remove and replace glass that is damaged during construction period prior to Date of Substantial Completion.

**END OF SECTION**

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**SECTION 08 8723  
SAFETY AND SECURITY FILMS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Glazing film applied to new glazing assemblies.
- B. New Glazing: Factory or shop install film to glazing before installation in frames.
- C. Glazing assemblies to receive film are as follows:
  - 1. Main entry doors/sidelights (doors 100A & B)
  - 2. Stair ST1 doors (doors ST1A)
  - 3. Cafeteria doors/sidelites (doors 109C & D)
  - 4. Kitchen doors (doors 111G)
  - 5. Rear entry doors (doors C1A)
  - 6. Kindergarten doors (doors 113A, 114A, 115A & 116A)
  - 7. Chorus & Band doors (133A & 135A)
  - 8. Stair ST2 doors (doors ST2A)
  - 9. Stair ST3 doors (doors ST3A)

**1.02 REFERENCE STANDARDS**

- A. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2021a.

**1.03 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
  - 1. Record of product certification for safety requirements.
  - 2. Preparation instructions and recommendations.
  - 3. Storage and handling requirements and recommendations.
  - 4. Installation methods.
- C. Shop Drawings: Detailing installation of film, anchoring accessories, and sealant.
- D. Samples: For each film product to be used, minimum size 4 inches by 6 inches, representing actual product, color, and patterns.
- E. Test Reports: Detailed reports of full-scale chamber tests to specified criteria, using assemblies identical to those required for this project.
- F. Specimen Warranty.

**1.04 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Glazing film manufacturer specializing in manufacture of safety glazing films with minimum 10 years successful experience.
- B. Installer Qualifications: Certified by glazing film manufacturer.

**1.05 DELIVERY, STORAGE, AND HANDLING**

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of authorities having jurisdiction.

**1.06 FIELD CONDITIONS**

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

**1.07 WARRANTY**

- A. Provide 10 year manufacturer's replacement warranty to cover film against peeling, cracking, discoloration, and deterioration.

## **PART 2 PRODUCTS**

### **2.01 MANUFACTURERS**

- A. 3M Window Film: [www.solutions.3m.com/#sle](http://www.solutions.3m.com/#sle).
- B. Armoured One Film: [www.armouredone/security-film.com](http://www.armouredone/security-film.com).

### **2.02 MATERIALS**

- A. Glazing Film: Transparent polyester film for permanent bonding to glass.
  - 1. Thickness: 23 mm.
  - 2. Color: Clear.
  - 3. Surface Burning Characteristics: Flame spread index of 25, maximum, and smoke developed index of 450, maximum, when tested in accordance with ASTM E84 (Class A).
- B. Accessory Materials: As recommended or required by film manufacturer.
- C. Glass Cleaner: As recommended by glazing film manufacturer.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Examine glass and frames. Verify that existing conditions are adequate for proper application and performance of film.
- B. Verify glass is not cracked, chipped, broken, or damaged.
- C. Verify that frames are securely anchored and free of defects.
- D. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

### **3.02 PREPARATION**

- A. Clean glass of dust, dirt, paint, oil, grease, mildew, mold, and other contaminants that would inhibit adhesion.
- B. Immediately prior to applying film, thoroughly wash glass with neutral cleaning solution.
- C. Protect adjacent surfaces.
- D. Do not begin installation until substrates have been properly prepared.

### **3.03 INSTALLATION**

- A. Do not apply glazing film when surface temperature is less than 40 degrees F or if precipitation is imminent.
- B. Install in accordance with manufacturer's instructions, without air bubbles, wrinkles, streaks, bands, thin spots, pinholes, or gaps, as required to achieve specified performance.
- C. Accurately cut film with straight edges to required sizes allowing 1/16 inch to 1/8 inch gap at perimeter of glazed panel unless otherwise required by anchorage method.
- D. Seams: Seam film only as required to accommodate material sizes; form seams vertically without overlaps and gaps; do not install with horizontal seams.
- E. Clean glass and anchoring accessories following installation. Remove excess sealants and other glazing materials from adjacent finished surfaces.
- F. Remove labels and protective covers.

### **3.04 PROTECTION**

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Date of Substantial Completion.

### **END OF SECTION**

## **SECTION 08 9100 LOUVERS**

### **PART 1 GENERAL**

#### **1.01 RELATED REQUIREMENTS**

- A. Section 07 2500 - Weather Barriers: Sealing frames to water-resistive barrier installed on adjacent construction.
- B. Section 07 6200 - Sheet Metal Flashing and Trim.
- C. Section 07 9200 - Joint Sealants: Sealing joints between frames and adjacent construction.
- D. Section 23 3100 - HVAC Ducts and Casings: Ductwork attachment to louvers, and blank-off panels.
- E. Section 23 3300 - Air Duct Accessories: Fire/smoke dampers associated with exterior wall louvers.

#### **1.02 REFERENCE STANDARDS**

- A. AAMA 2604 - Voluntary Specification, Performance Requirements and Test Procedures for High Performance Organic Coatings on Aluminum Extrusions and Panels (with Coil Coating Appendix) 2017a.
- B. AMCA 511 - Certified Ratings Program Product Rating Manual for Air Control Devices 2021.
- C. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes 2021.
- D. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric) 2021.

#### **1.03 SUBMITTALS**

- A. See Section 01 3300- Administrative Requirements for submittal procedures.
- B. Product Data: Provide data describing design characteristics, maximum recommended air velocity, design free area, materials and finishes.
- C. Shop Drawings: Indicate louver layout plan and elevations, opening and clearance dimensions, and tolerances; head, jamb and sill details; blade configuration, screens, blank-off areas required, and frames.

#### **1.04 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Company specializing in manufacturing products of the type specified in this section, with minimum three years of documented experience.

#### **1.05 WARRANTY**

- A. See Section 01 7800 - Closeout Submittals for additional warranty requirements.

### **PART 2 PRODUCTS**

#### **2.01 MANUFACTURERS**

- A. Louvers: Basis of Design: Architectural Louvers Co. (Harray, LLC) Model E4JS.
  - 1. Substitutions: See Section 01 6000 - Product Requirements.

#### **2.02 LOUVERS**

- A. Extruded Aluminum Stationary Louvers: Factory fabricated and assembled, complete with frame, mullions, and accessories; AMCA Certified in accordance with AMCA 511.
  - 1. Louver depth: 4 inches.
  - 2. Blade Profile: Plain Blade without center baffle.
  - 3. Drainable Blades: Continuous rain stop at front or rear of blade aligned with vertical gutter recessed into both jambs of frame.
  - 4. Mounting Option: For louvers in existing openings of 1922 structure below exterior windows, provide a channels "C" frame and 2" long EZ mounting clips every 18" of louver perimeter. Fasten in place and caulk perimeter at interior and exterior of louver.

### **2.03 MATERIALS**

- A. Extruded Aluminum: ASTM B221 (ASTM B221M).

### **2.04 FINISHES**

- A. High Performance Organic Coatings: AAMA 2604; multiple coats, thermally cured fluoropolymer system.
- B. High Performance Organic Coating: Primer and silicone-modified polyester (SMP) enamel topcoat with minimum dry film thickness (DFT) of 1.2 mils, 0.0012 inch over aluminum extrusions and panels; AAMA 2604.
- C. Primer: Zinc chromate, alkyd type.
- D. Color: Custom, to match approved sample.

### **2.05 ACCESSORIES**

- A. Screens: Frame of same material as louver, with reinforced corners; removable, screw attached; installed on inside face of louver frame.
- B. Insect Screen: 18 x 16 size aluminum mesh.
- C. Fasteners and Anchors: Galvanized steel.
- D. Flashings: Of same material as louver frame, formed to required shape, single length in one piece per location.
- E. Sealant for Setting Sills and Sill Flashing: Non-curing butyl type.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that prepared openings and flashings are ready to receive this work and opening dimensions are as indicated on shop drawings.

### **3.02 INSTALLATION**

- A. Install louver assembly in accordance with manufacturer's instructions.
- B. Install louvers level and plumb.
- C. Install flashings and align louver assembly to ensure moisture shed from flashings and diversion of moisture to exterior.
- D. Secure louver frames in openings with concealed fasteners.

### **3.03 ADJUSTING**

- A. Adjust operable louvers for freedom of movement of control mechanism. Lubricate operating joints.

### **3.04 CLEANING**

- A. Clean surfaces and components.

**END OF SECTION**

**SECTION 09 0561  
COMMON WORK RESULTS FOR FLOORING PREPARATION**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. This section applies to floors identified in Contract Documents that are receiving the following types of floor coverings:
  - 1. Resilient tile and sheet.
  - 2. Carpet tile.
  - 3. Thin-set ceramic tile and stone tile.
- B. Removal of existing floor coverings.
- C. Preparation of new and existing concrete floor slabs for installation of floor coverings.
- D. Preparation of new and existing wood subfloor for installation of floor coverings.
- E. Testing of concrete floor slabs for moisture and alkalinity (pH).
- F. Remediation of concrete floor slabs due to unsatisfactory moisture or alkalinity (pH) conditions.
  - 1. Contractor shall perform all specified remediation of concrete floor slabs. If such remediation is indicated by testing agency's report and is due to a condition not under Contractor's control or could not have been predicted by examination prior to entering into the contract, a contract modification will be issued.
- G. Patching compound.
- H. Remedial floor coatings.
- I. Preparation of new and existing wood-based floors and subfloors for installation of new floor coverings.

**1.02 RELATED REQUIREMENTS**

- A. Section 01 4000 - Quality Requirements: Additional requirements relating to testing agencies and testing.
- B. Section 03 3000 - Cast-in-Place Concrete: Moisture emission reducing curing and sealing compound for slabs to receive adhered flooring, to prevent moisture content-related flooring failures; to remain in place, not to be removed.

**1.03 REFERENCE STANDARDS**

- A. ASTM C109/C109M - Standard Test Method for Compressive Strength of Hydraulic Cement Mortars (Using 2-in. or [50 mm] Cube Specimens) 2021.
- B. ASTM C472 - Standard Test Methods for Physical Testing of Gypsum, Gypsum Plasters and Gypsum Concrete 2020.
- C. ASTM F710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring 2021.
- D. ASTM F1869 - Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride 2016a.
- E. ASTM F2170 - Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes 2019a.
- F. RFCI (RWP) - Recommended Work Practices for Removal of Resilient Floor Coverings 2011.

**1.04 ADMINISTRATIVE REQUIREMENTS**

- A. Coordinate scheduling of cleaning and testing, so that preliminary cleaning has been completed for at least 24 hours prior to testing.

**1.05 SUBMITTALS**

- A. Visual Observation Report: For existing floor coverings to be removed.

- B. Floor Covering and Adhesive Manufacturers' Product Literature: For each specific combination of substrate, floor covering, and adhesive to be used; showing:
  - 1. Moisture and alkalinity (pH) limits and test methods.
  - 2. Manufacturer's required bond/compatibility test procedure.
- C. Remedial Materials Product Data: Manufacturer's published data on each product to be used for remediation.
  - 1. Manufacturer's qualification statement.
  - 2. Manufacturer's statement of compatibility with types of flooring applied over remedial product.
  - 3. Test reports indicating compliance with specified performance requirements, performed by nationally recognized independent testing agency.
- D. Testing Agency's Report:
  - 1. Description of areas tested; include floor plans and photographs if helpful.
  - 2. Summary of conditions encountered.
  - 3. Moisture and alkalinity (pH) test reports.
  - 4. Copies of specified test methods.
  - 5. Recommendations for remediation of unsatisfactory surfaces.
  - 6. Submit report not more than two business days after conclusion of testing.
- E. Adhesive Bond and Compatibility Test Report.
- F. Floor Moisture Testing Technician Certificate: International Concrete Repair Institute (ICRI) Concrete Slab Moisture Testing Technician- Grade I certificate.
- G. Copy of RFCI (RWP).

#### **1.06 QUALITY ASSURANCE**

- A. Contractor may perform adhesive and bond test with Contractor's own personnel or hire a testing agency.
- B. Testing Agency Qualifications: Independent testing agency experienced in the types of testing specified.
  - 1. Submit evidence of experience consisting of at least 3 test reports of the type required, with project Owner's project contact information.
- C. Contractor's Responsibility Relating to Independent Agency Testing:
  - 1. Provide access for and cooperate with testing agency.
  - 2. Confirm date of start of testing at least 10 days prior to actual start.
  - 3. Allow at least 4 business days on site for testing agency activities.
  - 4. Achieve and maintain specified ambient conditions.
  - 5. Notify Architect when specified ambient conditions have been achieved and when testing will start.
- D. Floor Moisture Testing Technician Qualifications: International Concrete Repair Institute (ICRI) Concrete Slab Moisture Testing Technician Certification- Grade I.
- E. Remedial Coating Installer Qualifications: Company specializing in performing work of the type specified in this section, trained by or employed by coating manufacturer, and able to provide at least 3 project references showing at least 3 years' experience installing moisture emission coatings.

#### **1.07 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver, store, handle, and protect products in accordance with manufacturer's instructions and recommendations.
- B. Deliver materials in manufacturer's packaging; include installation instructions.
- C. Keep materials from freezing.

## **1.08 FIELD CONDITIONS**

- A. Maintain ambient temperature in spaces where concrete testing is being performed, and for at least 48 hours prior to testing, at not less than 65 degrees F or more than 85 degrees F.
- B. Maintain relative humidity in spaces where concrete testing is being performed, and for at least 48 hours prior to testing, at not less than 40 percent and not more than 60 percent.

## **PART 2 PRODUCTS**

### **2.01 MATERIALS**

- A. Patching Compound: Floor covering manufacturer's recommended product, suitable for conditions, and compatible with adhesive and floor covering. In the absence of any recommendation from flooring manufacturer, provide a product with the following characteristics:
  - 1. Cementitious moisture-, mildew-, and alkali-resistant compound, compatible with floor, floor covering, and floor covering adhesive, and capable of being feathered to nothing at edges.
  - 2. Compressive Strength: 3000 psi, minimum, after 28 days, when tested in accordance with ASTM C109/C109M or ASTM C472, whichever is appropriate.
- B. Alternate Flooring Adhesive: Floor covering manufacturer's recommended product, suitable for the moisture and pH conditions present; low-VOC. In the absence of any recommendation from flooring manufacturer, provide a product recommended by adhesive manufacturer as suitable for substrate and floor covering and for conditions present.
- C. Remedial Floor Coating: Single- or multi-layer coating or coating/overlay combination intended by its manufacturer to resist water vapor transmission to degree sufficient to meet flooring manufacturer's emission limits, resistant to the level of alkalinity (pH) found, and suitable for adhesion of flooring without further treatment.
  - 1. Thickness: As required for application and in accordance with manufacturer's installation instructions.
  - 2. Products:
    - a. ARDEX Engineered Cements; ARDEX MC RAPID: [www.ardexamericas.com/#sle](http://www.ardexamericas.com/#sle).
    - b. H.B. Fuller Construction Products, Inc; TEC LiquidDam with TEC Level Set 200 SLU: [www.tecspecialty.com/#sle](http://www.tecspecialty.com/#sle).
    - c. LATICRETE International, Inc; LATICRETE NXT Vapor Reduction Coating with LATICRETE NXT Level Plus: [www.laticrete.com/#sle](http://www.laticrete.com/#sle).

## **PART 3 EXECUTION**

### **3.01 CONCRETE SLAB PREPARATION**

- A. Perform following operations in the order indicated:
  - 1. Existing concrete slabs (on-grade and elevated) with existing floor coverings:
    - a. Visual observation of existing floor covering, for adhesion, water damage, alkaline deposits, and other defects.
    - b. Removal of existing floor covering.
    - c. For existing building (original 1922 structure); document conditions where the finish flooring has been removed to determine what means might need to take place beyond what is specified to prepare the slab areas for new finish, and to align proposed slab pours to level up with the existing slabs. A high level of coordination and communication will be needed.
  - 2. Preliminary cleaning.
  - 3. Moisture vapor emission tests; 3 tests in the first 1000 square feet and one test in each additional 1000 square feet, unless otherwise indicated or required by flooring manufacturer.
  - 4. Internal relative humidity tests; in same locations as moisture vapor emission tests, unless otherwise indicated.

5. Alkalinity (pH) tests; in same locations as moisture vapor emission tests, unless otherwise indicated.
6. Specified remediation, if required.
7. Patching, smoothing, and leveling, as required.
8. Other preparation specified.
9. Adhesive bond and compatibility test.
10. Protection.

### **3.02 REMOVAL OF EXISTING FLOOR COVERINGS**

- A. Comply with local, State, and federal regulations and recommendations of RFCI Recommended Work Practices for Removal of Resilient Floor Coverings, as applicable to floor covering being removed.
- B. Dispose of removed materials in accordance with local, State, and federal regulations and as specified.

### **3.03 PRELIMINARY CLEANING**

- A. Clean floors of dust, solvents, paint, wax, oil, grease, asphalt, residual adhesive, adhesive removers, film-forming curing compounds, sealing compounds, alkaline salts, excessive laitance, mold, mildew, and other materials that might prevent adhesive bond.
- B. Do not use solvents or other chemicals for cleaning.

### **3.04 MOISTURE VAPOR EMISSION TESTING**

- A. Where the floor covering manufacturer's requirements conflict with either the referenced test method or this specification, comply with the manufacturer's requirements.
- B. Where this specification conflicts with the referenced test method, comply with the requirements of this section.
- C. Test in accordance with ASTM F1869 and as follows.
- D. Plastic sheet test and mat bond test may not be substituted for the specified ASTM test method, as those methods do not quantify the moisture content sufficiently.
- E. In the event that test values exceed floor covering manufacturer's limits, perform remediation as indicated. In the absence of manufacturer limits, perform remediation if test values exceed 3 pounds per 1000 square feet per 24 hours.
- F. Report: Report the information required by the test method.

### **3.05 INTERNAL RELATIVE HUMIDITY TESTING**

- A. Where the floor covering manufacturer's requirements conflict with either the referenced test method or this specification, comply with the manufacturer's requirements.
- B. Where this specification conflicts with the referenced test method, comply with the requirements of this section.
- C. Test in accordance with ASTM F2170 Procedure A and as follows.
- D. Testing with electrical impedance or resistance apparatus may not be substituted for the specified ASTM test method, as the values determined are not comparable to the ASTM test values and do not quantify the moisture content sufficiently.
- E. In the event that test values exceed floor covering manufacturer's limits, perform remediation as indicated. In the absence of manufacturer limits, perform remediation if any test value exceeds 75 percent relative humidity.
- F. Report: Report the information required by the test method.

### **3.06 ALKALINITY TESTING**

- A. Where the floor covering manufacturer's requirements conflict with either the referenced test method or this specification, comply with the manufacturer's requirements.



- B. The following procedure is the equivalent of that described in ASTM F710, repeated here for the Contractor's convenience.
- C. In the event that test values exceed floor covering manufacturer's limits, perform remediation as indicated. In the absence of manufacturer limits, perform remediation if alkalinity (pH) test value is over 10.

### **3.07 PREPARATION**

- A. See individual floor covering section(s) for additional requirements.
- B. Comply with requirements and recommendations of floor covering manufacturer.
- C. Fill and smooth surface cracks, grooves, depressions, control joints and other non-moving joints, and other irregularities with patching compound.
- D. Do not fill expansion joints, isolation joints, or other moving joints.

### **3.08 ADHESIVE BOND AND COMPATIBILITY TESTING**

- A. Comply with requirements and recommendations of floor covering manufacturer.

### **3.09 APPLICATION OF REMEDIAL FLOOR COATING**

- A. Comply with requirements and recommendations of coating manufacturer.

### **3.10 WOOD SUBFLOOR PREPARATION**

- A. Perform following operations in the order indicated:
  - 1. Visual observation of existing floor covering, for adhesion, water damage, alkaline deposits, and other defects.
  - 2. Removal of existing floor coverings.
  - 3. For existing building (original 1922 structure); document conditions where the finished flooring has been removed to determine what means might need to take place beyond what is specified or shown in the construction documents, to prepare the existing subfloor for new floor finishes, along with the coordination of the floor height between the corridors and classrooms, as well as new infill required where masonry shear walls are installed. A high level of coordination and communication will be required.

### **3.11 PROTECTION**

- A. Cover prepared floors with building paper or other durable covering.

**END OF SECTION**

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**SECTION 09 2116  
GYPSUM BOARD ASSEMBLIES**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Performance criteria for gypsum board assemblies.
- B. Metal stud wall framing.
- C. Metal channel ceiling framing.
- D. Resilient sound isolation clips.
- E. Acoustic insulation.
- F. Cementitious backing board.
- G. Gypsum wallboard.
- H. Joint treatment and accessories.
- I. Acoustic (sound-dampening) wall and ceiling board.
- J. Bullet resistant sheathing and wallboard.

**1.02 RELATED REQUIREMENTS**

- A. Section 01 6116 - Volatile Organic Compound (VOC) Content Restrictions.
- B. Section 05 4000 - Cold-Formed Metal Framing: Structural steel stud framing.
- C. Section 06 1000 - Rough Carpentry: Building framing and sheathing.
- D. Section 06 1000 - Rough Carpentry: Wood blocking product and execution requirements.
- E. Section 07 2100 - Thermal Insulation: Acoustic insulation.
- F. Section 07 8400 - Firestopping: Top-of-wall assemblies at fire-resistance-rated walls.
- G. Section 07 9200 - Joint Sealants: Sealing acoustical gaps in construction other than gypsum board or plaster work.
- H. Section 09 2216 - Non-Structural Metal Framing.
- I. Section 09 3000 - Tiling: Tile backing board.

**1.03 REFERENCE STANDARDS**

- A. AISI S100-12 - North American Specification for the Design of Cold-Formed Steel Structural Members 2012.
- B. ANSI A108.11 - American National Standard Specifications for Interior Installation of Cementitious Backer Units 2018.
- C. ANSI A118.9 - American National Standard Specifications for Test Methods and Specifications for Cementitious Backer Units 1999 (Reaffirmed 2016).
- D. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process 2020.
- E. ASTM C475/C475M - Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board 2017.
- F. ASTM C514 - Standard Specification for Nails for the Application of Gypsum Board 2004 (Reapproved 2020).
- G. ASTM C645 - Standard Specification for Nonstructural Steel Framing Members 2018.
- H. ASTM C754 - Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products 2020.
- I. ASTM C840 - Standard Specification for Application and Finishing of Gypsum Board 2020.
- J. ASTM C954 - Standard Specification for Steel Drill Screws for the Application of Gypsum Panel Products or Metal Plaster Bases to Steel Studs From 0.033 in. (0.84 mm) to 0.112 in. (2.84

mm) in Thickness 2018.

- K. ASTM C1002 - Standard Specification for Steel Self-Piercing Tapping Screws for Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs 2020.
- L. ASTM C1047 - Standard Specification for Accessories for Gypsum Wallboard and Gypsum Veneer Base 2019.
- M. ASTM C1325 - Standard Specification for Fiber-Mat Reinforced Cementitious Backer Units 2021.
- N. ASTM C1396/C1396M - Standard Specification for Gypsum Board 2017.
- O. ASTM C1629/C1629M - Standard Classification for Abuse-Resistant Nondecorated Interior Gypsum Panel Products and Fiber-Reinforced Cement Panels 2019.
- P. ASTM D3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber 2016.
- Q. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2021a.
- R. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements 2009 (Reapproved 2016).
- S. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials 2020.
- T. ASTM E413 - Classification for Rating Sound Insulation 2016.
- U. GA-216 - Application and Finishing of Gypsum Panel Products 2016, with Errata.

#### **1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Shop Drawings: Indicate special details associated with fireproofing and acoustic seals.
- C. Product Data: Provide manufacturer's data on partition head to structure connectors, showing compliance with requirements.

#### **1.05 QUALITY ASSURANCE**

- A. Installer Qualifications: Company specializing in performing gypsum board installation and finishing, with minimum 5 years of experience.
- B. Mock-up: Provide a mock-up of the area indicated on the Drawings for evaluation of surface preparation techniques and application workmanship.
  - 1. Locate finish areas designated by Architect.
  - 2. Do not proceed with the remaining work until workmanship and finish is approved by Architect.
  - 3. Refinish mock-up area as required to produce acceptable work.
  - 4. If accepted, mock-up will represent the minimum standard for the Work.
  - 5. If accepted, mock-up may remain as part of the Work.

### **PART 2 PRODUCTS**

#### **2.01 GYPSUM BOARD ASSEMBLIES**

- A. Provide completed assemblies complying with ASTM C840 and GA-216.
- B. Shaft Walls at HVAC Shafts: Provide completed assemblies with the following characteristics:
  - 1. Air Pressure Within Shaft: Sustained loads of 5 lbf/sq ft with maximum mid-span deflection of L/240.
  - 2. Acoustic Attenuation: STC of 35-39 calculated in accordance with ASTM E413, based on tests conducted in accordance with ASTM E90.
- C. Shaft Walls at Elevator Shafts: Provide completed assemblies with the following characteristics:
  - 1. Air Pressure Within Shaft: Intermittent loads of 5 lbf/sq ft with maximum mid-span deflection of L/240.

2. Acoustic Attenuation: STC of 35-39 calculated in accordance with ASTM E413, based on tests conducted in accordance with ASTM E90.
- D. Fire-Resistance-Rated Assemblies: Provide completed assemblies with the following characteristics:
1. As indicated on the Drawings.

## **2.02 METAL FRAMING MATERIALS**

- A. Non-structural Framing System Components: ASTM C645; galvanized sheet steel, of size and properties necessary to comply with ASTM C754 for the spacing indicated, with maximum deflection of wall framing of L/120 at 5 psf.
1. Studs: "C" shaped with knurled or embossed faces.
    - a. Products:
      - 1) Super Stud Building Products, Inc; The EDGE: [www.buysuperstud.com/#sle](http://www.buysuperstud.com/#sle).
      - 2) Substitutions: See Section 01 6000 - Product Requirements.
  2. Paired Studs for Sound-Rated Assemblies: Engineered single-piece assemblies comprised of paired studs coupled by sound isolators, designed to replace conventional side-by-side, parallel, double-wall partition framing.
    - a. Widths: As indicated on drawings.
    - b. Products:
      - 1) SCAFCO Corporation; SoundGuard Silent Steel Framing System: [www.scafco.com/#sle](http://www.scafco.com/#sle).
      - 2) Substitutions: See Section 01 6000 - Product Requirements.
  3. Runners: U shaped, sized to match studs.
  4. Ceiling Channels: C shapes at 24" o.c. with hat channels perpendicular at 16" o.c..
  5. Furring Members: Hat-shaped sections, minimum depth as noted on drawings.
  6. Resilient Sound Isolation Clips: Steel resilient clips with molded rubber isolators, attaches to framing; improves noise isolation performance of wall and floor-ceiling assemblies.
    - a. Products:
      - 1) ClarkDietrich; Sound Clip (CDSC): [www.clarkdietrich.com/#sle](http://www.clarkdietrich.com/#sle).
      - 2) PAC International, Inc; RSIC-1: [www.pac-intl.com/#sle](http://www.pac-intl.com/#sle).
      - 3) Substitutions: See Section 01 6000 - Product Requirements.
- B. Shaft Wall Studs and Accessories: ASTM C645; galvanized sheet steel, of size and properties necessary to comply with ASTM C754 and specified performance requirements.
- C. Partition Head to Structure Connections: Provide mechanical anchorage devices that accommodate deflection using slotted holes, screws, and anti-friction bushings, preventing rotation of studs while maintaining structural performance of partition.
1. Structural Performance: Maintain lateral load resistance and vertical movement capacity required by applicable code, when evaluated in accordance with AISI S100-12.
  2. Material: ASTM A653/A653M steel sheet, SS Grade 50/340, with G60/Z180 hot-dipped galvanized coating.
  3. Provide components UL-listed for use in UL-listed fire-resistance-rated head of partition joint systems indicated on drawings.
  4. Provide mechanical anchorage devices as described above that accommodate deflection while maintaining the fire-resistance rating of the wall assembly.
    - a. Products:
      - 1) ClarkDietrich; BlazeFrame RipTrak: [www.clarkdietrich.com/#sle](http://www.clarkdietrich.com/#sle).
      - 2) Super Stud Building Products, Inc; Slotted Deflection Track: [www.buysuperstud.com/#sle](http://www.buysuperstud.com/#sle).
      - 3) Substitutions: See Section 01 6000 - Product Requirements.
  5. Provide top track preassembled with connection devices spaced to fit stud spacing indicated on drawings; minimum track length of 12 feet.
- D. Deflection and Firestop Track: Intumescent strip factory-applied to track flanges expands when exposed to heat or flames to provide a perimeter joint seal.
1. Products:

- a. ClarkDietrich; BlazeFrame Firestop Deflection Track: [www.clarkdietrich.com/#sle](http://www.clarkdietrich.com/#sle).
  - b. Substitutions: See Section 01 6000 - Product Requirements.
- E. Non-structural Framing Accessories:
  - 1. Ceiling Hangers: Type and size as specified in ASTM C754 for spacing required.
  - 2. Framing Connectors: ASTM A653/A653M G90 galvanized steel clips; secures cold rolled channel to wall studs for lateral bracing.
    - a. Products:
      - 1) ClarkDietrich; FastBridge Clip (FB33): [www.clarkdietrich.com/#sle](http://www.clarkdietrich.com/#sle).
      - 2) Substitutions: See Section 01 6000 - Product Requirements.
- F. Grid Suspension Systems: Steel grid system of main tees and support bars connected to structure using hanging wire.
  - 1. Products:
    - a. USG Corporation; Drywall Suspension System: [www.usg.com/#sle](http://www.usg.com/#sle).
    - b. Substitutions: See Section 01 6000 - Product Requirements.

## 2.03 BOARD MATERIALS

- A. Manufacturers - Gypsum-Based Board:
  - 1. CertainTeed Corporation; [ ]: [www.certainteed.com/#sle](http://www.certainteed.com/#sle).
  - 2. Georgia-Pacific Gypsum; [ ]: [www.gpgypsum.com/#sle](http://www.gpgypsum.com/#sle).
  - 3. USG Corporation; [ ]: [www.usg.com/#sle](http://www.usg.com/#sle).
  - 4. Substitutions: See Section 01 6000 - Product Requirements.
- B. Gypsum Wallboard: Paper-faced gypsum panels as defined in ASTM C1396/C1396M; sizes to minimize joints in place; ends square cut.
  - 1. Application: Use for vertical surfaces and ceilings, unless otherwise indicated.
  - 2. At Assemblies Indicated with Fire-Resistance Rating: Use type required by indicated tested assembly; if no tested assembly is indicated, use Type X board, UL or WH listed.
  - 3. Thickness:
    - a. Vertical Surfaces: 5/8 inch.
    - b. Ceilings: 5/8 inch.
    - c. Multi-Layer Assemblies: Thicknesses as indicated on drawings.
  - 4. Mold Resistant Paper Faced Products:
    - a. American Gypsum Company; M-Bloc.
    - b. CertainTeed Corporation; M2Tech 5/8" Type C Moisture & Mold Resistant Drywall.
    - c. Georgia-Pacific Gypsum; ToughRock Mold-Guard.
    - d. Substitutions: See Section 01 6000 - Product Requirements.
- C. Impact Resistant Wallboard:
  - 1. Application: High-traffic areas indicated.
  - 2. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
  - 3. Type: Fire-resistance-rated Type X, UL or WH listed.
  - 4. Thickness: 5/8 inch.
  - 5. Edges: Tapered.
  - 6. Paper-Faced Products:
    - a. American Gypsum Company; M-Bloc IR Type X.
    - b. CertainTeed Corporation; Extreme Impact Resistant Drywall with M2Tech.
    - c. Continental Building Products; Protecta HIR 300 Type X with Mold Defense.
    - d. Substitutions: See Section 01 6000 - Product Requirements.
- D. Backing Board For Wet Areas: One of the following products:
  - 1. Application: Surfaces behind tile in wet areas including Restrooms with metal stud walls.
  - 2. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
  - 3. ANSI Cement-Based Board: Non-gypsum-based; aggregated Portland cement panels with glass fiber mesh embedded in front and back surfaces complying with ANSI A118.9 or ASTM C1325.
    - a. Thickness: 5/8 inch.

- b. Products:
    - 1) USG Corporation; "Durock": [www.usg.com/#sle](http://www.usg.com/#sle).
    - 2) Substitutions: See Section 01 6000 - Product Requirements.
- E. Backing Board For Non-Wet Areas: Water-resistant gypsum backing board as defined in ASTM C1396/C1396M; sizes to minimum joints in place; ends square cut.
  - 1. Application: Vertical surfaces behind thinset tile, except in wet areas.
  - 2. Mold Resistance: Score of 10, when tested in accordance with ASTM D3273.
  - 3. Type X Thickness: 5/8 inch.
  - 4. Edges: Tapered.
  - 5. Products:
    - a. Georgia-Pacific Gypsum; ToughRock Mold-Guard Gypsum Board.
- F. Ceiling Board: Special sag resistant gypsum ceiling board as defined in ASTM C1396/C1396M; sizes to minimize joints in place; ends square cut.
  - 1. Application: Ceilings, unless otherwise indicated.
  - 2. Thickness: 1/2 inch.
  - 3. Edges: Tapered.
  - 4. Products:
    - a. Georgia-Pacific Gypsum; ToughRock Span 24 Ceiling Board.
    - b. Substitutions: See Section 01 6000 - Product Requirements.

## 2.04 GYPSUM WALLBOARD ACCESSORIES

- A. Acoustic Insulation: As specified in Section 07 2100.
- B. Acoustical Shielding: Recycled ethylene vinyl acetate (EVA) sheet membrane; applied between studs and gypsum board.
  - 1. Sound Transmission Class (STC): Minimum of 25, calculated in accordance with ASTM E413, based on tests conducted in accordance with ASTM E90.
  - 2. Fire Resistance: Where fire-resistance rating is specified for the wall in which the acoustical shielding membrane is mounted, provide assemblies that have been tested in accordance with ASTM E119 for the same rating as the wall.
  - 3. Products:
    - a. Blue Ridge Fiberboard, a W.R. Meadows Company; Soundstop Sound-Abate: [www.wrmeadows.com/#sle](http://www.wrmeadows.com/#sle).
    - b. Substitutions: See Section 01 6000 - Product Requirements.
- C. Sound Isolation Tape: Elastomeric foam tape for sound decoupling.
  - 1. Surface Burning Characteristics: Provide assemblies with flame spread index of 75 or less and smoke developed index of 450 or less, when tested in accordance with ASTM E84.
  - 2. Tape Thickness: 1/4 inch.
  - 3. Products:
    - a. Armacell LLC; ArmaSound MTD: [www.armacell.us/#sle](http://www.armacell.us/#sle).
    - b. Substitutions: See Section 01 6000 - Product Requirements.
- D. Acoustic Sealant: Acrylic emulsion latex or water-based elastomeric sealant; do not use solvent-based non-curing butyl sealant.
  - 1. Products:
    - a. Liquid Nails, a brand of PPG Architectural Coatings; AS-825 Acoustical Sound Sealant: [www.liquidnails.com/#sle](http://www.liquidnails.com/#sle).
    - b. Substitutions: See Section 01 6000 - Product Requirements.
- E. Finishing Accessories: ASTM C1047, galvanized steel or rolled zinc, unless noted otherwise.
  - 1. Types: As detailed or required for finished appearance.
  - 2. Special Shapes: In addition to conventional corner bead and control joints, provide U-bead at exposed panel edges.
- F. Beads, Joint Accessories, and Other Trim: ASTM C1047, rigid plastic, galvanized steel, or rolled zinc, unless noted otherwise.

1. Corner Beads: Low profile, for 90 degree outside corners.
  - a. Products:
    - 1) CertainTeed Corporation; No-Coat Drywall Corner: [www.certainteed.com/#sle](http://www.certainteed.com/#sle).
    - 2) Substitutions: See Section 01 6000 - Product Requirements.
- G. Screws for Fastening of Gypsum Panel Products to Cold-Formed Steel Studs Less than 0.033 inches in Thickness and Wood Members: ASTM C1002; self-piercing tapping screws, corrosion-resistant.
- H. Screws for Fastening of Gypsum Panel Products to Steel Members from 0.033 to 0.112 inch in Thickness: ASTM C954; steel drill screws, corrosion-resistant.
- I. Nails for Attachment to Wood Members: ASTM C514.
- J. Anchorage to Substrate: Tie wire, nails, screws, and other metal supports, of type and size to suit application; to rigidly secure materials in place.

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

- A. Verify that project conditions are appropriate for work of this section to commence.
- B. Coordinate and conduct a pre-closure inspection prior to enclosing ceilings, walls, chases, and shafts with gypsum board products with the Owner's Representative and all involved trades (sub-contractors and prime contractors) to verify that their work is complete which includes any testing.
- C. Do not install gypsum board until all unsatisfactory conditions have been corrected.

#### **3.02 SHAFT WALL INSTALLATION**

- A. Shaft Wall Framing: Install in accordance with manufacturer's installation instructions.
  1. Install studs at spacing required to meet performance requirements.
- B. Shaft Wall Liner: Cut panels to accurate dimensions and install sequentially between special friction studs.

#### **3.03 FRAMING INSTALLATION**

- A. Metal Framing: Install in accordance with ASTM C754 and manufacturer's instructions.
- B. Suspended Ceilings and Soffits: Space framing and furring members as indicated.
- C. Studs: Space studs at 16 inches on center.
  1. Extend partition framing to structure where indicated and to ceiling in other locations.
  2. Partitions Terminating at Ceiling: Attach ceiling runner securely to ceiling track in accordance with manufacturer's instructions.
  3. Partitions Terminating at Structure: Attach top runner to structure, maintain clearance between top of studs and structure, and connect studs to track using specified mechanical devices in accordance with manufacturer's instructions; verify free movement of top of stud connections; do not leave studs unattached to track.

#### **3.04 ACOUSTIC ACCESSORIES INSTALLATION**

- A. Acoustic Insulation: Place tightly within spaces, around cut openings, behind and around electrical and mechanical items within partitions, and tight to items passing through partitions.
- B. Sound Isolation Tape: Apply to vertical studs and top and bottom tracks/runners in accordance with manufacturer's instructions.
- C. Acoustic Sealant: Install in accordance with manufacturer's instructions.

#### **3.05 BOARD INSTALLATION**

- A. Comply with ASTM C840, GA-216, and manufacturer's instructions. Install to minimize butt end joints, especially in highly visible locations.
- B. Fire-Resistance-Rated Construction: Install gypsum board in strict compliance with requirements of assembly listing.



- C. Cementitious Backing Board: Install over steel framing members and plywood substrate where indicated, in accordance with ANSI A108.11 and manufacturer's instructions.
- D. Installation on Wood Framing: For rated assemblies, comply with requirements of listing authority. For nonrated assemblies, install as follows:
  - 1. Single-Layer Applications: Screw attachment.

### **3.06 INSTALLATION OF TRIM AND ACCESSORIES**

- A. Control Joints: Place control joints consistent with lines of building spaces and as follows:
  - 1. Not more than 30 feet apart on walls and ceilings over 50 feet long.
  - 2. At exterior soffits, not more than 30 feet apart in both directions.
  - 3. Provide blocking at control joints in fire rated wall and ceiling assemblies according to GA-600 Gypsum Association's Fire Resistance Design Manual.
  - 4. Install joints where specifically indicated for design accent or architectural features.
- B. Corner Beads: Install at external corners, using longest practical lengths.
- C. Edge Trim: Install at locations where gypsum board abuts dissimilar materials.

### **3.07 JOINT TREATMENT**

- A. Paper Faced Gypsum Board: Use paper joint tape, embed with drying type joint compound and finish with drying type joint compound.
- B. Finish gypsum board in accordance with levels defined in ASTM C840, as follows:
  - 1. Level 4: Walls and ceilings to receive paint finish or wall coverings, unless otherwise indicated.
  - 2. Level 2: In utility areas, behind cabinetry, and on backing board to receive tile finish.
  - 3. Level 1: Fire-resistance-rated wall areas above finished ceilings, whether or not accessible in the completed construction.
- C. Tape, fill, and sand exposed joints, edges, and corners to produce smooth surface ready to receive finishes.
  - 1. Feather coats of joint compound so that camber is maximum 1/32 inch.

**END OF SECTION**

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**SECTION 09 2216  
NON-STRUCTURAL METAL FRAMING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Metal partition, ceiling, and soffit framing.
- B. Framing accessories.

**1.02 RELATED REQUIREMENTS**

- A. Section 05 4000 - Cold-Formed Metal Framing: Requirements for structural, load-bearing, metal stud framing and exterior wall stud framing.
- B. Section 05 5000 - Metal Fabrications: Metal fabrications attached to stud framing.
- C. Section 05 5100 - Metal Stairs: Execution requirements for anchors for attaching work of this section.
- D. Section 06 1000 - Rough Carpentry: Wood blocking within stud framing.
- E. Section 07 2100 - Thermal Insulation: Acoustic insulation.
- F. Section 07 9200 - Joint Sealants: Sealing acoustical gaps in construction other than gypsum board or plaster work.
- G. Section 08 3100 - Access Doors and Panels.
- H. Section 09 2116 - Gypsum Board Assemblies: Metal studs for gypsum board partition framing.

**1.03 REFERENCE STANDARDS**

- A. AISI S100 - North American Specification for the Design of Cold-Formed Steel Structural Members 2016, with Supplement (2018).
- B. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process 2020.
- C. ASTM C645 - Standard Specification for Nonstructural Steel Framing Members 2018.
- D. ASTM C754 - Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products 2020.
- E. ASTM C1002 - Standard Specification for Steel Self-Piercing Tapping Screws for Application of Gypsum Panel Products or Metal Plaster Bases to Wood Studs or Steel Studs 2020.
- F. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2021a.

**1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Shop Drawings:
  - 1. Indicate prefabricated work, component details, stud layout, framed openings, anchorage to structure, acoustic details, type and location of fasteners, accessories, and items of other related work.
  - 2. Describe method for securing studs to tracks, splicing, and for blocking and reinforcement of framing connections.
- C. Product Data: Provide manufacturer's data on partition head to structure connectors, showing compliance with requirements.

**1.05 QUALITY ASSURANCE**

- A. Installer Qualifications: Company specializing in performing the work of this section with minimum five years documented experience and approved by manufacturer.

**PART 2 PRODUCTS**

**2.01 MANUFACTURERS**

- A. Metal Framing, Connectors, and Accessories:

Port Jervis City School District  
Additions & Alterations to PJMS  
Project No. 2019-011 PH1

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1. ClarkDietrich: [www.clarkdietrich.com/#sle](http://www.clarkdietrich.com/#sle).
2. Jaimes Industries: [www.jaimesind.com/#sle](http://www.jaimesind.com/#sle).
3. Marino: [www.marinoware.com/#sle](http://www.marinoware.com/#sle).
4. Substitutions: See Section 01 6000 - Product Requirements.

## 2.02 FRAMING MATERIALS

- A. Non-Loadbearing Framing System Components: ASTM C645; galvanized sheet steel, of size and properties necessary to comply with ASTM C754 for the spacing indicated, with maximum deflection of wall framing of L/240 at 5 psf.
  1. Studs: C shaped with knurled or embossed faces.
  2. Runners: U shaped, sized to match studs.
  3. Ceiling Channels: C shaped.
  4. Furring: Hat-shaped sections, minimum depth of 7/8 inch.
  5. Resilient Sound Isolation Clips: Steel resilient clips with molded rubber isolators, attaches to framing; improves noise isolation for areas between gypsum board assemblies and adjacent sources of noise.
    - a. Products:
      - 1) ClarkDietrich; Sound Clip (CDSC): [www.clarkdietrich.com/#sle](http://www.clarkdietrich.com/#sle).
      - 2) Substitutions: See Section 01 6000 - Product Requirements.
- B. Partition Head to Structure Connections: Provide mechanical anchorage devices that accommodate deflection using slotted holes, screws, and anti-friction bushings, preventing rotation of studs while maintaining structural performance of partition.
  1. Structural Performance: Maintain lateral load resistance and vertical movement capacity required by applicable code, when evaluated in accordance with AISI S100.
  2. Material: ASTM A653/A653M steel sheet, SS Grade 50, with G60/Z180 hot-dipped galvanized coating.
- C. Non-Loadbearing Framing Accessories:
  1. Ceiling Hangers: Type and size as specified in ASTM C754 for spacing required.
  2. Partial Height Wall Framing Support: Provides stud reinforcement and anchored connection to floor.
  3. Framing Connectors: ASTM A653/A653M G90 galvanized steel clips; secures cold rolled channel to wall studs for lateral bracing.
    - a. Products:
      - 1) ClarkDietrich; FastBridge Clip (FB33): [www.clarkdietrich.com/#sle](http://www.clarkdietrich.com/#sle).
      - 2) Substitutions: See Section 01 6000 - Product Requirements.
  4. Flexible Wood Backing: Fire-retardant-treated wood with sheet steel connectors.
    - a. Products:
      - 1) ClarkDietrich; Danback: [www.clarkdietrich.com/#sle](http://www.clarkdietrich.com/#sle).
      - 2) Substitutions: See Section 01 6000 - Product Requirements.
  5. Sheet Metal Backing: 0.036 inch thick, galvanized.
  6. Fasteners: ASTM C1002 self-piercing tapping screws.
  7. Anchorage Devices: Powder actuated.
  8. Acoustic Insulation: As specified in Section 07 2100.
  9. Acoustic Sealant: Acrylic emulsion latex or water-based elastomeric sealant; do not use solvent-based non-curing butyl sealant.
- D. Sound Isolation Tape: Elastomeric foam tape for sound decoupling.
  1. Surface Burning Characteristics: Provide assemblies with flame spread index of 75 or less and smoke developed index of 450 or less, when tested in accordance with ASTM E84.
  2. Tape Thickness: 1/4 inch.
  3. Products:
    - a. Armacell LLC; ArmaSound MTD: [www.armacell.us/#sle](http://www.armacell.us/#sle).
    - b. Substitutions: See Section 01 6000 - Product Requirements.

## **2.03 FABRICATION**

- A. Fabricate assemblies of framed sections to sizes and profiles required.
- B. Fit, reinforce, and brace framing members to suit design requirements.
- C. Fit and assemble in largest practical sections for delivery to site, ready for installation.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify existing conditions before starting work.

### **3.02 INSTALLATION OF STUD FRAMING**

- A. Comply with requirements of ASTM C754.
- B. Extend partition framing to structure where indicated and to ceiling in other locations.
- C. Partitions Terminating at Ceiling: Attach ceiling runner securely to ceiling track in accordance with manufacturer's instructions.
- D. Align and secure top and bottom runners at 24 inches on center.
- E. Fit runners under and above openings; secure intermediate studs to same spacing as wall studs.
- F. Align stud web openings horizontally.
- G. Secure studs to tracks using crimping method. Do not weld.
- H. Fabricate corners using a minimum of three studs.
- I. Install double studs at wall openings, door and window jambs, not more than 2 inches from each side of openings.
- J. Coordinate installation of bucks, anchors, and blocking with electrical, mechanical, and other work to be placed within or behind stud framing.
- K. Sound Isolation Clips: Mechanically attach to framing or structure with fasteners recommended by clip manufacturer. Install at spacing indicated on drawings.
- L. Furring: Coordinate with sound isolation clip spacing and locations. Lap splices a minimum of 6 inches.

### **3.03 CEILING AND SOFFIT FRAMING**

- A. Comply with requirements of ASTM C754.
- B. Install furring after work above ceiling or soffit is complete. Coordinate the location of hangers with other work.
- C. Install furring independent of walls, columns, and above-ceiling work.
- D. Securely anchor hangers to structural members or embed them in structural slab. Space hangers as required to limit deflection to criteria indicated. Use rigid hangers at exterior soffits.
- E. Space main carrying channels at maximum 72 inch on center, and not more than 6 inches from wall surfaces. Lap splice securely.
- F. Securely fix carrying channels to hangers to prevent turning or twisting and to transmit full load to hangers.
- G. Place furring channels perpendicular to carrying channels, not more than 2 inches from perimeter walls, and rigidly secure. Lap splices securely.

### **3.04 TOLERANCES**

- A. Maximum Variation From True Position: 1/8 inch in 10 feet.

**END OF SECTION**

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**SECTION 09 3000  
TILING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Tile for floor applications.
- B. Tile for wall applications.
- C. Cementitious backer board as tile substrate.
- D. Stone thresholds.
- E. Non-ceramic trim.

**1.02 RELATED REQUIREMENTS**

- A. Section 07 9200 - Joint Sealants: Sealing joints between tile work and adjacent construction and fixtures.
- B. Section 09 0561 - Common Work Results for Flooring Preparation: Concrete slab moisture and alkalinity testing and remediation procedures.
- C. Section 09 2116 - Gypsum Board Assemblies: Tile backer board.

**1.03 REFERENCE STANDARDS**

- A. ANSI A108.1a - American National Standard Specifications for Installation of Ceramic Tile in the Wet-Set Method, with Portland Cement Mortar 2017.
- B. ANSI A108.1b - American National Standard Specifications for Installation of Ceramic Tile on a Cured Portland Cement Mortar Setting Bed with Dry-Set or Latex-Portland Cement Mortar 2017.
- C. ANSI A108.1c - Contractor's Option: Installation of Ceramic Tile in the Wet-Set Method with Portland Cement Mortar or Installation of Ceramic Tile on a Cured Portland Cement Mortar Setting Bed with Dry-Set or Latex-Portland Cement Mortar 1999 (Reaffirmed 2021).
- D. ANSI A108.2 - American National Standard General Requirements: Materials, Environmental and Workmanship 2019.
- E. ANSI A108.4 - American National Standard Specifications for Installation of Ceramic Tile with Organic Adhesives or Water Cleanable Tile-Setting Epoxy Adhesive 2019.
- F. ANSI A108.5 - American National Standard Specifications for Installation of Ceramic Tile with Dry-Set Portland Cement Mortar or Latex-Portland Cement Mortar 2020.
- G. ANSI A108.6 - American National Standard Specifications for Installation of Ceramic Tile with Chemical Resistant, Water Cleanable Tile-Setting and -Grouting Epoxy 1999 (Reaffirmed 2019).
- H. ANSI A108.8 - American National Standard Specifications for Installation of Ceramic Tile with Chemical Resistant Furan Resin Mortar and Grout 1999 (Reaffirmed 2019).
- I. ANSI A108.9 - American National Standard Specifications for Installation of Ceramic Tile with Modified Epoxy Emulsion Mortar/Grout 1999 (Reaffirmed 2019).
- J. ANSI A108.10 - American National Standard Specifications for Installation of Grout in Tilework 2017.
- K. ANSI A108.11 - American National Standard Specifications for Interior Installation of Cementitious Backer Units 2018.
- L. ANSI A108.12 - American National Standard for Installation of Ceramic Tile with EGP (Exterior Glue Plywood) Latex-Portland Cement Mortar 1999 (Reaffirmed 2019).
- M. ANSI A108.13 - American National Standard for Installation of Load Bearing, Bonded, Waterproof Membranes for Thin-Set Ceramic Tile and Dimension Stone 2005 (Reaffirmed 2021).

- N. ANSI A108.19 - American National Standard Specifications for Interior Installation of Gauged Porcelain Tiles and Gauged Porcelain Tile Panels/Slabs by the Thin-Bed Method Bonded with Modified Dry-Set Cement Mortar or Improved Modified Dry-Set Cement Mortar 2020.
- O. ANSI A118.7 - American National Standard Specifications for High Performance Cement Grouts for Tile Installation 2010 (Reaffirmed 2016).
- P. ANSI A118.11 - American National Standard Specifications for EGP (Exterior Glue Plywood) Latex-Portland Cement Mortar 1999 (Reaffirmed 2010).
- Q. ANSI A118.12 - American National Standard Specifications for Crack Isolation Membranes for Thin-Set Ceramic Tile and Dimension Stone Installation 2014.
- R. ANSI A118.15 - American National Standard Specifications for Improved Modified Dry-Set Cement Mortar 2012.
- S. ANSI A137.1 - American National Standard Specifications for Ceramic Tile 2021.
- T. ASTM C373 - Standard Test Methods for Determination of Water Absorption and Associated Properties by Vacuum Method for Pressed Ceramic Tiles and Glass Tiles and Boil Method for Extruded Ceramic Tiles and Non-tile Fired Ceramic Whiteware Products 2018.
- U. ASTM F710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring 2021.
- V. ASTM F1869 - Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride 2016a.
- W. ASTM F2170 - Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes 2019a.
- X. TCNA (HB) - Handbook for Ceramic, Glass, and Stone Tile Installation 2019.

#### **1.04 SUBMITTALS**

- A. See Section 01 3300- Administrative Requirements for submittal procedures.
- B. Product Data: Provide manufacturers' data sheets on tile, mortar, grout, and accessories. Include instructions for using grouts and adhesives.
- C. Shop Drawings: Indicate tile layout, patterns, perimeter conditions, junctions with dissimilar materials, control and expansion joints, thresholds, and setting details.
- D. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
- E. Master Grade Certificate: Submit for each type of tile, signed by the tile manufacturer and tile installer.
- F. Installer's Qualification Statement:
  - 1. Submit documentation of National Tile Contractors Association (NTCA) or Tile Contractors' Association of America (TCAA) accreditation.
  - 2. Submit documentation of completion of apprenticeship and certification programs.
- G. Maintenance Data: Include recommended cleaning methods, cleaning materials, and stain removal methods.
- H. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
  - 1. See Section 01 6000 - Product Requirements, for additional provisions.
  - 2. Extra Tile: 1 percent of each size, color, and surface finish combination, but not less than 20 of each type.

#### **1.05 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Company specializing in manufacturing the types of products specified in this section, with minimum five years of documented experience.
- B. Installer Qualifications:
  - 1. Company specializing in performing tile installation, with minimum of five years of documented experience.



- a. Accredited Five-Star member of the National Tile Contractors Association (NTCA) or Trowel of Excellence member of the Tile Contractors' Association of America (TCAA).
- 2. Installer Certification:
  - a. Ceramic Tile Education Foundation (CTEF): Certified Tile Installer (CTI).
  - b. Apprenticeship Program: Installer has achieved Journeyworker status through an apprenticeship from the International Union of Bricklayers and Allied Craftworkers (IUBAC) or a U.S. Department of Labor (DOL)-recognized program.
  - c. Advanced Certifications for Tile Installers (ACT): Certification in the installation of membranes, mortar bed (mud) floors, large format tile, gauged porcelain tile/panels/slabs, and grouts.

#### **1.06 MOCK-UP**

- A. See Section 01 4000 - Quality Requirements, for general requirements for mock-up.
- B. Construct tile mock-up as directed by architect incorporating all components specified for the location.
  - 1. Location to be in a Toilet Room and should include wall tile in a minimum 6' x 6' size and integrated with the wall/floor joint with floor tile of similar size.
  - 2. Approved mock-up may remain as part of the Work.

#### **1.07 DELIVERY, STORAGE, AND HANDLING**

- A. Protect adhesives from freezing or overheating in accordance with manufacturer's instructions.

#### **1.08 FIELD CONDITIONS**

- A. Do not install solvent-based products in an unventilated environment.
- B. Maintain ambient and substrate temperature above 50 degrees F and below 100 degrees F during installation and curing of setting materials.

### **PART 2 PRODUCTS**

#### **2.01 TILE**

- A. Manufacturers: All products by the same manufacturer.
  - 1. Basis of Design: Emser Tile, LLC: [www.emser.com/#sle](http://www.emser.com/#sle).
  - 2. Substitutions: See Section 01 6000 - Product Requirements.
- B. Types:
  - 1. PT-1: Size: 12" x 24"- Color- "Network White"- (Wall Tile).
  - 2. PT-2: Size: 12" x 24"- Color- "Network Silver"- (Floor Tile for Restrooms).
  - 3. PT-3: Size: 3" x 6" - Color- 3 colors TBD. (Glazed Porcelain Wall Tile).
  - 4. PT-4: Size: 31" x 31"- Color- "Network Silver"- (Floor Tile for Lobby).
- C. Glazed Porcelain Wall Tile- Emser Tile Series: "Back to Basics" , Type PT-3: ANSI A137.1 standard grade.
  - 1. Moisture Absorption: 7.0 to 20.0 percent as tested in accordance with ASTM C373.
  - 2. Size: 3 by 6 inch, nominal.
  - 3. Edges: Cushioned.
  - 4. Surface Finish: Matte glaze.
  - 5. Color(s): 3 colors- field color and 2 colors for a band effect.
  - 6. Products:
    - a. Emser Tile; [www.emser.com/#sle](http://www.emser.com/#sle).
    - b. Substitutions: See Section 01 6000 - Product Requirements.
- D. Porcelain Tile- Emser Tile Series "Network" , Type PT-1; PT-2; PT-4: ANSI A137.1 standard grade.
  - 1. Moisture Absorption: 0 to 0.5 percent as tested in accordance with ASTM C373.
  - 2. Sizes: 12 by 24 inch (Type PT-1 & PT-2); 31 x 31 inch (Type-PT-4), nominal.
  - 3. Color(s): PT-1: "Network White"; PT-2 & PT-4: "Network Silver".
  - 4. Products:
    - a. Emser Tile; [www.emser.com/#sle](http://www.emser.com/#sle).

- b. Substitutions: See Section 01 6000 - Product Requirements.

## 2.02 TRIM AND ACCESSORIES

- A. Non-Ceramic Trim: Brushed stainless steel, provide the following Schluter styles in locations noted, in size required for fit and depth of tile/system & for setting using tile mortar or adhesive:
  - 1. Schluter "2.3- JOLLY": at top of tile on walls. in size required for fit and depth of tile/system.
  - 2. Schluter "DILEX-HKU": at inside wall corners and floor/wall transitions.
  - 3. Schluter "DECO-DE": at outside wall corners.
- B. Accessories Manufacturer: Basis of Design: Schluter Systems: [www.schluter.com/#sle](http://www.schluter.com/#sle).
- C. Thresholds: 2 inches wide by full width of wall or frame opening; beveled edge on both long edges; without holes, cracks, or open seams.
  - 1. Thickness: 1/2 inch.
  - 2. Material: Natural Marble- size as shown on threshold detail.
  - 3. Applications:
    - a. At doorways where tile terminates.

## 2.03 SETTING MATERIALS

- A. Provide setting and grout materials from same manufacturer.
- B. Manufacturers:
  - 1. ARDEX Engineered Cements: [www.ardexamericas.com/#sle](http://www.ardexamericas.com/#sle).
  - 2. H.B. Fuller Construction Products, Inc: [www.tecspecialty.com/#sle](http://www.tecspecialty.com/#sle).
  - 3. LATICRETE International, Inc: [www.laticrete.com/#sle](http://www.laticrete.com/#sle).
  - 4. Substitutions: See Section 01 6000 - Product Requirements.
- C. Improved Latex-Portland Cement Mortar Bond Coat: ANSI A118.15.
  - 1. Applications: Use this type of bond coat where Large and Heavy Tile (LHT) mortar is indicated. For use with 31 x 31" tile in Lobby.
  - 2. Products:
    - a. ARDEX Engineered Cements; S 28: [www.ardexamericas.com/#sle](http://www.ardexamericas.com/#sle).
    - b. Custom Building Products; Complete Contact-LFT Premium Rapid Setting Large Format Tile Mortar, with Multi-Surface Bonding Primer: [www.custombuildingproducts.com/#sle](http://www.custombuildingproducts.com/#sle).
    - c. LATICRETE International, Inc; MULTIMAX LITE: [www.laticrete.com/#sle](http://www.laticrete.com/#sle).
    - d. Substitutions: See Section 01 6000 - Product Requirements.
- D. Water Based Adhesive: Multi-purpose type mastic.
  - 1. Applications: walls and floors with 12 x 24" tile, or subway tile.
  - 2. Products:
    - a. Stauf USA, LLC; M420 Spot Tack: [www.staufusa.com/#sle](http://www.staufusa.com/#sle).
    - b. Substitutions: See Section 01 6000 - Product Requirements.
- E. Mortar Bond Coat For Exterior Glue Plywood: ANSI A118.11.
  - 1. Applications: Use this type of bond coat where thin-set installation is indicated over plywood.
  - 2. Products:
    - a. ARDEX Engineered Cements; ARDEX X 5: [www.ardexamericas.com/#sle](http://www.ardexamericas.com/#sle).
    - b. Custom Building Products; Complete Contact-LFT Premium Rapid Setting Large Format Tile Mortar: [www.custombuildingproducts.com/#sle](http://www.custombuildingproducts.com/#sle).
    - c. LATICRETE International, Inc; LATICRETE 254 Platinum: [www.laticrete.com/#sle](http://www.laticrete.com/#sle).

## 2.04 GROUTS

- A. Provide setting and grout materials from same manufacturer.
- B. Manufacturers:
  - 1. ARDEX Engineered Cements: [www.ardexamericas.com/#sle](http://www.ardexamericas.com/#sle).
  - 2. Custom Building Products: [www.custombuildingproducts.com/#sle](http://www.custombuildingproducts.com/#sle).

3. LATICRETE International, Inc; LATICRETE PERMACOLOR Grout: [www.laticrete.com/#sle](http://www.laticrete.com/#sle).
  4. Substitutions: See Section 01 6000 - Product Requirements.
- C. High Performance Polymer Modified Grout: ANSI A118.7 polymer modified cement grout.
1. Applications: Use this type of grout where indicated and where no other type of grout is indicated.
  2. Use sanded grout for joints 1/8 inch wide and larger; use unsanded grout for joints less than 1/8 inch wide.
  3. Color(s): As selected by Architect from manufacturer's full line.
  4. Products:
    - a. ARDEX Engineered Cements; ARDEX FL: [www.ardexamericas.com/#sle](http://www.ardexamericas.com/#sle).
    - b. Custom Building Products; Prism Color Consistent Grout: [www.custombuildingproducts.com/#sle](http://www.custombuildingproducts.com/#sle).
    - c. LATICRETE International, Inc; LATICRETE PERMACOLOR Grout: [www.laticrete.com/#sle](http://www.laticrete.com/#sle).
    - d. Substitutions: See Section 01 6000 - Product Requirements.

## 2.05 MAINTENANCE MATERIALS

- A. Tile Sealant: Gunnable, silicone, siliconized acrylic, or urethane sealant; moisture and mildew resistant type.
1. Applications: Between tile and plumbing fixtures.
  2. Color(s): As selected by Architect from manufacturer's full line.
  3. Products:
    - a. ARDEX Engineered Cements; ARDEX SX: [www.ardexamericas.com/#sle](http://www.ardexamericas.com/#sle).
    - b. Custom Building Products; Commercial 100% Silicone Caulk: [www.custombuildingproducts.com/#sle](http://www.custombuildingproducts.com/#sle).
    - c. LATICRETE International, Inc; LATICRETE LATASIL: [www.laticrete.com/#sle](http://www.laticrete.com/#sle).
    - d. Substitutions: See Section 01 6000 - Product Requirements.
- B. Grout Sealer: Liquid-applied, moisture and stain protection for existing or new Portland cement grout.
1. Composition: Water-based colorless silicone.
  2. Color(s): As selected by Architect from manufacturer's full line.
  3. Products:
    - a. Merkrete, by Parex USA, Inc; Merkrete Grout Sealer: [www.merkrete.com/#sle](http://www.merkrete.com/#sle).
    - b. Substitutions: See Section 01 6000 - Product Requirements.

## 2.06 ACCESSORY MATERIALS

- A. Concrete Floor Slab Crack Isolation Membrane: Material complying with ANSI A118.12; not intended as waterproofing.
1. Crack Resistance: No failure at 1/8 inch gap, minimum.
  2. Fluid or Trowel Applied Type:
    - a. Material: Synthetic rubber or Acrylic.
    - b. Thickness: 20 mils, maximum.
    - c. Products:
      - 1) H.B. Fuller Construction Products, Inc; TEC HydraFlex Waterproofing Crack Isolation Membrane: [www.tecspecialty.com/#sle](http://www.tecspecialty.com/#sle).
      - 2) LATICRETE International, Inc; LATICRETE Blue 92 Anti-Fracture Membrane: [www.laticrete.com/#sle](http://www.laticrete.com/#sle).
      - 3) Merkrete, by Parex USA, Inc; Merkrete Fracture Guard: [www.merkrete.com/#sle](http://www.merkrete.com/#sle).
      - 4) Substitutions: See Section 01 6000 - Product Requirements.
- B. Backer Board: Cementitious type complying with ANSI A118.9; high density, glass fiber reinforced, 1/2 inch thick; 2 inch wide coated glass fiber tape for joints and corners.
1. Products:

- a. Custom Building Products; WonderBoard Lite Backerboard:  
www.custombuildingproducts.com/#sle.
- b. Substitutions: See Section 01 6000 - Product Requirements.

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

- A. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive tile.
- B. Cementitious Subfloor Surfaces: Verify that substrates are ready for tiling installation by testing for moisture and alkalinity (pH).
  - 1. Test in accordance with Section 09 0561.
  - 2. Test as Follows:
    - a. Alkalinity (pH): ASTM F710.
    - b. Internal Relative Humidity: ASTM F2170.
    - c. Moisture Vapor Emission: ASTM F1869.
  - 3. Obtain instructions if test results are not within limits recommended by tiling material manufacturer and setting material manufacturer.
  - 4. Follow moisture and alkalinity remediation procedures in Section 09 0561.
- C. Verify that required floor-mounted utilities are in correct location.

#### **3.02 PREPARATION**

- A. Protect surrounding work from damage.
- B. Vacuum clean surfaces and damp clean.
- C. Seal substrate surface cracks with filler. Level existing substrate surfaces to acceptable flatness tolerances.
- D. Install backer board in accordance with ANSI A108.11 and board manufacturer's instructions. Tape joints and corners, cover with skim coat of setting material to a feather edge.
- E. Prepare substrate surfaces for adhesive installation in accordance with adhesive manufacturer's instructions.

#### **3.03 INSTALLATION - GENERAL**

- A. Install tile, thresholds, and stair treads and grout in accordance with applicable requirements of ANSI A108.1a through ANSI A108.19, manufacturer's instructions, and TCNA (HB) recommendations.
- B. Lay tile to pattern indicated. Do not interrupt tile pattern through openings.
- C. Cut and fit tile to penetrations through tile, leaving sealant joint space. Form corners and bases neatly. Align floor joints.
- D. Place tile joints uniform in width, subject to variance in tolerance allowed in tile size. Make grout joints without voids, cracks, excess mortar or excess grout, or too little grout.
- E. Form internal angles square and external angles bullnosed.
- F. Install non-ceramic trim in accordance with manufacturer's instructions.
- G. Install thresholds where indicated.
- H. Sound tile after setting. Replace hollow sounding units.
- I. Keep control and expansion joints free of mortar, grout, and adhesive.
- J. Prior to grouting, allow installation to completely cure; minimum of 48 hours.
- K. Grout tile joints unless otherwise indicated. Use standard grout unless otherwise indicated.
- L. At changes in plane and tile-to-tile control joints, use tile sealant instead of grout, with either bond breaker tape or backer rod as appropriate to prevent three-sided bonding.

#### **3.04 INSTALLATION - FLOORS - MORTAR BED METHODS**

- A. Over interior concrete substrates, install in accordance with TCNA (HB) Method F111, with cleavage membrane, unless otherwise indicated.
- B. Over wood substrates, install in accordance with TCNA (HB) Method F141, with standard grout, unless otherwise indicated.
- C. Cleavage Membrane: Lap edges and ends.
- D. Mortar Bed Thickness: 5/8 inch, unless otherwise indicated.

#### **3.05 INSTALLATION - WALL TILE**

- A. Over cementitious backer units on studs, install in accordance with TCNA (HB) Method W244, using membrane at toilet rooms.
- B. Over interior concrete and masonry install in accordance with TCNA (HB) Method W202, thin-set with dry-set or latex-Portland cement bond coat.

#### **3.06 CLEANING**

- A. Clean tile and grout surfaces.

#### **3.07 PROTECTION**

- A. Do not permit traffic over finished floor surface for 4 days after installation.

**END OF SECTION**

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**SECTION 09 5100  
ACOUSTICAL CEILINGS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Suspended metal grid ceiling system.
- B. Acoustical units.

**1.02 RELATED REQUIREMENTS**

- A. Section 01 6116 - Volatile Organic Compound (VOC) Content Restrictions.

**1.03 REFERENCE STANDARDS**

- A. ASCE 7 - Minimum Design Loads and Associated Criteria for Buildings and Other Structures Most Recent Edition Cited by Referring Code or Reference Standard.
- B. ASTM C635/C635M - Standard Specification for the Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings 2017.
- C. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials 2020.
- D. ASTM E1264 - Standard Classification for Acoustical Ceiling Products 2019.

**1.04 ADMINISTRATIVE REQUIREMENTS**

- A. Sequence work to ensure acoustical ceilings are not installed until building is enclosed, sufficient heat is provided, dust generating activities have terminated, and overhead work is completed, tested, and approved.
- B. Do not install acoustical units until after interior wet work is dry.

**1.05 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on suspension system components and acoustical units.
- C. Samples: Submit two full size samples illustrating material and finish of acoustical units.
- D. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
  - 1. See Section 01 6000 - Product Requirements, for additional provisions.
  - 2. Extra Acoustical Units: Quantity equal to 5 percent of total installed.

**1.06 QUALITY ASSURANCE**

- A. Suspension System Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.

**1.07 FIELD CONDITIONS**

- A. Maintain uniform temperature of minimum 60 degrees F, and maximum humidity of 40 percent prior to, during, and after acoustical unit installation.

**PART 2 PRODUCTS**

**2.01 MANUFACTURERS**

- A. Acoustic Tiles/Panels:
  - 1. Armstrong World Industries, Inc: [www.armstrongceilings.com/#sle](http://www.armstrongceilings.com/#sle).
  - 2. CertainTeed Corporation: [www.certainteed.com/#sle](http://www.certainteed.com/#sle).
  - 3. USG Corporation: [www.usg.com/ceilings/#sle](http://www.usg.com/ceilings/#sle).
  - 4. Substitutions: See Section 01 6000 - Product Requirements.
- B. Suspension Systems:
  - 1. Same as for acoustical units.
  - 2. Substitutions: See Section 01 6000 - Product Requirements.

## 2.02 PERFORMANCE REQUIREMENTS

- A. Fire-Resistance Rating: Determined in accordance with test procedures in ASTM E119 and complying with the following:
  - 1. UL (FRD) Assembly Design No. as noted on documents.
- B. Seismic Performance: Ceiling systems designed to withstand the effects of earthquake motions determined according to ASCE 7 for Seismic Design Category C and complying with the following:
  - 1. ICC-ES Evaluation Report No. 7-16.

## 2.03 ACOUSTICAL UNITS

- A. Acoustical Units - General: ASTM E1264, Class A.
  - 1. VOC Content: As specified in Section 01 6116.
- B. Acoustical Panels, Type ACT-1: Painted wet-formed mineral fiber, with the following characteristics:
  - 1. Application(s): Offices, Classrooms, Corridors, Cafeteria.
  - 2. Classification: ASTM E1264 Type III.
  - 3. Size: 24 by 24 inches.
  - 4. Thickness: 3/4 inch.
  - 5. Light Reflectance: .86 percent, determined in accordance with ASTM E1264.
  - 6. NRC Range: .60, determined in accordance with ASTM E1264.
  - 7. Panel Edge: Square (SQ) for all areas *except* the following rooms to have "Shadowline" tapered edge (SLT): Rms. 109, 112, 112A, 112B, 112C, 112D and 112F.
  - 8. Color: White.
  - 9. Suspension System Type DX- 15/16": Exposed grid.
  - 10. Products:
    - a. USG Corporation; Olympia Micro Acoustical Panels- 60 NRC; [www.usg.com/ceilings/#sle](http://www.usg.com/ceilings/#sle).
    - b. Substitutions: See Section 01 6000 - Product Requirements.
- C. Acoustical Panels, Type ACT-2: Mineral fiber with scrubbable finish, with the following characteristics:
  - 1. Applications: Kitchen, Dishwash, Restrooms.
  - 2. Classification: ASTM E1264 Type IX.
  - 3. Size: 24 by 24 inches.
  - 4. Thickness: 5/8 inches.
  - 5. Light reflectance: 0.90
  - 6. Panel Edge: Square.
  - 7. Suspension System Type DX-15/16": Exposed grid.
  - 8. Products:
    - 1) USG Corporation; Kitchen Lay-In Panels: [www.usg.com/ceilings/#sle](http://www.usg.com/ceilings/#sle).
    - 2) Substitutions: See Section 01 6000 - Product Requirements.
- D. Acoustical Panels, Type ACT-3: Gypsum, with the following characteristics:
  - 1. Applications: Locker Rooms.
  - 2. Classification: ASTM E1264 Type XX.
  - 3. Size: 24 by 24 inches.
  - 4. Thickness: 1/2".
  - 5. Light reflectance: 86 percent, determined in accordance with ASTM E1264.
  - 6. NRC Range: 0.77, determined in accordance with ASTM E1264.
  - 7. Ceiling Attenuation Class (CAC): 35, determined in accordance with ASTM E1264.
  - 8. Panel Edge: Square.
  - 9. Suspension System: Type DX- 15/16", Exposed grid. Provide hold-down clips for both Locker Rooms and associated Corridors and Toilet Rooms.
  - 10. Products:



- a. USG Corporation; USG Sheetrock brand lay-in Gypsum Ceiling Panels: [www.usg.com/ceilings/#sle](http://www.usg.com/ceilings/#sle).
  - b. Substitutions: See Section 01 6000 - Product Requirements.
- E. Acoustical Panels, Type ACT-4: High NRC/CAC, with the following characteristics:
  - 1. Applications: Band and Chrous Rooms.
  - 2. Classification: ASTM E1264 Type XX.
  - 3. Size: 24 by 24 inches.
  - 4. Thickness: 1 1/2 inches.
  - 5. Light Reflectance: .90 percent, determined in accordance with ASTM E1264.
  - 6. NRC Range: 1.00, determined in accordance with ASTM E1264.
  - 7. Ceiling Attenuation Class (CAC): 30, determined in accordance with ASTM E1264.
  - 8. Panel Edge: Square.
  - 9. Suspension System Type DX-15/16": Exposed grid.
  - 10. Products: Basis of Design: subject to compliance with project requirements, the design is based on the following:
    - a. USG Corporation; Halcyon series: [www.usg.com/ceilings/#sle](http://www.usg.com/ceilings/#sle).
    - b. Substitutions: See Section 01 6000 - Product Requirements.

#### **2.04 SUSPENSION SYSTEM(S)**

- A. Metal Suspension Systems - General: Complying with ASTM C635/C635M; die cut and interlocking components, with perimeter moldings, hold down clips, stabilizer bars, clips, and splices as required.
- B. Exposed Suspension System: Hot-dipped galvanized steel grid with aluminum cap.
  - 1. Application(s): Seismic - for Design Category C.
  - 2. Structural Classification: Intermediate-duty, when tested in accordance with ASTM C635/C635M.
  - 3. Profile: Tee; 15/16 inch face width.
  - 4. Finish: Baked enamel.
  - 5. Color: White.
  - 6. Products:
    - a. Armstrong World Industries; Prelude 15/15.
    - b. Substitutions: See Section 01 6000 - Product Requirements.

#### **2.05 ACCESSORIES**

- A. Support Channels and Hangers: Galvanized steel; size and type to suit application, seismic requirements, and ceiling system flatness requirement specified.
- B. Hanger Wire: 12 gauge, 0.08 inch galvanized steel wire.
- C. Hold-Down Clips: Manufacturer's standard clips to suit application.
- D. Seismic Clips: Manufacturer's standard clips for seismic conditions and to suit application.
- E. Perimeter Moldings: Same metal and finish as grid.
  - 1. Size: As required for installation conditions and specified Seismic Design Category.
  - 2. Angle Molding: L-shaped, for mounting at same elevation as face of grid.
- F. Metal Edge Trim for "Cloud" Suspension Systems: Steel or extruded aluminum; provide attachment clips, splice plates, and preformed corner pieces for complete trim system.
  - 1. Trim Height: 6 inch.
  - 2. Finish: Baked enamel.
  - 3. Color: White.
  - 4. Products:
    - a. Armstrong World Industries; Axiom trim.
    - b. Substitutions: See Section 01 6000 - Product Requirements.

## **PART 3 EXECUTION**

### **3.01 INSTALLATION - SUSPENSION SYSTEM**

- A. Rigidly secure system, including integral mechanical and electrical components, for maximum deflection of 1:360.
- B. Perimeter Molding: Install at intersection of ceiling and vertical surfaces and at junctions with other interruptions.
  - 1. Use longest practical lengths.
- C. Suspension System, Non-Seismic: Hang suspension system independent of walls, columns, ducts, pipes and conduit. Where carrying members are spliced, avoid visible displacement of face plane of adjacent members.
- D. Seismic Suspension System, Seismic Design Category C: Hang suspension system independent of walls, columns, ducts, pipes and conduit. Maintain a 3/8 inch clearance between grid ends and wall.
- E. Where ducts or other equipment prevent the regular spacing of hangers, reinforce the nearest affected hangers and related carrying channels to span the extra distance.
- F. Do not support components on main runners or cross runners if weight causes total dead load to exceed deflection capability.
- G. Support fixture loads using supplementary hangers located within 6 inches of each corner, or support components independently.
- H. Do not eccentrically load system or induce rotation of runners.

### **3.02 INSTALLATION - ACOUSTICAL UNITS**

- A. Install acoustical units in accordance with manufacturer's instructions.
- B. Fit acoustical units in place, free from damaged edges or other defects detrimental to appearance and function.
- C. Fit border trim neatly against abutting surfaces.
- D. Install acoustical units level, in uniform plane, and free from twist, warp, and dents.
- E. Cutting Acoustical Units:
  - 1. Make field cut edges of same profile as factory edges.

### **3.03 TOLERANCES**

- A. Maximum Variation from Flat and Level Surface: 1/8 inch in 10 feet.
- B. Maximum Variation from Plumb of Grid Members Caused by Eccentric Loads: 2 degrees.

**END OF SECTION**

**SECTION 09 5400  
SPECIALTY CEILINGS - USG**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Specialty ceiling panels and systems.

**1.02 RELATED REQUIREMENTS**

- A. Section : Metal suspension systems.

**1.03 REFERENCE STANDARDS**

- A. ASTM C635/C635M - Standard Specification for the Manufacture, Performance, and Testing of Metal Suspension Systems for Acoustical Tile and Lay-in Panel Ceilings 2017.
- B. ASTM C636/C636M - Standard Practice for Installation of Metal Ceiling Suspension Systems for Acoustical Tile and Lay-In Panels 2019.

**1.04 ADMINISTRATIVE REQUIREMENTS**

- A. Coordination: Coordinate work of this section with installation of mechanical and electrical components and with other construction activities affected by work of this section.
- B. Preinstallation Meeting: Convene one week before starting work of this section.
- C. Sequence work to ensure ceilings are not installed until building is enclosed, dust generating activities have terminated, and overhead work is completed.

**1.05 SUBMITTALS**

- A. See Section 01 3300- Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Indicate grid layout and related dimensioning, attachment of specialty ceiling panels to grid, accessory attachments, junctions with other ceiling finishes, and mechanical and electrical items installed in the ceiling.
- C. Samples: Submit two 6 by 6 inch samples illustrating material and finish of specialty ceiling components.

**1.06 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.
- B. Installer Qualifications: Company specializing in performing the work of this section.

**1.07 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver specialty ceiling components to project site in original, unopened packages.
- B. Store in fully enclosed space, flat, level and off the floor.

**1.08 FIELD CONDITIONS**

- A. Do not install specialty ceiling system until wet construction work is complete and permanent heat and air conditioning is installed and operating.

**PART 2 PRODUCTS**

**2.01 SPECIALTY CEILING ASSEMBLIES**

- A. Refer to Reflected Ceiling Plans on drawings for additional ceiling assemblies information.
- B. Specialty Ceiling Assembly Type SC-1:
  - 1. Basis of Design: Armstrong- Acoustical Canopies- "Soundscapes" Mineral fiber panels pre-formed in canopy shape-Hill-shaped with DuraBrite scrim on all sides, finished square edges.
    - a. Color: As selected by architect/designer..
    - b. Stock Curved Panel Sizes and Radia:
      - 1) 6-Foot Arc Lengths: As indicated on drawings.
  - 2. Specialty Suspension System: by manufacturer.

## **2.02 PERFORMANCE REQUIREMENTS:**

- A. Design for maximum deflection of 1/360 of span.
- B. Design to support imposed loads of indicated elements without eccentric loading of supports. Where supported elements may induce rotation of ceiling system components, provide stabilizing reinforcement.

## **2.03 COMPONENT PRODUCTS**

- A. Panels: "Soundscapes"- sizes as noted on reflected ceiling plans.
- B. Specialty Suspension Systems:
  - 1. Metal Suspension Systems - General: Complying with ASTM C635/C635M; die cut and interlocking components, with perimeter moldings, hold down clips, stabilizer bars, seismic clips, and splices as required.
- C. Moldings and Trim:
  - 1. Edge Molding and Splices: Same material, thickness, and finish as panels, unless otherwise indicated.

## **2.04 ACCESSORIES**

- A. Support Channels, Carriers, and Hangers: Galvanized steel; size and type to suit application and ceiling system flatness requirement specified.
- B. Suspension Wire: Size and type as required for application, seismic requirements, and ceiling system flatness requirement specified.
  - 1. Concealed Suspension:
    - a. Suspension Wire: Steel, annealed, galvanized finish, 12 gage, 0.0808 diameter.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify existing conditions before starting work.
- B. Verify that layout of hangers will not interfere with other work.
- C. Verify that field measurements are as indicated on shop drawings.
- D. Do not begin installation until after interior wet work is dry.
- E. Start of installation constitutes acceptance of project conditions.

### **3.02 PREPARATION**

- A. Coordinate the location of hangers with other work.
- B. Layout ceiling components in pattern according to reflected ceiling plan and as shown on shop drawings.

### **3.03 INSTALLATION - SUSPENSION SYSTEM**

- A. Install suspension system in accordance with ASTM C636/C636M and manufacturer's instructions and as supplemented in this section.
- B. Install hangers and inserts coordinated with overhead work. Provide additional hangers and supports as required.
- C. Rigidly secure system, including integral mechanical and electrical components, for maximum deflection of 1:360.
- D. Suspension System, Non-Seismic: Hang suspension system independent of walls, columns, ducts, pipes and conduit. Where carrying members are spliced, avoid visible displacement of face plane of adjacent members.
- E. Where ducts, facility services, or equipment prevent the regular spacing of hangers, reinforce the nearest affected hangers and related carrying channels to span the extra distance.
- F. Do not support components on main runners or cross runners if weight causes total dead load to exceed deflection capability.

- G. Support fixture loads using supplementary hangers located within 6 inches of each corner, or support components independently.
- H. Do not eccentrically load system or induce rotation of runners.
- I. Edge Moldings: Install at intersection of ceiling and vertical surfaces and penetrations, using components of maximum length, set level. Provide edge moldings at junction with other ceiling finishes. Miter corners. Provide preformed edge closures to match bullnosed cornered partitions.
  - 1. Use longest practical lengths.

#### **3.04 INSTALLATION - SPECIALTY CEILING UNITS**

- A. Install in accordance with manufacturer's instructions.
- B. Fit components in place, free from damaged edges or other defects detrimental to appearance and function.

#### **3.05 TOLERANCES**

- A. Maximum Variation from Flat and Level Surface: 1/8 inch in 10 feet.
- B. Maximum Variation from Plumb of Grid Members Caused by Eccentric Loads: 2 degrees.

#### **3.06 CLEANING**

- A. Clean and touch up minor finish damage. Remove and replace components that cannot be successfully cleaned and repaired.

**END OF SECTION**

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**SECTION 09 6466  
WOOD ATHLETIC FLOORING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Wood athletic flooring.
- B. Subflooring.
- C. Sleepers.
- D. Resilient cushioning.
- E. Sheet vapor retarder.
- F. Floor finishes.
- G. Surface finishing.

**1.02 RELATED REQUIREMENTS**

- A. Section 01 6116 - Volatile Organic Compound (VOC) Content Restrictions - Volatile Organic Compound (VOC) Content Restrictions.
- B. Section 03 3000 - Cast-in-Place Concrete: Concrete subfloor surface; recessed.
- C. Section 03 3000 - Cast-in-Place Concrete: Formed depressions for deep floor sockets and inserts.
- D. Section 06 1000 - Rough Carpentry: Subfloor blocking.

**1.03 REFERENCE STANDARDS**

- A. MFMA (PUR) - Performance and Uniformity Rating Sport Specific Standards current edition.
- B. MFMA (SPEC) - Guide Specifications for Maple Flooring Systems current edition.

**1.04 SUBMITTALS**

- A. See Section 01 3300, for submittal procedures.
- B. Product Data: Provide data for flooring, floor finish materials, and resilient cushion.
- C. Shop Drawings: Indicate floor joint pattern and termination details.
  - 1. Indicate provisions for expansion and contraction, wall base, and game insert or socket devices.
  - 2. Indicate location, size, design, and color of game markings.
- D. Installation Instructions: Indicate standard and special installation procedures.
- E. Maintenance Data: Include maintenance procedures and recommended maintenance materials.
- F. Manufacturer's Qualification Statement.
- G. Installer's Qualification Statement.
- H. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
  - 1. See Section 01 6000 - Product Requirements, for additional provisions.

**1.05 QUALITY ASSURANCE**

- A. Perform work of this section in accordance with MFMA (SPEC).
- B. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section.
  - 1. Minimum three years of documented experience.
  - 2. Member mill of the Maple Flooring Manufacturers Association, Inc (MFMA).
- C. Installer Qualifications: Company specializing in installing products specified in this section.
  - 1. Flooring contractor shall be a Robbins Accredited Installer with MFMA Accredited Installer(s) on-site for the duration of the wood floor installation; or a contractor approved by Robbins Sports Surface

2. Minimum three years of documented experience.

#### **1.06 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver materials and store off the floor in a well-ventilated, weather-tight space.

#### **1.07 FIELD CONDITIONS**

- A. Do not install wood flooring until wet construction work is complete and permanent heat and air conditioning is installed and operating.
- B. Maintain room temperature between 55 degrees F and 75 degrees F and relative humidity between 35 to 50 percent for a period of seven days prior to delivery of materials to installation space, during installation, and after installation.
- C. Acclimate wood flooring materials to installation space a minimum of 48 hours prior to installation.

### **PART 2 PRODUCTS**

#### **2.01 MANUFACTURERS**

- A. Wood Athletic Flooring:
  1. Robbins Sports Surfaces; Eclipse Floating Floor System: [www.robbinsfloor.com/#sle](http://www.robbinsfloor.com/#sle).
  2. Substitutions: Section 01 6000 - Product Requirements.

#### **2.02 WOOD ATHLETIC FLOORING**

- A. General: Wood strip flooring, MFMA (PUR) compliant for application indicated; system components provided by single manufacturer.
- B. Application: Gymnasium.
- C. System Description:
  1. Floating, double layer subfloor system, wood strip flooring.

#### **2.03 COMPONENTS**

- A. Wood Strip Flooring:
  1. Provide MFMA grade-marked flooring, stamped as manufactured by MFMA member mill.
  2. Species: Northern hard maple, kiln dried; tongue and groove edges, end matched.
  3. Grade: First.
  4. Cut: Edge grain.
  5. Moisture Content: 7 to 9 percent.
  6. Thickness: 33/32 inch.
  7. Width: 2-1/4 inches.
  8. Length: Random, minimum of 9 inches.
- B. Subflooring: Manufacturer's standard pre-engineered subfloor suitable for system indicated.
- C. Resilient Cushioning: Manufacturer's standard rubber pads, factory-applied to bottom side of sleepers.
- D. Vapor Retarder: Polyethylene sheet, 6 mil thick; 2 inch wide tape for sealing sheet seams.
- E. Fasteners and Anchors: Manufacturer's standard type and size to suit application.

#### **2.04 FINISHES**

- A. Floor Finishes: Types recommended by flooring manufacturer and complying with MFMA specifications.
  1. Sealer: Oil based urethane.
  2. Finish Coats: Oil based urethane; high gloss.
  3. Game Marking Paint: Compatible with sealer and finish coats; colors as indicated on drawings.

#### **2.05 ACCESSORIES**

- A. Ventilating Base: Molded rubber, 4 inch high with a 1 inch toe, pre-molded outside corners; black color. Basis of Design: Tarkett vented base.



- B. Game Socket Devices: Cast aluminum type, with anchors.
- C. Adhesives: Types recommended by flooring manufacturer.

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

- A. Verify existing conditions before starting this work.
- B. Verify that concrete subfloor surface is smooth and flat to plus or minus 1/4 inch in 10 feet.
- C. Verify that required floor-mounted utilities are in correct location.

#### **3.02 PREPARATION**

- A. Prepare substrate to receive wood flooring in accordance with manufacturer's and MFMA instructions.
- B. Vacuum clean substrate.

#### **3.03 INSTALLATION**

- A. Place vapor retarder over concrete surface, overlap seams a minimum of 6 inches and seal with tape. Turn up sheet against the perimeter wall expansion space the height of the wood flooring.
- B. Resilient Underlayment: Install in accordance with manufacturer's instructions.
- C. Wood Flooring:
  - 1. Install in accordance with manufacturer's and MFMA instructions.
  - 2. Lay flooring parallel to length of main playing area. Blind nail or staple to subfloor.
  - 3. Install edge strips at unprotected or exposed edges, and where flooring terminates.
  - 4. Provide 2 inch expansion space at walls and other interruptions.
- D. Install base at floor perimeter to cover expansion space in accordance with manufacturer's instructions. Miter inside corners.
- E. Install floor sockets and inserts to a depth sufficient to ensure flush top surface with floor surface.
- F. Finishing:
  - 1. Mask off adjacent surfaces before beginning sanding.
  - 2. Sand flooring to smooth even finish with no evidence of sander marks. Remove dust by vacuum.
  - 3. Apply finishes in accordance with floor finish manufacturer's and MFMA instructions.
  - 4. Apply first coat, allow to dry, then buff lightly with recommended pad to remove irregularities. Vacuum clean and wipe with damp, lint-free cloth before applying succeeding coats.
  - 5. Apply last coat of finish.

#### **3.04 CLEANING**

- A. Clean floor surfaces in accordance with floor finish manufacturer's instructions.

#### **3.05 PROTECTION**

- A. Prohibit traffic on finished floor for 72 hours after installation.
- B. Place protective coverings over finished floors; do not remove coverings until Date of Substantial Completion.

**END OF SECTION**

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**SECTION 09 6500  
RESILIENT FLOORING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Resilient sheet flooring.
- B. Resilient tile flooring.
- C. Resilient base.
- D. Resilient stair accessories.
- E. Installation accessories.

**1.02 RELATED REQUIREMENTS**

- A. Section 01 6116 - Volatile Organic Compound (VOC) Content Restrictions.
- B. Section 26 0526 - Grounding and Bonding for Electrical Systems: Grounding and bonding of static control flooring to building grounding system.

**1.03 REFERENCE STANDARDS**

- A. ASTM D6329 - Standard Guide for Developing Methodology for Evaluating the Ability of Indoor Materials to Support Microbial Growth Using Static Environmental Chambers 1998 (Reapproved 2015).
- B. ASTM E648 - Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source 2019a, with Editorial Revision (2020).
- C. ASTM F970 - Standard Test Method for Measuring Recovery Properties of Floor Coverings after Static Loading 2017.
- D. ASTM F1066 - Standard Specification for Vinyl Composition Floor Tile 2004 (Reapproved 2018).
- E. ASTM F1344 - Standard Specification for Rubber Floor Tile 2021a.
- F. ASTM F1700 - Standard Specification for Solid Vinyl Floor Tile 2020.
- G. ASTM F1861 - Standard Specification for Resilient Wall Base 2021.
- H. ASTM F1913 - Standard Specification for Vinyl Sheet Floor Covering Without Backing 2019.
- I. ASTM F2169 - Standard Specification for Resilient Stair Treads 2015 (Reapproved 2020).
- J. NFPA 253 - Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source 2019.
- K. UL 2824 - GREENGUARD Certification Program Method for Measuring Microbial Resistance From Various Sources Using Static Environmental Chambers Current Edition, Including All Revisions.

**1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Indicate seaming plans and floor patterns.
- C. Selection Samples: Submit manufacturer's complete set of color samples for Architect's initial selection.

**1.05 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Company specializing in manufacturing specified flooring with minimum three years documented experience.
- B. Installer Qualifications: Company specializing in installing specified flooring with minimum three years documented experience.

## **1.06 DELIVERY, STORAGE, AND HANDLING**

- A. Upon receipt, immediately remove any shrink-wrap and check materials for damage and the correct style, color, quantity and run numbers.
- B. Store all materials off of the floor in an acclimatized, weather-tight space.
- C. Maintain temperature in storage area between 55 degrees F and 90 degrees F.
- D. Protect roll materials from damage by storing on end.
- E. Do not double stack pallets.

## **1.07 FIELD CONDITIONS**

- A. Store materials for not less than 48 hours prior to installation in area of installation at a temperature of 70 degrees F to achieve temperature stability. Thereafter, maintain conditions above 55 degrees F.

## **PART 2 PRODUCTS**

### **2.01 SHEET FLOORING**

- A. Vinyl Sheet Flooring - Type VSF-1: Homogeneous vinyl sheet without backing, with color and pattern throughout full thickness.
  - 1. Manufacturers:
    - a. Basis of Design: Altro Classic 25-Altro USA, Inc.; [www.altrofloors.com/#sle..](http://www.altrofloors.com/#sle..)
  - 2. Minimum Requirements: Comply with ASTM F1913.
  - 3. Critical Radiant Flux (CRF): Minimum 0.45 watt per square centimeter, when tested in accordance with ASTM E648 or NFPA 253.
  - 4. VOC Content Limits: As specified in Section 01 6116.
  - 5. Thickness: 0.080 inch nominal.
  - 6. Static Load Resistance: 1000 psi minimum, when tested as specified in ASTM F970.
  - 7. Seams: Heat welded- color to match flooring.
  - 8. Integral coved base with cap strip.
  - 9. Color: To be selected by Architect from manufacturer's full range.
- B. Vinyl Sheet Flooring- Type VSF-2: Resilient Heterogeneous vinyl sheet flooring with foam underlayer to reduce noise transmission.
  - 1. Manufacturers:
    - a. Basis of Design: Tarkett- IQ Optima Acoustiflor- Tarkett Commercial; [www.commercial.tarkett.com/#sle](http://www.commercial.tarkett.com/#sle).
  - 2. Minimum requirements: comply with ASTM F1913.
  - 3. Critical Radiant Flux (CRF): Class 1; when tested in accordance with ASTM E648 or NFPA 253.
  - 4. VOC Content Limits: As specified in Section 016116.
  - 5. Thickness: 0.146" nominal (3.7mm).
  - 6. Static Load Limit: 250 psi minimum when tested as specified in ASTM F970.
  - 7. Seams: Heat-welded- color match to flooring.
  - 8. Acoustical: Impact insulation class of 61 IIC when tested in accordance with ASTM E492.
  - 9. Color: to be selected by architect from manufacturer's full-range.

### **2.02 TILE FLOORING**

- A. Vinyl Composition Tile - For Alternate #GC5: Homogeneous, with color extending throughout thickness.
  - 1. Manufacturers:
    - a. Basis of Design: VCT by Tarkett: [www.commercial.tarkett.com e.com/#sle](http://www.commercial.tarkett.com e.com/#sle).
  - 2. Minimum Requirements: Comply with ASTM F1066, of Class corresponding to type specified.
  - 3. Size: 12 by 12 inch.
  - 4. Thickness: 0.125 inch.
  - 5. Pattern: Mineral, Solid.

6. Pattern Type: Mineral.
  7. Colors: Provide a (4)- color pattern- similar to pattern shown on construction documents. If alternate is accepted, architect will provide a pattern to conform with the reduced tile size.
- B. Luxury Vinyl Tile (LVT) - Type LVT-1 & 2: Printed film type, with transparent or translucent wear layer. Micro-beveled edges.
1. Manufacturers:
    - a. Basis of Design: "Spacia Express" by Mannington Commercial;  
[www.manningtoncommercial.com/#sle](http://www.manningtoncommercial.com/#sle).
    - b. Substitutions: See Section 01 6000 - Product Requirements.
  2. Minimum Requirements: Comply with ASTM F1700, of Class corresponding to type specified.
  3. Critical Radiant Flux (CRF): Minimum 0.45 watt per square centimeter, when tested in accordance with ASTM E648 or NFPA 253.
  4. Mold and Microbial Resistance: Highly resistant when tested in accordance with ASTM D6329; certified in accordance with UL 2824.
  5. VOC Content Limits: As specified in Section 01 6116.
  6. Square Tile Size: 18 by 18 inch.
  7. Wear Layer Thickness: 20 mil; 0.51mm- Quantum Guard Elite.
  8. Total Thickness: .098" inch- 2.5mm.
  9. Pattern: As shown on Construction documents- Sheet A908.
  10. Colors: LVT-1: CERAMIC LIGHT.
- C. Luxury Vinyl Tile (LVT)- Type 3 & 4: Printed film type, with transparent or translucent wear layer. Micro-beveled edges.
1. Manufacturers:
    - a. Basis of Design: "Primary Elements" by Mannington Commercial;  
[www.manningtoncommercial.com/#sle](http://www.manningtoncommercial.com/#sle).
    - b. Substitutions: See section 016000- Product requirements.
  2. Minimum requirements: Compy with ASTM F1700, of Class corresponding to type specified.
  3. Critical Radiant Flux (CRF): Minimum 0.45 watt per square centimeter when tested in accordance with ASTM E648 or NFPA 253.
  4. Mold and Microbial resistance: Highly resistant when tested in accordance with ASTM D6329; certified in accordance with UL 2824.
  5. VOC Content limits: As specified in Section 01 6116.
  6. Plank Tile size: 6" x 36"
  7. Wear layer thickness: 20 mil. (0.51 mm)-Quantum Guard Elite.
  8. Total Thickness: .098" ( 2.5mm).
  9. Pattern: As shown on construction documents- Sheet A908.
  10. Colors: As indicated on drawings.
- D. Rubber Tile - Type RT-1, RT-2: Homogeneous, color and pattern throughout thickness.
1. Manufacturers:
    - a. Basis of Design: Mannington "Teles" Series.
    - b. Substitutions: See Section 01 6000 - Product Requirements.
  2. Minimum Requirements: Comply with ASTM F1344, of Class corresponding to type specified.
  3. Size: 17.5" by 17.5" inch nominal.
  4. Total Thickness: 1/8 inch (3.2 mm).
  5. Texture: Smooth.
  6. Pattern: Teles Series.
  7. Color: Beach Stone.

### 2.03 STAIR COVERING

- A. Rubber Tread/Riser (RTR): For Stairwells ST1, ST2 and ST3. Rubber; full width and depth of stair tread and riser in one piece; tapered thickness.
  - 1. Manufacturer:
    - a. Basis of Design: Mannington- Connect Step single piece Tread/Riser- Square Profile and Square Nose with Visually Impaired Abrasive Contrast Strip.
    - b. Substitutions: See Section 01 6000 - Product Requirements.
  - 2. Minimum Requirements: Comply with ASTM F2169, Type TS, rubber, vulcanized thermoset.
  - 3. Critical Radiant Flux (CRF): Minimum 0.45 watts per square centimeter, when tested in accordance with ASTM E648 or NFPA 253. Passes -Class 1.
  - 4. Nominal Thickness: 1/8 inch.
  - 5. Nosing: Square.
  - 6. Striping: 2 inch wide contrasting color abrasive strip- color: Brown.
  - 7. Profile: Square.
  - 8. Color: Sandy Tan.
- B. Rubber Treads for Mechanical Room-# 200: Rubber; full width and depth of stair tread.
  - 1. Manufacturer:
    - a. Basis of Design: Mannington- ColorScape Stair Tread- Square Profile and Square Nose with visually Impaired Abrasive Contrast Strip.
    - b. Substitutions: See Section 01 6000-Product Requirements.
  - 2. Minimum Requirements: Comply with ASTM F2169, Type TS, rubber, vulcanized, thermoset.
  - 3. Critical Radiant Flux (CRF): Minimum 0.45 watts per square centimeter, when tested in accordance with ASTM E648 or NFPA 253. Passes- Class1.
  - 4. Nominal Thickness: 1/8".
  - 5. Nosing: Square.
  - 6. Striping: 2 inch wide constrasting color abrasive strip- color: Brown.
  - 7. Profile: Square.
  - 8. Color: Sandy Tan.

### 2.04 RESILIENT BASE

- A. Resilient (Rubber) Base: (RB-1 ; RB-2): ASTM F1861, Type TS rubber, vulcanized thermoset; style as scheduled.
  - 1. Basis of Design: Tarkett Commercial- "Baseworks" Thermoset (type TS), Group 1 Rubber Wall Base.
  - 2. Manufacturers:
    - a. Tarkett Commercial; [www.commercial.tarkett.com/#sle](http://www.commercial.tarkett.com/#sle).
    - b. Substitutions: See Section 01 6000 - Product Requirements.
  - 3. Critical Radiant Flux (CRF): Minimum 0.45 watt per square centimeter, when tested in accordance with ASTM E648 or NFPA 253.
  - 4. Height: 4 inch.
  - 5. Thickness: 0.125 inch.
  - 6. Finish: Satin.
  - 7. Length: Roll.
  - 8. Types:
    - a. RB-1: Coved Base for rooms with Resilient Flooring.
    - b. RB-2: Straight Base for rooms with Carpet Tile.
  - 9. Color: To be selected by Architect from manufacturer's full range.
- B. Vented Cove Base (VCB): Vented base at perimeter of gymnasium-4" high.
  - 1. Basis of Design: Tarkett Commercial; Model #VCO47- Color: Brown.
  - 2. Manufacturers:
    - a. Tarkett Commercial; [www.commercial.tarkett.com/#sle](http://www.commercial.tarkett.com/#sle).
    - b. Substitutions: Section 01 6000- Product Requirements.

## **2.05 ACCESSORIES**

- A. Subfloor Filler: White premix latex; type recommended by adhesive material manufacturer.
- B. Primers, Adhesives, and Seam Sealer: Waterproof; types recommended by flooring manufacturer.
- C. Moldings, Transition and Edge Strips: Same material as flooring.
- D. Filler for Coved Base: Plastic.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that surfaces are flat to tolerances acceptable to flooring manufacturer, free of cracks that might telegraph through flooring, clean, dry, and free of curing compounds, surface hardeners, and other chemicals that might interfere with bonding of flooring to substrate.
- B. Verify that wall surfaces are smooth and flat within the tolerances specified for that type of work, are dust-free, and are ready to receive resilient base.
- C. Cementitious Subfloor Surfaces: Verify that substrates are ready for resilient flooring installation by testing for moisture and alkalinity (pH).
  - 1. Obtain instructions if test results are not within limits recommended by resilient flooring manufacturer and adhesive materials manufacturer.
  - 2. Follow moisture and alkalinity remediation procedures in Section 09 0561.
- D. Verify that required floor-mounted utilities are in correct location.

### **3.02 PREPARATION**

- A. Remove subfloor ridges and bumps. Fill minor low spots, cracks, joints, holes, and other defects with subfloor filler to achieve smooth, flat, hard surface.
- B. Prohibit traffic until filler is fully cured.

### **3.03 INSTALLATION - GENERAL**

- A. Starting installation constitutes acceptance of subfloor conditions.
- B. Install in accordance with manufacturer's written instructions.
- C. Adhesive-Applied Installation:
  - 1. Place copper grounding strip in conductive adhesive and apply additional adhesive to top side of strip before installing static control flooring. Allow strip to extend beyond flooring in accordance with static control flooring manufacturer's instructions. Refer to Section 26 0526 for grounding and bonding to building grounding system.
  - 2. Fit joints and butt seams tightly.
  - 3. Set flooring in place, press with heavy roller to attain full adhesion.
- D. Where type of floor finish, pattern, or color are different on opposite sides of door, terminate flooring under centerline of door.
- E. Install edge strips at unprotected or exposed edges, where flooring terminates, and where indicated.
  - 1. Resilient Strips: Attach to substrate using adhesive.
- F. Scribe flooring to walls, columns, cabinets, floor outlets, and other appurtenances to produce tight joints.
- G. Install flooring in recessed floor access covers, maintaining floor pattern.
- H. At movable partitions, install flooring under partitions without interrupting floor pattern.
- I. Install feature strips where indicated.

### **3.04 INSTALLATION - SHEET FLOORING**

- A. Lay flooring with joints and seams parallel to longer room dimensions, to produce minimum number of seams. Lay out seams to avoid widths less than 1/3 of roll width; match patterns at seams.

- B. Seal seams by heat welding where indicated.
- C. Coved Base: Install as detailed on drawings, using coved base filler as backing at floor to wall junction. Extend sheet flooring vertically to height indicated, and cover top edge with metal cap strip.

### **3.05 INSTALLATION - TILE FLOORING**

- A. Mix tile from container to ensure shade variations are consistent when tile is placed, unless otherwise indicated in manufacturer's installation instructions.
- B. Lay LVT as shown on Floor Pattern drawing A908.
- C. Install Rubber tile in a stacked pattern.

### **3.06 INSTALLATION - RESILIENT BASE**

- A. Fit joints tightly and make vertical. Maintain minimum dimension of 18 inches between joints.
- B. Install base on solid backing. Bond tightly to wall and floor surfaces.
- C. Scribe and fit to door frames and other interruptions.

### **3.07 INSTALLATION - STAIR COVERINGS**

- A. Install stair coverings in one piece for full width and depth of tread.
- B. Adhere over entire surface. Fit accurately and securely.

### **3.08 CLEANING**

- A. Remove excess adhesive from floor, base, and wall surfaces without damage.
- B. Clean in accordance with manufacturer's written instructions.

### **3.09 PROTECTION**

- A. Prohibit traffic on resilient flooring for 48 hours after installation.

**END OF SECTION**



**SECTION 09 6566  
RESILIENT ATHLETIC FLOORING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Vinyl sheet ion flooring, adhesively installed, heat welded seams.

**1.02 RELATED REQUIREMENTS**

- A. Section 09 0561 - Common Work Results for Flooring Preparation: Removal of existing floor coverings, cleaning, and preparation.
- B. Section 09 0561 - Common Work Results for Flooring Preparation: Concrete slab moisture and alkalinity testing and remediation procedures.

**1.03 REFERENCE STANDARDS**

- A. ASTM F710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring 2021.
- B. ASTM F1869 - Standard Test Method for Measuring Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride 2016a.
- C. ASTM F2170 - Standard Test Method for Determining Relative Humidity in Concrete Floor Slabs Using in situ Probes 2019a.
- D. ASTM F2772 - Standard Specification for Athletic Performance Properties of Indoor Sports Floor Systems 2011 (Reapproved 2019).

**1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Manufacturer's printed data sheets for products specified.
- C. Shop Drawings: Fabrication and installation details, and layout, colors, and widths of game lines and equipment locations.
- D. Selection Samples: Manufacturer's color charts for flooring materials specified, indicating full range of colors and textures available.
- E. Installer's Qualification Statement.

**1.05 QUALITY ASSURANCE**

- A. Installer Qualifications: An experienced installer certified in writing by the flooring manufacturer to be qualified for installation of specified flooring system.

**1.06 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver materials to project site in unopened containers clearly labeled with manufacturer's name and identification of contents.
- B. Store materials in dry and clean location until needed for installation. During installation, handle in a manner that will prevent marring and soiling of finished surfaces.

**1.07 FIELD CONDITIONS**

- A. Maintain temperature in spaces to receive adhesively installed resilient flooring within range of 70 to 95 degrees F for not less than 48 hours before the beginning of installation and for not less than 48 hours after installation has been completed. Subsequently, do not allow temperature in installed spaces to drop below 50 degrees F or to go above 100 degrees F.

**PART 2 PRODUCTS**

**2.01 PREFORMED ATHLETIC FLOORING**

- A. Manufacturers:
  - 1. Basis of Design: Omnisports-Active+ -prefabricated Sport Surface 8.1 mm with wood flooring design, single surface embossing and Extreme Three (3) Layers Technology

- (X3LT) as supplied by Tarkett.
2. Pre-fabricated sports surface: Resilient Athletic Flooring (RAF). Color to be selected from manufacturer's full line.
    - a. Seaming method: welding with heat or chemical.
    - b. Surface texture- embossed.
    - c. Width: 6'6" (2mm).
    - d. Length: approx. 85'.
    - e. Wear layer: 2mm. Type 1 Grade 1-ASTM F1303/F410.
    - f. Total thickness: 8.1mm.
  3. Warranty Period:
    - a. For material defect and surface wear-through: 25 years from date of substantial completion.
    - b. For moisture vapor tolerance: 25 years from date of substantial completion.
  4. Installers Limited Warranty:
    - a. Installer's standard form in which installer agrees to repair or replace sports flooring that fails due to poor workmanship or faulty installation within the specified warranty period.
    - b. Installer's Warranty Period: 2 years from date of substantial completion.
  5. Tarkett : [www.tarkettsportsindoor.com/#sle..](http://www.tarkettsportsindoor.com/#sle..)
  6. Substitutions: See Section 01 6000 - Product Requirements.

## **2.02 ACCESSORIES**

- A. Leveling Compound: Latex-modified cement formulation as recommended by flooring manufacturer for substrate conditions.
- B. Flooring Adhesive: Waterproof; types recommended by flooring manufacturer for flooring type and conditions on site.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Examine substrates for conditions detrimental to installation of athletic flooring. Proceed with installation only after unsatisfactory conditions have been corrected.
- B. Verify that surfaces are flat to tolerances acceptable to flooring manufacturer, free of cracks that might telegraph through flooring, clean, dry, and free of curing compounds, surface hardeners, and other chemicals that might interfere with bonding of athletic flooring to substrate.
- C. Cementitious Subfloor Surfaces: Verify that substrates are ready for resilient flooring installation by testing for moisture and alkalinity (pH).
  1. Test in accordance with Section 09 0561.
  2. Obtain instructions if test results are not within limits recommended by resilient flooring manufacturer and adhesive materials manufacturer.
  3. Follow moisture and alkalinity remediation procedures in Section 09 0561.

### **3.02 PREPARATION**

- A. Prepare floor substrates for installation of flooring in accordance with Section 09 0561.
- B. Prepare floor substrates as recommended by flooring and adhesive manufacturers.

### **3.03 INSTALLATION**

- A. Starting installation constitutes acceptance of subfloor conditions.
- B. Install in accordance with manufacturer's written instructions.

### **3.04 CLEANING**

- A. Clean flooring using methods recommended by manufacturer.

### **3.05 PROTECTION**

- A. Protect finished athletic flooring from construction traffic to ensure that it is without damage upon Date of Substantial Completion.

**END OF SECTION**

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**SECTION 09 6700  
FLUID-APPLIED FLOORING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Epoxy Paint-Floors (EPF)- High Performance Fluid-Applied Coating for Floors.

**1.02 RELATED REQUIREMENTS**

- A. Section 07 9200 - Joint Sealants: Sealing joints between fluid-applied flooring and adjacent construction and fixtures.
- B. Section 09 0561 - Common Work Results for Flooring Preparation: Removal of existing floor coverings, cleaning, and preparation.
- C. Section 09 0561 - Common Work Results for Flooring Preparation: Concrete slab moisture and alkalinity testing and remediation procedures.
- D. Section 22 1006 - Plumbing Piping Specialties: Recessed plumbing access cover frames.

**1.03 REFERENCE STANDARDS**

- A. ANSI/ESD STM7.1 - The Protection of Electrostatic Discharge Susceptible Items Flooring Systems Resistive Characterization 2021.

**1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide data on specified products, describing physical and performance characteristics; sizes, patterns and colors available.
- C. Concrete Subfloor Test Report: Submit a copy of the moisture and alkalinity (pH) test reports.
- D. Maintenance Data: Include maintenance procedures, recommended maintenance materials, procedures for stain removal, repairing surface, and suggested schedule for cleaning.
- E. Samples: Submit two 6"x6" samples which is a true representation of the proposed fluid-applied finish adhered to a rigid backing. Provide series-specific texture and color offerings for approval.
- F. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
  - 1. See Section 01 6000 - Product Requirements, for additional provisions.

**1.05 QUALITY ASSURANCE**

- A. Applicator Qualifications: Company specializing in performing the work of this section.
  - 1. Minimum 5 years of documented experience.
  - 2. Approved by manufacturer.

**1.06 MOCK-UP**

- A. Construct mock-up(s) of fluid applied flooring to serve as basis for evaluation of texture and workmanship.
  - 1. Number of Mock-Ups to be Prepared: One.
  - 2. Use same materials and methods for use in the work.
  - 3. Locate where directed.
  - 4. Minimum Size: 48 inches by 48 inches.
- B. Approved mock-up may remain as part of the Work.

**1.07 DELIVERY, STORAGE, AND HANDLING**

- A. Store resin materials in a dry, secure area.
- B. Store materials for three days prior to installation in area of installation to achieve temperature stability.

**1.08 FIELD CONDITIONS**

- A. Maintain minimum temperature in storage area of 55 degrees F.

- B. Store materials in area of installation for minimum period of 24 hours prior to installation.
- C. Maintain ambient temperature required by manufacturer 72 hours prior to, during, and 24 hours after installation of materials.

## **PART 2 PRODUCTS**

### **2.01 MANUFACTURERS**

- A. Fluid-Applied High-Performance Resinous Flooring:
  - 1. Basis of Design: Resuflor Deco Quartz BC23, 1/8" nominal thickness mfg. by The Sherwin-Williams Company: General Polymers Brand: [www.industrial.sherwin-williams.com/#sle](http://www.industrial.sherwin-williams.com/#sle).
  - 2. Substitutions: See Section 01 6000 - Product Requirements.

### **2.02 FLUID-APPLIED FLOORING SYSTEMS**

- A. Fluid-Applied High-Performance Resinous Flooring: Epoxy, with aggregate.
  - 1. Primer: Resuprime 3579 at 250 sq.ft. per gallon.
  - 2. 1st Receiver coat: Resuflor 3561 at 140-145 sq. ft. per gallon.
  - 3. 1st Broadcast: GP5900F to excess at 0.4 lbs. per sq. ft.
  - 4. 2nd Receiver Coat: Resuflor 3561 at 65-70 sq. ft. per gallon.
  - 5. 2nd Broadcast: GP5900F to excess at 0.4 lbs. per sq. ft.
  - 6. Grout Coat: Resuflor 3746 at 100 sq. ft. per gallon.
  - 7. Topcoat: Resuflor 3746 at 200 sq. ft. per gallon.

### **2.03 MATERIALS**

- A. VOC content of Resinous Flooring: Provide resinous flooring systems for use inside the weatherproofing system, that comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24).
  - 1. Resinous Flooring: 100 g/L.

### **2.04 HIGH-PERFORMANCE RESINOUS FLOORING**

- A. Resinous Flooring: Abrasion-, impact- and chemical-resistant, high-performance, resin-based, monolithic floor surfacing designed to produce a seamless floor.
- B. System Characteristics:
  - 1. Color and Pattern: As indicated from manufacturers listed above.
  - 2. Slip Resistance: Provide slip resistant finish.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that concrete substrates are dry and moisture-vapor emissions are within acceptable levels according to manufacturer's written instructions.
  - 1. Moisture Testing: perform tests indicated below:
    - a. Calcium Chloride Test: Perform anhydrous calcium chloride test per ASTM F 1869. Proceed with installation only after substrates have maximum moisture-vapor emission rate of 3 lb. of water/1000 sq. ft. in 24 hours. Perform tests so that each test area does not exceed 1000 sq. ft. and perform 3 tests for the first 1000 sq. ft. and one additional test for every additional 100 sq. ft.
    - b. In-Situ Probe Test: Perform relative-humidity test using in-situ probes per ASTM F 2170. Proceed with installation only after substrates have a maximum 75 percent relative-humidity-level measurement.
  - 2. Alkalinity and Adhesion Testing: Verify that concrete substrates have pH within the acceptable range. Perform tests recommended by the manufacturer. Proceed with application only after substrates pass testing.
  - 3. Obtain instructions if test results are not within limits recommended by fluid-applied flooring manufacturer.

### **3.02 PREPARATION**

- A. Remove subfloor ridges and bumps. Fill low spots, cracks, joints, holes, and other defects with subfloor filler.
- B. Apply, trowel, and float filler to achieve smooth, flat, hard surface. Grind irregularities above the surface level. Prohibit traffic until filler is cured.
- C. Vacuum clean substrate.
- D. Apply primer to surfaces required by flooring manufacturer.

### **3.03 ENVIRONMENTAL CONDITIONS**

- A. All applicators and all other personnel in the area of the RF installation shall take all required and necessary safety precautions. All manufacturer's installation instructions shall be implicitly followed.
- B. Use patching and fill material to fill voids and depressions in substrates according to manufacturer's written instructions.
- C. Treat control joints and other nonmoving substrate cracks to prevent cracks from reflecting through resinous flooring according to manufacturer's written instructions.

### **3.04 INSTALLATION - FLOORING**

- A. Install resinous flooring over properly prepared concrete. Apply in accordance with manufacturer's instructions.
- B. Apply components of resinous flooring system according to manufacturer's written instructions to produce a uniform, monolithic wearing surface of thickness indicated.
  - 1. Coordinate application of components to provide optimum adhesion of resinous flooring system to substrate and optimum intercoat adhesion.
  - 2. Cure resinous flooring components according to manufacturer's written instructions. Prevent contamination during application and curing processes.
  - 3. At substrate expansion and isolation joints, comply with resinous flooring manufacturer's written instructions.
- C. Sealant: Saw cut resinous floor topping at expansion joints in concrete slab. Fill sawcuts with sealant prior to final seal coat application. Follow manufacturer's written recommendation.
- D. Apply primer over prepared substrate at manufacturer's recommended spreading rate.
- E. Slip Resistant Finish: Provide grit for slip resistance.
- F. Apply topcoats in number indicated for flooring system and at spreading rates recommended in writing by manufacturer.
- G. See Construction Documents for wall base detail.

### **3.05 FIELD QUALITY CONTROL**

- A. See Section 01 4000 - Quality Requirements, for additional requirements.
- B. Test installed floor surface in accordance with ANSI/ESD STM7.1 .

### **3.06 PROTECTION**

- A. Prohibit traffic on floor finish for time as recommended by manufacturer after installation.
- B. Barricade area to protect flooring until fully cured.

**END OF SECTION**

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**SECTION 09 6813  
TILE CARPETING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Carpet tile, fully adhered.

**1.02 RELATED REQUIREMENTS**

- A. Section 09 0561 - Common Work Results for Flooring Preparation: Removal of existing floor coverings, cleaning, and preparation.

**1.03 REFERENCE STANDARDS**

- A. ASTM D2859 - Standard Test Method for Ignition Characteristics of Finished Textile Floor Covering Materials 2016 (Reapproved 2021).
- B. ASTM E648 - Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source 2019a, with Editorial Revision (2020).
- C. NFPA 253 - Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source 2019.

**1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on specified products, describing physical and performance characteristics; sizes, patterns, colors available, and method of installation.
- C. Samples: Submit two carpet tiles illustrating color and pattern design for each carpet color selected.
- D. Concrete Subfloor Test Report: Submit a copy of the moisture and alkalinity (pH) test reports.
- E. Installer's Qualification Statement.
- F. Maintenance Data: Include maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning.
- G. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
  - 1. See Section 01 6000 - Product Requirements, for additional provisions.
  - 2. Extra Carpet Tiles: Quantity equal to 5 percent of total installed of each color and pattern installed.

**1.05 QUALITY ASSURANCE**

- A. Installer Qualifications: Company specializing in installing carpet tile with minimum three years documented experience and approved by carpet tile manufacturer.

**1.06 FIELD CONDITIONS**

- A. Store materials in area of installation for minimum period of 24 hours prior to installation.

**PART 2 PRODUCTS**

**2.01 MANUFACTURERS**

- A. Tile Carpeting:
  - 1. Mannington Commercial; [www.manningtoncommercial.com/#sle..](http://www.manningtoncommercial.com/#sle..)
  - 2. Substitutions: See Section 01 6000 - Product Requirements.

**2.02 MATERIALS**

- A. Tile Carpeting, Type A & B: Tufted, manufactured in one color dye lot.
  - 1. Product: Basis of Design: Quadrant Series- Align Pattern; Modular manufactured by Mannington Commercial.
  - 2. Tile Size: 24 by 24 inch, nominal.
  - 3. Color: CAR- A: Radian #83577; CAR- B: Binomial #73585.
  - 4. Fiber System: Antron Legacy Type 6,6 Nylon.

5. Dye Method: Solution/Yarn.
6. Construction Type: Patterned Loop.
7. Face Weight: 21 oz.
8. Backing Type: Infinity 2.
9. Critical Radiant Flux: Minimum of 0.45 watts/sq cm, when tested in accordance with ASTM E648 or NFPA 253.
10. Surface Flammability Ignition: Pass ASTM D2859 (the "pill test").
11. Maximum Electrostatic Charge: 3 Kv. at 20 percent relative humidity.
12. Face Fiber: Antron Legacy Type 6,6 Nylon.
13. Total Weight: 21 oz/sq yd.

## **2.03 ACCESSORIES**

- A. Subfloor Filler: White premix latex; type recommended by flooring material manufacturer.
- B. Edge Strips: Rubber transisitions- Tarkett "Slimline" Transitions- match wall base color
- C. Adhesives: As recommended by manufacturer.
- D. Carpet Tile Adhesive: Recommended by carpet tile manufacturer; releasable type.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that subfloor surfaces are smooth and flat within tolerances specified for that type of work and are ready to receive carpet tile.
- B. Verify that subfloor surfaces are dust-free and free of substances that could impair bonding of adhesive materials to subfloor surfaces.
- C. Cementitious Subfloor Surfaces: Verify that substrates are ready for flooring installation by testing for moisture and alkalinity (pH).
  1. Test in accordance with Section 09 0561.
  2. Obtain instructions if test results are not within limits recommended by flooring material manufacturer and adhesive materials manufacturer.
  3. Follow moisture and alkalinity remediation procedures in Section 09 0561.
- D. Verify that required floor-mounted utilities are in correct location.

### **3.02 PREPARATION**

- A. Prepare floor substrates for installation of flooring in accordance with Section 09 0561.

### **3.03 INSTALLATION**

- A. Starting installation constitutes acceptance of subfloor conditions.
- B. Install carpet tile in accordance with manufacturer's instructions.
- C. Blend carpet from different cartons to ensure minimal variation in color match.
- D. Cut carpet tile clean. Fit carpet tight to intersection with vertical surfaces without gaps.
- E. Lay carpet tile in square pattern, with pile direction parallel to next unit, set parallel to building lines.
- F. Trim carpet tile neatly at walls and around interruptions.
- G. Complete installation of edge strips, concealing exposed edges.

### **3.04 CLEANING**

- A. Remove excess adhesive without damage, from floor, base, and wall surfaces.
- B. Clean and vacuum carpet surfaces.

## **END OF SECTION**

**SECTION 09 7200  
WALL COVERINGS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Surface preparation and prime painting.
- B. Wall covering- Dry Erase Magnetic Wall Covering. (DEMw)
- C. Custom Wall Murals.

**1.02 RELATED REQUIREMENTS**

- A. Section 09 9123 - Interior Painting: Preparation and priming of substrate surfaces.

**1.03 REFERENCE STANDARDS**

- A. ASTM D1308 - Standard Test Method for Effect of Household Chemicals on Clear and Pigmented Coating Systems 2020.
- B. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2021a.

**1.04 SUBMITTALS**

- A. See Section 01 3300- Administrative Requirements for submittal procedures.
- B. Product Data: Provide data on wall covering and adhesive.
- C. Shop Drawings: Indicate wall elevations with seaming layout.
- D. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
  - 1. See Section 01 6000 - Product Requirements, for additional provisions.
  - 2. Extra Wall Covering Materials: 25 linear feet of each color and pattern of wall covering; store where directed.

**1.05 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with minimum three years of documented experience.
- B. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience.

**1.06 MOCK-UP**

- A. Locate where directed.
- B. Mock-up may remain as part of the Work.

**1.07 DELIVERY, STORAGE, AND HANDLING**

- A. Inspect roll materials at arrival on site, to verify acceptability.
- B. Protect packaged adhesive from temperature cycling and cold temperatures.
- C. Do not store roll goods on end.

**1.08 FIELD CONDITIONS**

- A. Do not apply materials when surface and ambient temperatures are outside the temperature ranges required by the adhesive or wall covering product manufacturer.
- B. Maintain these conditions 24 hours before, during, and after installation of adhesive and wall covering.

**PART 2 PRODUCTS**

**2.01 WALL COVERINGS**

- A. General Requirements:
  - 1. Surface Burning Characteristics: Class A, Flame spread/Smoke developed index of 55/90, maximum, when tested in accordance with ASTM E84.

2. Chemical and Stain Resistance: No visible staining or discoloration and no damage to surface texture when tested in accordance with ASTM D1308.
- B. Dry-Erase-Magnetic Wall Covering (DEMW). Basis of Design: Koroseal -"Mag-Rite" product #M2GR with 2" x 2" grid.
1. Total Weight: 423.36 oz./per each.
  2. Roll Width: 48 inches.
  3. Backing: Woven backing with ferrous sheet bonded with white pigmented vinyl and capped with semi-gloss dry-erase film that meets California Indoor Air Quality Specification 01350..
  4. Color: white.
  5. Pattern: 2" x 2" grid.
  6. Surface : Semi-gloss.
  7. Termination Trim- Vertical or Horizontal as required: Acrovyn .060" Wainscot Cap- color to be determined.
  8. Adhesive: As recommended by Manufacturer for surface applying to.
  9. Manufacturers:
    - a. Koroseal Interior Products, LLC: [www.koroseal.com/#sle](http://www.koroseal.com/#sle).
    - b. Substitutions: See Section 01 6000 - Product Requirements.
- C. Wall Covering- VWC-1 - Type III: Decorative Wall protection.
1. Manufacturers:
    - a. Basis of Design: Koroseal- "Flex" Decorative Wall Protection in Nordic pattern.
    - b. Substitutions: See Section 01 6000 - Product Requirements.
  2. Wall Covering complying with the following:
    - a. Total Weight: 35 oz. PLY; 22.4 oz. PSY oz/sq yd.
    - b. Roll Width: 52 inches.
    - c. Color: to be determined.
    - d. Pattern: Nordic.
    - e. Fire Testing:
      - 1) ASTM E-84- Class A rating.
      - 2) NFPA 286- Meets 2006 IBC Section 803.2.1
    - f. Adhesive: Type recommended by wall covering manufacturer to suit application to substrate.
    - g. Location: Library/Media Center where noted on construction documents.
- D. Wall covering- Custom Mural: Basis of Design: Koroseal "Digitally Printed Vinyl Wallcovering Murals- Digital Lab- Custom".
1. Architect-provided graphics file for custom digital print with UV inks; print capability on vinyl wallcovering material that meets or exceeds the following specifications:
    - a. Total weight: 21 oz./lin. yd.
    - b. Fabric backing and content: Poly-Cotton Woven.
    - c. Tensile Strength: 50 x 55 Minimum (W x F)
    - d. Tear Strength: 25 x 25 (W x F)
    - e. Fire Hazard Classification: Class A when tested in accordance with ASTM E84.
    - f. Provide materials that have been tested and approved by Underwriters Laboratories.
    - g. Fire Detection Characteristics: Provide materials that have been laboratory tested for the Early Warning Effect in accordance with ASTM E 603. Submit test results certifying that when one square foot section of the material is heated to 300 degrees F, the wallcovering emits an odorless, colorless non-toxic vapor that will activate an ionization smoke detector.
    - h. Location: Library/Media Center- 2 locations where noted on construction documents.
  2. Manufacturers:
    - a. Koroseal Interior Products, LLC: [www.koroseal.com/#sle](http://www.koroseal.com/#sle).
- E. Substrate Filler: As recommended by adhesive and wall covering manufacturers; compatible with substrate.

- F. Substrate Primer and Sealer: Alkyd enamel type.

## **PART 3 EXECUTION**

### **3.01 INSTALLERS**

- A. Installer List:

### **3.02 EXAMINATION**

- A. Verify that substrate surfaces are prime painted and ready to receive work, and comply with requirements of wall covering manufacturer.
- B. Measure moisture content of surfaces using an electronic moisture meter. Do not apply wall coverings if moisture content of substrate exceeds level recommended by wall covering manufacturer.

### **3.03 PREPARATION**

- A. Fill cracks in substrate and smooth irregularities with filler; sand smooth.
- B. Wash impervious surfaces with tetra-sodium phosphate, rinse and neutralize; wipe dry.
- C. Surface Appurtenances: Remove or mask electrical plates, hardware, light fixture trim, escutcheons, and fittings prior to preparing surfaces or finishing.
- D. Apply one coat of primer sealer to substrate surfaces. Allow to dry. Lightly sand smooth.
- E. Vacuum clean surfaces free of loose particles.

### **3.04 INSTALLATION**

- A. Apply adhesive and wall covering in accordance with manufacturer's instructions.
- B. Apply adhesive to wall surface immediately prior to application of wall covering.
- C. Apply wall covering smooth, without wrinkles, gaps or overlaps. Eliminate air pockets and ensure full bond to substrate surface.
- D. Butt edges tightly.
- E. Overlap adjacent panels as recommended by manufacturer.
- F. Install wall covering before installation of bases and items attached to or spaced slightly from wall surface.
- G. Do not install wall covering more than 1/4 inch below top of resilient base.
- H. Cover spaces above and below windows, above doors, in pattern sequence from roll.
- I. Install termination trim where required or detailed.
- J. Remove excess adhesive while wet from seam before proceeding to next wall covering sheet. Wipe clean with dry cloth.

### **3.05 CLEANING**

- A. Clean wall coverings of excess adhesive, dust, dirt, and other contaminants.
- B. Reinstall wall plates and accessories removed prior to work of this section.

### **3.06 PROTECTION**

- A. Do not permit construction activities at or near finished wall covering areas.

**END OF SECTION**

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**SECTION 09 7800  
INTERIOR WALL PANELING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Decorative fiberglass reinforced plastic (FRP) wall paneling and trims.
- B. Stainless Steel (SSS) Sheet wall protection and trims.
- C. Accessories.

**1.02 RELATED REQUIREMENTS**

**1.03 REFERENCE STANDARDS**

- A. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2021a.

**1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Submit manufacturer's descriptive literature for each specified product. Include anchorage devices specific to project substrate types.
- C. Shop Drawings: Submit elevations for each application and location. Indicate details of joints and attachments.
  - 1. Scale of Drawing Elevations: 1/4 inch to 1 foot, minimum.
- D. Samples: Submit two samples 6 by 6 inches in size, indicating finish, surface design, and color for each type of panels.
- E. Maintenance Data: Include recommended instructions, methods, and materials for cleaning glass, aluminum framing, and FRP panels.

**1.05 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with at least five years of documented experience.
- B. Installer Qualifications: Company specializing in installing work of the type specified in this section, and with at least three years of documented experience.

**1.06 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver products to project site in manufacturer's original packaging, marked with manufacturer's product identification.
- B. Store panels flat, indoors, on a clean, dry surface. Remove packaging and allow panels to acclimate to room temperature for 48 hours prior to installation.

**1.07 WARRANTY**

- A. See Section 01 7800 - Closeout Submittals for additional warranty requirements.
- B. Correct defective work within a five-year period for delaminating panels commencing on the Date of Substantial Completion.

**PART 2 PRODUCTS**

**2.01 MANUFACTURERS**

- A. Decorative Fiberglass Reinforced Plastic (FRP) Wall Paneling:
  - 1. Basis of Design: Crane Composites, Inc: [www.cranecomposites.com/#sle](http://www.cranecomposites.com/#sle).
  - 2. Types:
    - a. FRP-1 "Glasboard"- FX Series- Pebbled Texture, Class A Fire rating, in color: to be determined.
    - b. FRP-2 "Glasboard"- FSI Series- Smooth Texture, Class A Fire rating, in color: White No. 85.
    - c. FRP-3 "Designs"- Class A Fire rating, Chestnut Oak #622SRP. Install horizontally.

3. For vertical panel installations, provide and install "Division bar" trim in matching color to panels. For Horizontal installation between type FRP-2 and FRP-3, see interior elevations, provide aluminum trim type "cap".
  4. Install per manufacturer's recommendations with appropriate adhesives.
  5. Substitutions: See Section 01 6000 - Product Requirements.
- B. Stainless Steel Sheet (SSS) Wall Protection:
1. Basis of Design: CS Acrovyn: Nominal .0625" thick stainless steel sheet with standard smooth texture supplied in 4'x10' sheets. Install with continuous lengths to reduce Provide appropriate adhesives and trims to match. Manufactured by Construction Specialties: [www.c-sgroup.com/#sle](http://www.c-sgroup.com/#sle).
  2. Substitutions: See Section 016000-Product Requirements.

## **2.02 REGULATORY REQUIREMENTS**

- A. Testing Agency: Acceptable to authorities having jurisdiction and FM Approvals.
- B. Surface Burning Classification: Provide wall paneling assemblies meeting Class A when tested in accordance with ASTM E84.
- C. FM4880 approved.
- D. Meets USDA/FSIS requirements.
- E. UL 2818 Greenguard Gold Certified.
- F. HACCP Certified.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify existing conditions and substrate flatness before starting work.
- B. Verify that substrate surfaces for adhered items are clean and smooth.
  1. Test painted or wall covering surfaces for adhesion in inconspicuous area, as recommended by manufacturer.
- C. Start of installation constitutes acceptance of project conditions.

### **3.02 INSTALLATION**

- A. Install panels in accordance with manufacturer's instructions. See interior elevations for locations.
- B. Apply adhesive to back side of panel using trowel recommended by adhesive manufacturer.
- C. Apply panels to wall with vertical joints plumb and horizontal joints level and pattern aligned with adjoining panels.
- D. Using a roller, apply pressure to panel face to ensure proper adhesion between surfaces.
- E. Install panels with manufacturer's recommended gaps for panel field and corner joints.
- F. Install trim with adhesive.
- G. Seal joints at wall base and between panels with approved sealant to prevent moisture intrusion.
- H. Remove excess sealant after paneling is installed and prior to curing.

### **3.03 ADJUSTING**

- A. Replace paneling installed out of plumb and/or not aligned with adjacent panels or construction.

### **3.04 CLEANING**

- A. Clean panel faces using cleaning agents and methods recommended by manufacturer to remove soiling.

### **3.05 CLOSEOUT ACTIVITIES**

- A. See Section 01 7800 - Closeout Submittals for closeout submittals.



### **3.06 PROTECTION**

- A. Protect installed interior wall paneling from subsequent construction operations.

**END OF SECTION**

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**SECTION 09 8300  
ACOUSTIC FINISHES**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Field application of acoustic materials and finish.
  - 1. Acoustical Batt Insulation.
  - 2. Acoustical Sealant.
  - 3. Mass Loaded Vinyl Noise Barrier.
  - 4. HVAC Noise Control.
- B. Surface preparation.

**1.02 RELATED REQUIREMENTS**

- A. Section 09 5100 - Acoustical Ceilings.
- B. Section 09 9123 - Interior Painting.

**1.03 REFERENCE STANDARDS**

- A. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2021a.

**1.04 SUBMITTALS**

- A. See Section 01 3300- Administrative Requirements for submittal procedures.
- B. Product Data: Manufacturer's data sheets for products specified.
- C. Samples: Submit two samples indicating colors for selection.
- D. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
- E. Manufacturer's Installation Instructions: Indicate special procedures and perimeter conditions requiring special attention.

**1.05 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified, with minimum three years documented experience.
- B. Applicator Qualifications: Company specializing in installing work of the type specified in this section, and with at least three years of documented experience.

**1.06 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.

**1.07 FIELD CONDITIONS**

- A. Do not apply acoustical finishes when surface and ambient temperatures are outside the temperature ranges required by manufacturer.

**PART 2 PRODUCTS**

**2.01 ACOUSTIC MATERIALS**

- A. General:
  - 1. Provide materials that are compatible with one another and the substrates indicated under conditions of service and application, as demonstrated by manufacturer based on testing and field experience.
  - 2. Do not reduce, thin, or dilute coatings or add materials unless procedure is described explicitly in manufacturer's product instructions.
- B. Acoustical Batt Insulation:
  - 1. Sound Attenuation Batt Insulation.
  - 2. Manufacturer: Basis of Design: Owens Corning; [www2.owenscorning.com/#sle](http://www2.owenscorning.com/#sle).
  - 3. Thickness: as indicated on drawings.
  - 4. Material: Fiberglass Batts- rolls.

- C. Acoustical Sealant:
  - 1. Acoustical Sound Sealant.
  - 2. Manufacturer: Basis of Design: OSI Acoustical Caulk; [www.ositough.com/#sle](http://www.ositough.com/#sle).
  - 3. Permanent flexibility.
  - 4. Tested to ASTM E84.
  - 5. Tested to UL 1479 and UL 2079.
  - 6. Apply in accordance to ASTM C919 (Standard Practice for Use of Sealants in Acoustical Applications).
  - 7. Color: White.
- D. Mass Loaded Vinyl Noise Barrier (for Walls):
  - 1. Viscoelastic Polymer Soundproofing Material.
  - 2. Manufacturer: Basis of Design: Acoustiblok; [www.acoutiblok.com/#sle](http://www.acoutiblok.com/#sle).
  - 3. 1 pound per square inch. (1/8" thick).
- E. HVAC Noise Control - Covering for all ductwork above Band and Chorus Rooms.
  - 1. Acoustical Duct and Pipe Lagging- 1 lb per square foot mass loaded vinyl, with quilted fiberglass decoupler.
  - 2. Manufacturer: Basis of Design: Sound Seal; [www.soundseal.com/#sle](http://www.soundseal.com/#sle).
  - 3. Acoustical Rating- STC-27.
  - 4. Matching Lag tape.
  - 5. Passes UL-94 and FMVSS 302.
  - 6. Class A rated composite.
  - 7. Roll size: 54" x 30'.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Examine ceilings to receive acoustic materials as indicated on the drawings.
- B. Do not begin application of acoustic finishes until substrates have been properly prepared.
- C. Verify that surfaces are ready to receive work as instructed by the product manufacturer.

### **3.02 PREPARATION**

- A. Prepare surfaces using cleaning methods recommended by the manufacturer.
- B. Seal surfaces that may cause bleed through or staining of acoustic finish.

### **3.03 APPLICATION**

- A. Apply products in accordance with manufacturer's written instructions.
- B. Do not apply finishes to surfaces that are not dry. Allow applied coats to dry before next coat is applied.

### **3.04 FIELD QUALITY CONTROL**

- A. See Section 01 4000 - Quality Requirements for additional requirements.

### **3.05 CLEANING**

- A. See Section 01 7419 - Construction Waste Management and Disposal for additional requirements.
- B. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.

### **3.06 PROTECTION**

- A. Protect finishes from subsequent construction operations.

## **END OF SECTION**

**SECTION 09 8430  
SOUND-ABSORBING WALL AND CEILING UNITS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Sound-absorbing panels.
- B. Sound-absorbing ceiling baffles.
- C. Cementitious Wood Fiber plank acoustical
- D. Mounting accessories.

**1.02 RELATED REQUIREMENTS**

- A. Section 09 5100 - Acoustical Ceilings: Ceiling suspension system.

**1.03 REFERENCE STANDARDS**

- A. ASTM C423 - Standard Test Method for Sound Absorption and Sound Absorption Coefficients by the Reverberation Room Method 2017.
- B. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2021a.
- C. ASTM E795 - Standard Practices for Mounting Test Specimens During Sound Absorption Tests 2016.

**1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Manufacturer's printed data sheets for products specified.
- C. Verification Samples: Fabricated samples of each type of panel specified; 12 by 12 inch, showing construction, edge details, and fabric covering.

**1.05 QUALITY ASSURANCE**

**1.06 DELIVERY, STORAGE, AND HANDLING**

- A. Protect acoustical units from moisture during shipment, storage, and handling. Deliver in factory-wrapped bundles; do not open bundles until units are needed for installation.
- B. Store units flat, in dry, well-ventilated space; do not stand on end.
- C. Protect edges from damage.

**PART 2 PRODUCTS**

**2.01 FABRIC-COVERED SOUND-ABSORBING UNITS**

- A. Manufacturers:
  - 1. Conwed: [www.conwed.com/#sle](http://www.conwed.com/#sle).
  - 2. Substitutions: See Section 01 6000 - Product Requirements.
- B. General:
  - 1. Prefinished, factory assembled fabric-covered panels.
  - 2. Surface Burning Characteristics: Flame spread index of 25 or less and smoke developed index of 450 or less, when tested in accordance with ASTM E84.
- C. Type- AWP-1: Direct Attach, Fabric-Covered Acoustical Panels for Walls:
  - 1. Series: Respond
  - 2. Panel Core: Manufacturer's standard rigid or semi-rigid fiberglass core.
    - a. Facing: 1/16 inch tackable and acoustic surface laminated to core.
  - 3. Panel Size: as indicated on construction documents.
  - 4. Panel Thickness: 2 inches.
  - 5. NRC Rating = 1.05.
  - 6. Edges: Perimeter edges reinforced by a formulated resin hardener.

7. Corners: Square.
  8. Fabric: Guilford of Maine- FR701 (Class A) series. 100% post-consumer recycled polyester .
  9. Color: As selected by Architect from manufacturer's full range.
  10. Mounting Method: pline-mounted, concealed.
- D. Type- AWP-2: Low-Frequency Tuner, Fabric-Covered Acoustical Panels:
1. Series: Specialized.
  2. Panel Core: Manufacturer's standard rigid or semi-rigid fiberglass core.
  3. Panel Size: As indicated on construction documents.
  4. Panel Thickness: 2 inches.
  5. NRC Rating = 0.30.
  6. Edges: Perimeter edges reinforced by a formulated resin hardener.
  7. Corners: Square.
  8. Fabric: Guilford of Maine- FR701 (Class A) series. 100% post-consumer recycled polyester.
  9. Color: As selected by Architect from manufacturer's full range.
  10. Mounting Method: Vertically suspended from ceiling or structure Z clips to Z bar.
- E. Type- AWP-3: Barrel Diffuser; Fabric covered acoustical panels.
1. Series: Specialized.
  2. Panel Core: Manufacturer's standard molded fire-resistant plastic in barrel shape.
  3. Panel size: As indicated on construction documents.
  4. Panel Thickness: Varies.
  5. NRC Rating = 0.10.
  6. Edges: Straight for walls.
  7. Corners: Square.
  8. Fabric: Guilford of Maine- FR701 (Class A) series. 100% post-consumer recycled polyester.
  9. Color: As selected by Architect from manufacturer's full range.
  10. Mounting Method: Combination of L angles and hook & loop fasteners.
- F. Type- AWP-4: Baffles (back to back), Fabric-covered ceiling-hung Acoustical Panels:
1. Series: Respond.
  2. Panel Core: Manufacturer's standard rigid or semi-rigid fiberglass core.
  3. Panel size: As indicated on construction documents.
  4. Panel Thickness; 3".
  5. NRC Rating = min.- 1.03.
  6. Edges: Perimeter edges reinforced by a formulated resin hardener.
  7. Corners: Square.
  8. Fabric: Guilford of Maine- FR701 (Class A) series. 100% post-consumer recycled polyester.
  9. Color: As selected by Architect from manufacturer's full range.
  10. Mounting Method: D-Rings/cable to ceiling.

## **2.02 WOOD FIBER SOUND-ABSORBING UNITS**

- A. Manufacturers:
1. Basis of Design: Tectum Shapes, mfg. by Armstrong Ceiling & Wall Solutions/  
[www.armstrongceilings.com/#sle](http://www.armstrongceilings.com/#sle) .
  2. Tectum Panel Art Custom Acoustical Wall Panels.
  3. Provide (6) custom colors. To be determined during submittal phase.
  4. Sizes and quantities as shown on construction documents with a thickness of 1.5".
  5. Substitutions: See Section 01 6000 - Product Requirements.
- B. Cementitious Wood Fiber panels for Walls and Ceilings: Acoustical ceiling panels. See locations, quantities and sizes on Interior Elevations.

1. Surface Burning Characteristics: Flame spread index of 25 or less and smoke developed index of 450 or less, when tested in accordance with ASTM E84.
2. Noise Reduction Coefficient (NRC): 0.70 to 0.80 when tested in accordance with ASTM C423 for Type A mounting, per ASTM E795.

### **2.03 FABRICATION**

- A. Fabric Wrapped, General: Fabricate panels to sizes and configurations as indicated, with fabric facing installed without sagging, wrinkles, blisters, or visible seams.
  1. For panels suspended from ceiling, provide fabric covering both sides, with seams only at panel edges.
- B. Tolerances: Fabricate to finished tolerance of plus or minus 1/16 inch for thickness, overall length and width, and squareness from corner to corner.

### **2.04 ACCESSORIES**

- A. Spline-Mounting Accessories: Manufacturer's standard concealed connecting splines of extruded aluminum designed for screw attachment to walls, with coordinating moldings and trim for interior and exterior corners and miscellaneous conditions.
  1. Color of Exposed Trim: As selected from manufacturer's standards.
- B. Ceiling-Suspended Accessories: Manufacturer's standard accessories at locations as indicated on each acoustical unit, sized appropriately for weight of acoustical unit.

## **PART 3 EXECUTION**

### **3.01 INSTALLATION**

- A. Install acoustical units in locations as indicated, following manufacturer's installation instructions.
- B. Suspend ceiling baffles at locations and heights as indicated.
- C. Install acoustical units to construction tolerances of plus or minus 1/16 inch for the following:
  1. Plumb and level.
  2. Flatness.

### **3.02 CLEANING**

- A. Clean fabric facing upon completion of installation from dust and other foreign materials, following manufacturer's instructions.

### **3.03 PROTECTION**

- A. Provide protection of installed acoustical panels until Date of Substantial Completion.
- B. Replace panels that cannot be cleaned and repaired to satisfaction of the Architect.

**END OF SECTION**

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**SECTION 09 9000**  
**PAINTING AND COATING - K-12 EDUCATION FACILITY GUIDE SPECIFICATION - SHERWIN-**  
**WILLIAMS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Surface preparation.
- B. Interior painting and coating systems.
- C. Exterior painting and coating systems.
- D. Scope:
  - 1. Finish surfaces exposed to view, unless fully factory-finished and unless otherwise indicated, including the following:
    - a. Exterior:
      - 1) Concrete: Non-vehicular floors, patios, porches, steps, and platforms.
      - 2) Wood: Siding, trim, shutters, sashes, and hardboard-bare/primed.
      - 3) Drywall: Gypsum board and exterior drywall.
    - b. Interior:
      - 1) Concrete Masonry Units: Concrete, split face, scored, smooth, high density, low density, and fluted.
      - 2) Metal: Aluminum and galvanized.
      - 3) Metal, Galvanized: Ceilings and ductwork.
      - 4) Metal: Structural steel columns, joists, trusses, beams, miscellaneous and ornamental iron, structural iron, and other ferrous metal.
      - 5) Wood: Walls, ceilings, doors, and trim.
      - 6) Drywall: Walls, ceilings, gypsum board, and similar items.

**1.02 RELATED REQUIREMENTS**

- A. Section 01 6116 - Volatile Organic Compound (VOC) Content Restrictions.
- B. Section 05 5000 - Metal Fabrications: Shop-primed items.
- C. Section 09 9600 - High-Performance Coatings.

**1.03 REFERENCE STANDARDS**

- A. SSPC-SP 1 - Solvent Cleaning 2015, with Editorial Revision (2016).
- B. SSPC-SP 6 - Commercial Blast Cleaning 2007.

**1.04 SUBMITTALS**

- A. See Section 01 3300- Administrative Requirements for submittal procedures.
- B. Product Data: Provide complete list of products to be used, with the following information for each:
  - 1. Product characteristics.
  - 2. Surface preparation instructions and recommendations.
  - 3. Primer requirements and finish specification.
  - 4. Storage and handling requirements and recommendations.
  - 5. Application methods.
  - 6. Clean-up information.

**1.05 QUALITY ASSURANCE**

- A. Applicator Qualifications: Company specializing in performing the type of work specified with minimum 3 years experience and approved by manufacturer.

**1.06 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.

Port Jervis City School District

Additions & Alterations to PJMS

Project No. 2019-011 PH1

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- B. Container Label: Include manufacturer's name, type of paint, product name, product code, color designation, VOC content, batch date, environmental handling, surface preparation, application, and use instructions.
- C. Paint Materials: Store at a minimum of 45 degrees F and a maximum of 90 degrees F, in ventilated area, and as required by manufacturer's instructions.

## **1.07 FIELD CONDITIONS**

- A. Do not apply materials when environmental conditions are outside the ranges required by manufacturer.
- B. Follow manufacturer's recommended procedures for producing the best results, including testing substrates, moisture in substrates, and humidity and temperature limitations.

## **PART 2 PRODUCTS**

### **2.01 MANUFACTURERS**

- A. Basis of Design Products: Subject to compliance with requirements, provide Sherwin-Williams Company (The) products indicated; [www.sherwin-williams.com/#sle](http://www.sherwin-williams.com/#sle).
- B. Comparable Products: Products of approved manufacturers will be considered in accordance with 01 6000 - Product Requirements, and the following:
  - 1. Products that meet or exceed performance and physical characteristics of basis of design products.

### **2.02 PAINTINGS AND COATINGS**

- A. General:
  - 1. Provide factory-mixed coatings unless otherwise indicated.
  - 2. Do not reduce, thin, or dilute coatings or add materials to coatings unless specifically indicated in manufacturer's instructions.
- B. Accessory Materials: Provide primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials as required for final completion of painted surfaces.

### **2.03 PAINT SYSTEMS - EXTERIOR**

- A. Concrete: Non-vehicular floors, patios, porches, steps, and platforms.
  - 1. Acrylic System, Water-Based:
    - a. Floor Finish:
      - 1) 1st and 2nd Coat: Sherwin-Williams Porch and Floor Enamel, A32-200 Series: [www.sherwin-williams.com/#sle](http://www.sherwin-williams.com/#sle).  
(a) 4 mils wet, 1.5 mils dry per coat.
- B. Wood: Siding, trim, shutters, sashes, and hardboard-bare/primed.
  - 1. Latex Systems:
    - a. Satin Finish:
      - 1) 1st Coat: Sherwin-Williams Latex Wood Primer, B42W8041: [www.sherwin-williams.com/#sle](http://www.sherwin-williams.com/#sle).
      - 2) 2nd and 3rd Coat: Sherwin-Williams A-100 Exterior Latex Satin, A82 Series: [www.sherwin-williams.com/#sle](http://www.sherwin-williams.com/#sle).
  - C. Drywall: Gypsum board and exterior drywall.
    - 1. Latex Systems:
      - a. Flat Finish:
        - 1) 1st Coat: Sherwin-Williams Latex Wood Primer, B42W8041: [www.sherwin-williams.com/#sle](http://www.sherwin-williams.com/#sle).  
(a) 4 mils wet, 1.4 mils dry per coat.
        - 2) 2nd and 3rd Coat: Sherwin-Williams A-100 Exterior Latex Flat, A6 Series: [www.sherwin-williams.com/#sle](http://www.sherwin-williams.com/#sle).  
(a) 4 mils wet, 1.2 mils dry per coat.

## 2.04 PAINT SYSTEMS - INTERIOR

- A. Masonry CMU: Concrete, split face, scored, smooth, high density, low density, and fluted.
  - 1. Latex Systems:
    - a. Eg-Shel/Satin Finish:
      - 1) 1st Coat: Sherwin-Williams PrepRite Block Filler, B25W25: [www.sherwin-williams.com/#sle](http://www.sherwin-williams.com/#sle).
      - 2) 2nd and 3rd Coat: Sherwin-Williams ProMar 200 Zero VOC Eg-Shel, B20-2600 Series: [www.sherwin-williams.com/#sle](http://www.sherwin-williams.com/#sle).
    - b. Eg-Shel/Satin Finish High Performance (HP):
      - 1) 1st Coat: Sherwin-Williams PrepRite Block Filler, B25W25: [www.sherwin-williams.com/#sle](http://www.sherwin-williams.com/#sle).
      - 2) 2nd and 3rd Coat: Sherwin-Williams ProMar 200 HP Zero VOC Eg-Shel, B20-1950 Series: [www.sherwin-williams.com/#sle](http://www.sherwin-williams.com/#sle).
- B. Metal: Aluminum and galvanized.
  - 1. Latex Systems:
    - a. Eg-Shel/Satin Finish:
      - 1) 1st Coat: Sherwin-Williams Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series: [www.sherwin-williams.com/#sle](http://www.sherwin-williams.com/#sle).
      - 2) 2nd and 3rd Coats: Sherwin-Williams Pro Industrial Acrylic Eg-Shel, B66-660 Series: [www.sherwin-williams.com/#sle](http://www.sherwin-williams.com/#sle).
- C. Metal, Galvanized: Ceilings and ductwork.
  - 1. Multi-Surface Acrylic Coating System:
    - a. Gloss Finish High Performance:
      - 1) 1st and 2nd Coat: Sherwin-Williams Pro Industrial Multi-Surface Acrylic, B66-1500 Series: [www.sherwin-williams.com/#sle](http://www.sherwin-williams.com/#sle).
  - 2. Dryfall Waterborne Topcoats:
    - a. Eg-Shel Finish:
      - 1) 1st and 2nd Coat: Sherwin-Williams Pro Industrial Waterborne Acrylic Dryfall, B42-82 Series: [www.sherwin-williams.com/#sle](http://www.sherwin-williams.com/#sle).
        - (a) 6 mils wet, 1.9 mils dry per coat.
- D. Metal: Structural steel columns, joists, trusses, beams, miscellaneous and ornamental iron, structural iron, and ferrous metal.
  - 1. Latex Systems:
    - a. Eg-Shel/Satin Finish:
      - 1) 1st Coat: Sherwin-Williams Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series: [www.sherwin-williams.com/#sle](http://www.sherwin-williams.com/#sle).
        - (a) 5 mils wet, 2 mils dry per coat.
      - 2) 2nd and 3rd Coats: Sherwin-Williams Pro Industrial Acrylic Gloss, B66-600 Series: [www.sherwin-williams.com/#sle](http://www.sherwin-williams.com/#sle).
        - (a) 2 to 4 mils dry per coat.
  - 2. Dryfall Waterborne Topcoat:
    - a. Eg-Shel Finish:
      - 1) 1st Coat: Sherwin-Williams Pro Industrial Pro-Cryl Universal Primer, B66-1310 Series: [www.sherwin-williams.com/#sle](http://www.sherwin-williams.com/#sle).
        - (a) 5 mils wet, 2 mils dry per coat.
      - 2) 2nd and 3rd Coat: Sherwin-Williams Pro Industrial Waterborne Acrylic Dryfall, B42-82 Series: [www.sherwin-williams.com/#sle](http://www.sherwin-williams.com/#sle).
        - (a) 6 mils wet, 1.9 mils dry per coat.
- E. Wood: Walls, ceilings, doors, and trim.
  - 1. Latex Systems:
    - a. Eg-Shel/Satin Finish:

- 1) 1st Coat: Sherwin-Williams Premium Wall and Wood Primer, B28W8111: [www.sherwin-williams.com/#sle](http://www.sherwin-williams.com/#sle).  
(a) 4 mils wet, 1.8 mils dry per coat.
  - 2) 2nd and 3rd Coat: Sherwin-Williams ProClassic Waterborne Acrylic Satin, B20 Series: [www.sherwin-williams.com/#sle](http://www.sherwin-williams.com/#sle).  
(a) 4 mils wet, 1.2 mils dry per coat.
- F. Drywall: Walls, ceilings, gypsum board, and similar items.
1. Latex Systems:
    - a. Eg-Shel Finish:
      - 1) 1st Coat: Sherwin-Williams ProMar 200 Zero VOC Interior Latex Primer, B28W2600: [www.sherwin-williams.com/#sle](http://www.sherwin-williams.com/#sle).  
(a) 4 mils wet, 1.5 mils dry per coat.
      - 2) 2nd and 3rd Coat: Sherwin-Williams ProMar 200 Zero VOC Eg-Shel, B20-2600 Series: [www.sherwin-williams.com/#sle](http://www.sherwin-williams.com/#sle).  
(a) 4 mils wet, 1.7 mils dry per coat.
  2. Epoxy Systems, Water-Based: (Locker Room Walls):
    - a. Eg-Shel/Low Luster Finish:
      - 1) 1st Coat: Sherwin-Williams ProMar 200 Zero VOC Interior Latex Primer, B28W2600: [www.sherwin-williams.com/#sle](http://www.sherwin-williams.com/#sle).  
(a) 4 mils wet, 1.5 mils dry per coat.
      - 2) 2nd and 3rd Coat: Sherwin-Williams Pro Industrial Water Based Catalyzed Epoxy, B73-360 Series: [www.sherwin-williams.com/#sle](http://www.sherwin-williams.com/#sle).  
(a) 5 mils wet, 2 mils dry per coat.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.

### **3.02 PREPARATION**

- A. Clean surfaces thoroughly and correct defects prior to application.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
- C. Ferrous Metal:
  1. Solvent clean according to SSPC-SP 1.
  2. Remove rust, loose mill scale, and other foreign substances using methods recommended by paint manufacturer and blast cleaning according to SSPC-SP 6. Protect from corrosion until coated.

### **3.03 APPLICATION**

- A. Remove unfinished louvers, grilles, covers, and access panels on mechanical and electrical components and paint separately.
- B. Apply products in accordance with manufacturer's written instructions.
- C. Apply coatings at spread rate required to achieve manufacturer's recommended dry film thickness.

### **3.04 PRIMING**

- A. Apply primer to all surfaces unless specifically not required by coating manufacturer. Apply in accordance with coating manufacturer's instructions.
- B. Primers specified in painting schedules may be omitted on items factory primed or factory finished items if acceptable to top coat manufacturers.

### **3.05 CLEANING**

- A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.
- B. Clean surfaces immediately of overspray, splatter, and excess material.
- C. After coating has cured, clean and replace finish hardware, fixtures, and fittings previously removed.

### **3.06 PROTECTION**

- A. Protect finished coatings from damage until completion of project.
- B. Touch -up damaged finishes after Substantial Completion.

### **3.07 COLOR SCHEDULE**

- A. Colors noted are based on Sherwin Williams. See paint color locations on interior elevations in Construction Documents. Some locations not shown will be determined in field.
  - 1. PA-1 (Field color)- SW 7028- Incredible White.
  - 2. PA-2 (Tan Accent)- SW 1015- Skyline Steel.
  - 3. PA-3 (Red Accent)- SW 7600- Bolero.
  - 4. PA-4 (Dark Tan Accent)- SW 9172- Studio Clay.
  - 5. PA-5 (Door Frames)- SW 7033- Brainstorm Bronze.
  - 6. PA-6 (Ceilings and Soffits)- SW 7757- High Reflective White.
  - 7. PA-7 (Ceiling Accent)- SW 9055- Billowy Breeze.
  - 8. PA-8 (Accent)- SW 7649- Silverplate.

**END OF SECTION**

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**SECTION 09 9600  
HIGH-PERFORMANCE COATINGS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Epoxy Paint Walls (EPW) -High performance epoxy coating for Locker Rooms.
- B. Surface preparation.

**1.02 RELATED REQUIREMENTS**

- A. Section 01 6116 - Volatile Organic Compound (VOC) Content Restrictions.
- B. Section 09 9123 - Interior Painting: Requirements for mechanical and electrical equipment surfaces.
- C. Section 09 6700 - Fluid-Applied Flooring: High performance fluid-applied flooring systems.

**1.03 REFERENCE STANDARDS**

- A. MPI (APL) - Master Painters Institute Approved Products List; Master Painters and Decorators Association Current Edition.
- B. MPI (APSM) - Master Painters Institute Architectural Painting Specification Manual Current Edition.
- C. NFPA 101 - Life Safety Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- D. SSPC-SP 1 - Solvent Cleaning 2015, with Editorial Revision (2016).
- E. SSPC-SP 6 - Commercial Blast Cleaning 2007.

**1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide complete list of all products to be used, with the following information for each:
  - 1. Manufacturer's name, product name and/or catalog number, and general product category (e.g. "alkyd enamel").
  - 2. MPI product number (e.g. MPI #47).
  - 3. Cross-reference to specified coating system(s) product is to be used in; include description of each system.
- C. Samples: Submit two samples 8 by 8 inch in size illustrating colors available for selection.
- D. Manufacturer's Certificate: Certify that high-performance coatings comply with VOC limits specified.
- E. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
- F. Manufacturer's Installation Instructions: Indicate special procedures and perimeter conditions requiring special attention.
- G. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.
  - 1. Extra Coating Materials: 1 gallon of each type and color.
  - 2. Label each container with manufacturer's name, product number, color number, and room names and numbers where used.

**1.05 QUALITY ASSURANCE**

- A. Maintain one copy of each referenced document that applies to application on site.
- B. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three years documented experience.
- C. Applicator Qualifications: Company specializing in performing the work of this section with minimum 3 years documented experience.

## **1.06 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver products to site in sealed and labeled containers; inspect to verify acceptability.
- B. Container Label: Include manufacturer's name, type of coating, brand name, lot number, brand code, coverage, surface preparation, drying time, cleanup requirements, color designation, and instructions for mixing and reducing.
- C. Coating Materials: Store at minimum ambient temperature of 45 degrees F and a maximum of 90 degrees F, in ventilated area, and as required by manufacturer's instructions.

## **1.07 FIELD CONDITIONS**

- A. Follow manufacturer's recommended procedures for producing best results, including testing of substrates, moisture in substrates, and humidity and temperature limitations.
- B. Do not install materials when temperature is below 55 degrees F or above 90 degrees F.
- C. Maintain this temperature range, 24 hours before, during, and 72 hours after installation of coating.
- D. Restrict traffic from area where coating is being applied or is curing.

## **1.08 WARRANTY**

- A. See Section 01 7800 - Closeout Submittals for additional warranty requirements.
- B. Correct defective Work within a five year period after Date of Substantial Completion.
- C. Warranty: Include coverage for bond to substrate.

## **PART 2 PRODUCTS**

### **2.01 MANUFACTURERS**

- A. Only materials (primers, coatings, etc.) listed in the latest edition of the MPI Approved Product List (APL) are acceptable for use on this project.
- B. Provide high performance coating products from the same manufacturer to the greatest extent possible.
  - 1. In the event that a single manufacturer cannot provide specified products, minor exceptions will be permitted provided approval by Architect is obtained using the specified procedures for substitutions.
  - 2. Substitution of other products by the same manufacturer is preferred over substitution of products by a different manufacturer.
- C. High-Performance Coatings:
  - 1. Sherwin-Williams Company: [www.protective.sherwin-williams.com/industries/#sle](http://www.protective.sherwin-williams.com/industries/#sle).
  - 2. Substitutions: Section 01 6000 - Product Requirements.

### **2.02 HIGH-PERFORMANCE COATINGS**

- A. Provide coating systems that meet the following minimum performance criteria, unless more stringent criteria are specified:
  - 1. Surface Burning Characteristics: Flame spread/Smoke developed index of 0/0, maximum, when tested in accordance with ASTM E84.
  - 2. NFPA 101, Class A rated.

### **2.03 TOP COAT MATERIALS**

- A. Coatings - General: Provide complete multi-coat systems formulated and recommended by manufacturer for the applications indicated, in the thicknesses indicated; number of coats specified does not include primer or filler coat.
  - 1. Volatile Organic Compound (VOC) Content: See Section 01 6116.
- B. Epoxy Coating for Locker Room and attached Restroom Walls & Shower.:
  - 1. Number of coats: Two.
  - 2. Product Characteristics: Outstanding Hardness, Scrub & Corrosion Resistance, Excellent Stain Blocking and Stain Resistance.



3. Top Coat(s): High Performance Institutional, Two-Component, Water Based Epoxy Coating; Sherwin Williams Water-Based Catalyzed Epoxy.
  - a. Sheen: Eggshell.
  - b. Products:
    - 1) Basis of Design: Sherwin-Williams; Pro Industrial Water Based Catalyzed Epoxy: [www.protective.sherwin-williams.com/#sle](http://www.protective.sherwin-williams.com/#sle). (MPI #254)
    - 2) Substitutions: Section 01 6000 - Product Requirements.

## **2.04 PRIMERS**

- A. Primers: Provide the following unless other primer is required or recommended by coating manufacturer.
  1. Block Filler, Epoxy; MPI #116.
    - a. Products:
      - 1) PPG Paints; Amerlock 400 Epoxy Block Filler, 400BF: [www.ppgpaints.com/#sle](http://www.ppgpaints.com/#sle).
      - 2) Substitutions: Section 01 6000 - Product Requirements.
  2. Block Filler, Latex; MPI #4.
    - a. Products:
      - 1) Sherwin-Williams; PrepRite Interior/Exterior Block Filler: [www.protective.sherwin-williams.com/#sle](http://www.protective.sherwin-williams.com/#sle). (MPI #4)
      - 2) Substitutions: Section 01 6000 - Product Requirements.
  3. Anti-Corrosive for Metal, Alkyd; MPI #79.
    - a. Products:
      - 1) PPG Paints; Speedhide Interior/Exterior Rust Inhibitive Steel Primer, 6-212 Series: [www.ppgpaints.com/#sle](http://www.ppgpaints.com/#sle). (MPI #79)
      - 2) Substitutions: Section 01 6000 - Product Requirements.

## **2.05 ACCESSORY MATERIALS**

- A. Accessory Materials: Provide primers, sealers, cleaning agents, cleaning cloths, sanding materials, and clean-up materials as required for final completion of coated surfaces.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify existing conditions before starting work.
- B. Do not begin application of coatings until substrates have been properly prepared.
- C. Verify that substrate surfaces are ready to receive work as instructed by the coating manufacturer. Obtain and follow manufacturer's instructions for examination and testing of substrates.
- D. Examine surfaces scheduled to be finished prior to commencement of work. Report any condition that may potentially affect proper application.

### **3.02 PREPARATION**

- A. Clean surfaces of loose foreign matter.
- B. Remove substances that would bleed through finished coatings. If unremovable, seal surface with shellac.
- C. Remove finish hardware, fixture covers, and accessories and store.
- D. Ferrous Metal:
  1. Solvent clean according to SSPC-SP 1.
  2. Remove rust, loose mill scale, and other foreign substances using methods recommended in writing by paint manufacturer and blast cleaning according to SSPC-SP 6 "Commercial Blast Cleaning", and protect from corrosion until coated.
- E. Protect adjacent surfaces and materials not receiving coating from spatter and overspray; mask if necessary to provide adequate protection. Repair damage.

### **3.03 PRIMING**

- A. Apply primer to all surfaces, unless specifically not required by coating manufacturer. Apply in accordance with coating manufacturer's instructions.

### **3.04 COATING APPLICATION**

- A. Apply coatings in accordance with manufacturer's written instructions, to thicknesses specified and recommendations in MPI - Architectural Painting and Specification Manual.
- B. Apply in uniform thickness coats, without runs, drips, pinholes, brush marks, or variations in color, texture, or finish. Finish edges, crevices, corners, and other changes in dimension with full coating thickness.

### **3.05 FIELD QUALITY CONTROL**

- A. See Section 01 4000 - Quality Requirements for general requirements for field inspection.

### **3.06 CLEANING**

- A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.
- B. Clean surfaces immediately of overspray, splatter, and excess material.
- C. After coating has cured, clean and replace finish hardware, fixtures, and fittings previously removed.

### **3.07 PROTECTION**

- A. Protect finished work from damage.

**END OF SECTION**

**SECTION 09 9723  
CONCRETE AND MASONRY COATINGS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Moisture resistant textured concrete and masonry coatings.
- B. Moisture resistant smooth concrete and masonry coatings.

**1.02 REFERENCE STANDARDS**

- A. ASTM E96/E96M - Standard Test Methods for Gravimetric Determination of Water Vapor Transmission Rate of Materials 2021.

**1.03 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.

**1.04 QUALITY ASSURANCE**

- A. Maintain one copy of each referenced document that applies to application on site.
- B. Applicator Qualifications: Company specializing in performing the work of this section with minimum 5 years documented experience.

**1.05 FIELD CONDITIONS**

- A. Do not install materials when temperature is below 55 degrees F or above 90 degrees F.
- B. Maintain this temperature range, 24 hours before, during, and 72 hours after installation of coating.
- C. Restrict traffic from area where coating is being applied or is curing.

**1.06 WARRANTY**

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.
- B. Correct defective Work within a five year period after Date of Substantial Completion.
- C. Warranty: Include coverage for bond to substrate.

**PART 2 PRODUCTS**

**2.01 MANUFACTURERS**

- A. Concrete and Masonry Coatings:
  - 1. Sherwin Williams; [www.sherwin-williams.com/#sle..](http://www.sherwin-williams.com/#sle..)
  - 2. Substitutions: Section 01 6000 - Product Requirements.

**2.02 MATERIALS**

- A. Coatings - General: Provide complete systems formulated and recommended by manufacturer for the applications indicated, in the thicknesses indicated.
- B. High Build, One Coat, Water Based Textured Coating for 'Green' Concrete: Water based, epoxy-acrylic resin with graded perlite aggregate.
  - 1. Stated by manufacturer as suitable for installation on visibly damp surfaces and concrete that has hardened but is not fully cured ("green" concrete) without requiring a primer.
  - 2. Dry Film Thickness: 15 mils, minimum.
  - 3. Water Vapor Transmission: 20 perms, maximum, when tested in accordance with ASTM E96/E96M.
  - 4. Color: clear.

**PART 3 EXECUTION**

**3.01 EXAMINATION**

- A. Verify existing conditions before starting work.
- B. Verify that substrate surfaces are ready to receive work as instructed by the coating manufacturer. Obtain and follow manufacturer's instructions for examination and testing of

substrates.

- C. Cementitious Substrates: Do not begin application until substrate has cured 28 days minimum and measured moisture content is not greater than 16 percent.

### **3.02 PREPARATION**

- A. Clean surfaces of loose foreign matter.
- B. Remove substances that would bleed through finished coatings.
- C. Remove finish hardware, fixture covers, and accessories and store.
- D. Protect adjacent surfaces and materials not receiving coating from spatter and overspray; mask if necessary to provide adequate protection. Repair damage.

### **3.03 PRIMING**

- A. Apply primer to all surfaces, unless specifically not required by coating manufacturer. Apply in accordance with coating manufacturer's instructions.

### **3.04 COATING APPLICATION**

- A. Apply coatings in accordance with manufacturer's instructions, to thicknesses specified.
- B. Apply in uniform thickness coats, without runs, drips, pinholes, brush marks, or variations in color, texture, or finish. Finish edges, crevices, corners, and other changes in dimension with full coating thickness.

### **3.05 CLEANING**

- A. Collect waste material that could constitute a fire hazard, place in closed metal containers, and remove daily from site.
- B. Clean surfaces immediately of overspray, splatter, and excess material.
- C. After coating has cured, clean and replace finish hardware, fixtures, and fittings previously removed.

### **3.06 PROTECTION**

- A. Protect finished work from damage.

**END OF SECTION**

**SECTION 10 1100  
VISUAL DISPLAY UNITS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Porcelain enamel steel markerboards.
- B. Tackboards.
- C. Tackstrips.
- D. Display Rail with Flagholder.
- E. Magnetic Eraser.
- F. Magnets.

**1.02 RELATED REQUIREMENTS**

- A. Section 09 2116 - Gypsum Board Assemblies: Concealed supports in metal stud walls.

**1.03 REFERENCE STANDARDS**

- A. ANSI A208.1 - American National Standard for Particleboard 2016.
- B. ASTM A424/A424M - Standard Specification for Steel, Sheet, for Porcelain Enameling 2018.
- C. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2021a.
- D. ASTM F793/F793M - Standard Classification of Wall Coverings by Use Characteristics 2020.

**1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide manufacturer's data on porcelain enamel steel markerboard, tackboard, tackboard surface covering, trim, and accessories.
- C. Shop Drawings: Indicate wall elevations, dimensions, joint locations , special anchor details.
- D. Samples: Color charts for selection of color and texture of chalkboard, porcelain enamel steel markerboard, glass markerboard, tackboard, tackboard surface covering, and trim.
- E. Maintenance Data: Include data on regular cleaning, stain removal , and cleaning methods.

**1.05 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.

**1.06 WARRANTY**

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.
- B. Provide five year warranty for chalkboard and markerboard to include warranty against discoloration due to cleaning, crazing or cracking, and staining.

**PART 2 PRODUCTS**

**2.01 MANUFACTURERS**

- A. Claridge Products and Equipment, Inc: [www.claridgeproducts.com/#sle](http://www.claridgeproducts.com/#sle).
- B. MooreCo, Inc: [www.moorecoinc.com/#sle](http://www.moorecoinc.com/#sle).
- C. Egan Visual Corporation: [www.egan.com/#sle](http://www.egan.com/#sle).
- D. Nelson Adams NACO: [www.nelsonadamsnaco.com/#sle](http://www.nelsonadamsnaco.com/#sle).
- E. Substitutions: See Section 01 6000 - Product Requirements.

**2.02 VISUAL DISPLAY UNITS**

- A. Porcelain Enamel Steel Markerboards:
  - 1. Color: White.

2. Steel Face Sheet Thickness: 24 gauge, 0.0239 inch .
  3. Core: Particleboard, manufacturer's standard thickness, laminated to face sheet.
  4. Backing: Aluminum foil, laminated to core.
  5. Size: As indicated on drawings.
  6. Height: 48 inches.
  7. Length: As indicated on drawings.
  8. Frame: Extruded aluminum , with concealed fasteners.
  9. Frame Finish: Anodized, natural.
  10. Accessories: Provide marker tray and map rail. See accessories note below.
  11. Manufacturers:
    - a. Egan Visual Corporation; Egan Visual WhiteBoards: [www.egan.com/#sle](http://www.egan.com/#sle).
    - b. Claridge; Claridge Whiteboards: [www.claridgeproducts.com/#sle](http://www.claridgeproducts.com/#sle).
    - c. Substitutions: See Section 01 6000 - Product Requirements.
- B. Tackboards:
1. Fabric: Vinyl coated fabric.
  2. Color: As selected from manufacturer's full range.
  3. Backing: Hardboard, 1/4 inch thick, laminated to tack surface.
  4. Surface Burning Characteristics: Flame spread index of 25, maximum, and smoke developed index of 450, maximum, when tested in accordance with ASTM E84.
  5. Size/ Type: As indicated on drawings.
  6. Manufacturers:
    - a. Egan Visual Corporation; Egan Visual TackBoards: [www.egan.com/#sle](http://www.egan.com/#sle).

## 2.03 MATERIALS

- A. Porcelain Enameled Steel Sheet: ASTM A424/A424M, Type I, Commercial Steel, with fired-on vitreous finish.
- B. Vinyl Coated Fabric: ASTM F793 Category VI.
- C. Particleboard: ANSI A208.1; wood chips, set with waterproof resin binder, sanded faces.
- D. Foil Backing: Aluminum foil sheet, 0.005 inch thick.

## 2.04 ACCESSORIES

- A. Map & Display Rail with Flagholder: Basis of Design: Claridge 74 EZ Rail; 2" wide with a 1 5/8" tan cork insert, 2 metal map hooks, 1 flag holder, and flat stops at each end. Extruded aluminum, manufacturer's standard profile. Runs full length at DEMWC in all instructional spaces receiving DEMWC, and locations with individual display boards- location to be determined .
- B. Temporary Protective Cover: Sheet polyethylene, 8 mil thick.
- C. Flag Holders: Cast aluminum bored to receive 1 inch diameter flag staff, bracketed to fit top rail of board.
- D. Marker Tray: Aluminum, Slim magnetic marker tray- Basis of Design: Claridge #267-M1- 1 1/2" h x 12" w x 2 1/2" d with Rare Earth magnets., one piece full length of markerboard, molded ends, concealed fasteners, same finish as frame. For locations with DEMWC- see construction documents for additional information.
- E. Mounting Brackets: Concealed.
- F. Magnetic Eraser- Basis of Design: Claridge #MGM-ME1- Black Felt eraser with Rare Earth Magnets.

## PART 3 EXECUTION

### 3.01 EXAMINATION

- A. Verify that field measurements are as indicated.
- B. Verify that internal wall blocking is ready to receive work and positioning dimensions are as indicated on shop drawings.

### **3.02 PREPARATION**

- A. Acclimatize tackable wall panels by removing from packaging in installation area not less than 24 hours before application.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

### **3.03 INSTALLATION**

- A. Install boards in accordance with manufacturer's instructions.
- B. Install with top of marker tray at 30 inches above finished floor.
- C. Secure units level and plumb.

### **3.04 CLEANING**

- A. Clean board surfaces in accordance with manufacturer's instructions.
- B. Cover with protective cover, taped to frame.
- C. Remove temporary protective cover at Date of Substantial Completion.

### **3.05 DISPLAY BOARD TYPES**

- A. Type A: 72" w x 42" h- Dry Erase White Board.
- B. Type B: 72" w x 42" h- Dry Erase White board with Staff lines.
- C. Type C: 36" w x 42" h Tack Board.

**END OF SECTION**

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## **SECTION 10 1200 DISPLAY CASES**

### **PART 1 GENERAL**

#### **1.01 SECTION INCLUDES**

- A. Recessed display cases.

#### **1.02 RELATED REQUIREMENTS**

- A. Section 06 1000 - Rough Carpentry: Blocking and supports.
- B. Section 09 2216 - Non-Structural Metal Framing: Concealed supports in metal stud walls.

#### **1.03 REFERENCE STANDARDS**

- A. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum 2020.
- B. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes 2021.
- C. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric) 2021.
- D. ASTM C1048 - Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass 2018.
- E. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2021a.

#### **1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Submit complete printed data and installation details indicating products to be provided as specified.
- C. Shop Drawings: Submit complete installation details. Include dimensioned elevations.
- D. Samples: Submit samples of material and trim to illustrate finish, color, and texture.
- E. Specimen Warranty.

#### **1.05 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with at least three years of documented experience.

#### **1.06 DELIVERY, STORAGE AND HANDLING**

- A. Deliver display cases and materials to the Project site with manufacturer's protective crate covering and do not open until ready for use.
- B. Protect display cases before, during, and after installation. In case of damage, immediately provide necessary repairs and replacements.

#### **1.07 FIELD CONDITIONS**

- A. Field Measurements: Verify field measurements for recessed application for display cases before preparation of shop drawings and before fabrication to ensure proper installation.

#### **1.08 WARRANTY**

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.
- B. Correct defective Work within a five year period after Date of Substantial Completion.
- C. Provide five year manufacturer warranty against defects and in materials, finish product and workmanship.

### **PART 2 PRODUCTS**

#### **2.01 MANUFACTURERS**

- A. Basis of Design: Waddell/GMI Companies; [www.waddellfurniture.com/#sle..](http://www.waddellfurniture.com/#sle..)

B. Substitutions: See Section 01 6000 - Product Requirements.

## **2.02 DISPLAY CASES**

- A. Recessed Display Case: Waddell 1400 Series factory-fabricated wood-framed display case with adjustable glass shelves, finished interior, and aluminum trim on face to cover edge of recessed opening.
- B. Display Case Type 1:
  - 1. Width: 96
  - 2. Height: 48".
  - 3. Depth: 16"
- C. Display Case Type2:
  - 1. Width: 60"
  - 2. Height: 48"
  - 3. Depth: 16"
- D. Components:
  - 1. Glazed Doors: Sliding.
    - a. Number of Doors: Two pair.
  - 2. Side Panels: Stained veneer plywood.
  - 3. Back Panel: Tackable.
  - 4. Top Panel: Stained veneer plywood.
  - 5. Bottom Panel: Stained veneer plywood.
  - 6. Lighting: Fluorescent.

## **2.03 COMPONENTS**

- A. Wood Case Construction: 3/4 inch 7-ply maple veneer plywood with manufacturer's standard stain.
- B. Aluminum Framed Case Construction: 1-1/2 inch by 2 inch extruded aluminum tube frame with tempered glass, laminate-faced, and stained veneer plywood infill panels.
- C. Glazed Sliding Doors:
  - 1. 1/4 inch clear tempered glass with plastic finger pulls.
  - 2. Door track: Extruded aluminum glass shoe with bottom rollers and top plastic guide.
- D. Glass Shelves:
  - 1. 1/4 inch clear tempered glass with flat-polished edges.
  - 2. Shelves per Unit: Two.
- E. Shelf Standards and Brackets: Single-slotted channel standards for brackets adjustable in 1 inch increments along entire length of standard, drilled and countersunk for screws.
  - 1. Standards Mounting: Recess-mounted into back panel.
  - 2. Finish: Anochrome.
  - 3. Brackets: Boltless with lip front; 16 gauge, 0.0598 inch sheet steel, reinforced, locking into slots; size to suit shelves; same finish as standards.
- F. Tackable Back Panel: Fine-grained, homogeneous natural cork on hardboard.
  - 1. Cork Thickness: 1/8 inch.
  - 2. Fabric: Vinyl fabric; minimum fabric weight: 13 oz/sq yd.
  - 3. Color, Texture, Weave, and Pattern: As selected from manufacturer's full range.
  - 4. Backing: Hardboard, 1/4 inch thick, factory laminated to tack surface.
  - 5. Surface Burning Characteristics: Flame spread index of 25, maximum, and smoke developed index of 450, maximum, when tested in accordance with ASTM E84.
- G. Lighting: Manufacturer's standard fluorescent light fixture housed at top of case with louvered aluminum access door with keyed lock.
  - 1. Surface Mounted: Under cabinet type fixture.
  - 2. Controls: On/Off using dedicated wall switch.

## **2.04 MATERIALS**

- A. Aluminum Extrusions for Framing and Trim: Alloy as recommended by manufacturer for construction and specified finish; nominal 1/8 inch wall thickness.
- B. Aluminum Extrusions: ASTM B221 (ASTM B221M), 6063 alloy, T5 temper.
  - 1. Finish: Factory anodized; AAMA 611: Clear anodized.
- C. Plywood: Softwood plywood with veneer core, waterproof glue, 3/4 inch thick.
- D. Heat-Strengthened and Fully Tempered Glass: ASTM C1048, Kind FT.

## **PART 3 EXECUTION**

### **3.01 PREPARATION**

- A. Rough openings, electrical pre-wiring, and final finishing are by other trades.

### **3.02 INSTALLATION**

- A. Install in accordance with manufacturer's instructions.
- B. Provide factory trained installers.
- C. Refer to drawings for display case mounting heights.
- D. Provide vinyl wrapped H-moldings to match vinyl covered boards.
- E. Clean case and glass using manufacturers recommended procedures.
- F. Provide mitered and wrapped hairline joints for all trims.

### **3.03 ADJUSTING AND CLEANING**

- A. Verify that all accessories are installed as detailed for each unit.
- B. At completion of work, clean glass surfaces, back panels and trim in accordance with manufacturer's recommendations leaving units ready for use.

### **3.04 CLOSEOUT ACTIVITIES**

- A. See Section 01 7800 - Closeout Submittals, for closeout submittals.

**END OF SECTION**

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## **SECTION 10 1400 SIGNAGE**

### **PART 1 GENERAL**

#### **1.01 SECTION INCLUDES**

- A. Room and door signs.
- B. Interior directional and informational signs.
- C. Emergency evacuation maps.
- D. Building identification signs.
- E. Plaque.
- F. Dimensional letters.

#### **1.02 REFERENCE STANDARDS**

- A. The New York State Uniform Fire Prevention and Building Code 2020.
- B. The New York State Education Department Manual of Planning Standards for Educational Facilities, March 1998.
- C. 36 CFR 1191 - Americans with Disabilities Act (ADA) Accessibility Guidelines for Buildings and Facilities; Architectural Barriers Act (ABA) Accessibility Guidelines current edition.
- D. ADA Standards - Americans with Disabilities Act (ADA) Standards for Accessible Design 2010.
- E. ICC A117.1 - Accessible and Usable Buildings and Facilities 2017.

#### **1.03 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Manufacturer's printed product literature for each type of sign, indicating sign styles, font, foreground and background colors, locations, overall dimensions of each sign.
- C. Signage Schedule: Provide information sufficient to completely define each sign for fabrication, including room number, room name, other text to be applied, sign and letter sizes, fonts, and colors.
  - 1. When room numbers to appear on signs differ from those on drawings, include the drawing room number on schedule.
  - 2. When content of signs is indicated to be determined later, request such information from Owner through Architect at least 2 months prior to start of fabrication; upon request, submit preliminary schedule.
  - 3. Submit for approval by Owner through Architect prior to fabrication.
- D. Samples: Submit two samples of each type of sign, of size similar to that required for project, illustrating sign style, font, and method of attachment.
- E. Selection Samples: Where colors are not specified, submit two sets of color selection charts or chips.
- F. Verification Samples: Submit samples showing colors specified.
- G. Manufacturer's Installation Instructions: Include installation templates and attachment devices.
- H. Manufacturer's Qualification Statement.
- I. Maintenance Materials: Furnish the following for Owner's use in maintenance of project.

#### **1.04 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum five years of documented experience.

#### **1.05 DELIVERY, STORAGE, AND HANDLING**

- A. Package signs as required to prevent damage before installation.
- B. Package room and door signs in sequential order of installation, labeled by floor or building.

- C. Store tape adhesive at normal room temperature.

## **1.06 FIELD CONDITIONS**

- A. Do not install the sign units until all other finishing operations, including painting, have been completed unless otherwise directed.
- B. Do not install tape adhesive when ambient temperature is lower than recommended by manufacturer.
- C. Maintain this minimum temperature during and after installation of signs.

## **PART 2 PRODUCTS**

### **2.01 MANUFACTURERS**

- A. Flat Signs:
  - 1. Mohawk Sign Systems, Inc; Basis of Design: Series 200A, Sand-carved: [www.mohawksign.com/#sle](http://www.mohawksign.com/#sle).
  - 2. Substitutions: See Section 01 6000 - Product Requirements.
- B. Dimensional Letter Signs:
  - 1. Basis of Design: ASI Interior Dimensional Letters: [www.asisignage.com/#sle](http://www.asisignage.com/#sle).
  - 2. Substitutions: See Section 01 6000 - Product Requirements.
- C. Vinyl Wall Graphics: (printed and cut 3M Control Tac Vinyl letters and Custom image. See locations and sizes on Gymnasium Interior Elevations).
  - 1. Substitutions: See Section 01 6000 - Product Requirements.
- D. Plaques:
  - 1. Basis of Design: Impact Signs; Etched Bronze: [www.impactsigns.com/#sle](http://www.impactsigns.com/#sle).
  - 2. Substitutions: See Section 01 6000 - Product Requirements.

### **2.02 SIGNAGE APPLICATIONS**

- A. Accessibility Compliance: Signs are required to comply with ADA Standards and ICC A117.1 2017, unless otherwise indicated; in the event of conflicting requirements, comply with the most comprehensive and specific requirements.
- B. Room and Door Signs: Provide a sign for every doorway in the area of alterations and additions, including the corridor and all other common areas.
  - 1. Room and Door Signs: Provide a sign for every doorway, whether it has a door or not, not including corridors, lobbies, and similar open areas.
  - 2. Sign Type: Flat signs with engraved panel media as specified.
  - 3. Provide "tactile" signage, with letters raised minimum 1/32 inch and Grade II braille.
    - a. Tactile characters shall be raised 1/32" inches from the sign face.
    - b. Glue-on letter or etched backgrounds are not acceptable.
  - 4. Character Height: 1 inch.
  - 5. Sign Height: 2 inches, unless otherwise indicated.
  - 6. Classroom Signs Dimensions: 6" x 6" with single window insert.
    - a. Owner to provide window inserts.
  - 7. Office Doors: Identify with room numbers to be determined later, not the numbers indicated on drawings; in addition, provide "window" section for replaceable occupant name.
  - 8. Conference and Meeting Rooms: Identify with room numbers to be determined later, not the numbers indicated on drawings; in addition, provide "window" section with sliding "In Use/Vacant" indicator.
  - 9. Service Rooms: Identify with room names and numbers to be determined later, not those indicated on drawings.
  - 10. Stair Doors: Identify sign stating: "STAIR" and include a stair pictogram.
  - 11. Rest Rooms and Locker rooms: Identify with pictograms, the names "MEN" and "WOMEN", room numbers to be determined later, and braille.

- a. Restroom and Locker room Signs Dimensions: Minimum 8" x 8" with New York State 4" accessibility symbol, gender symbol and verbal description. Grade 2 braille to follow directly below the text.
    - 1) Gender Neutral Single Occupancy Toilet Room Signage: provide gender neutral single-occupancy toilet room signage in accordance with New York State Education Law Section 409-m.
    - 2) Gender Neutral signage to comply with the Building Code of New York State and ANSI A117.1 Standards.
    - 3) Gender Neutral signage location to be coordinated during shop drawing phase.
- C. Interior Directional and Informational Signs:
  1. Sign Type: Same as room and door signs.
  2. Sign Type: Curved signs with engraved panel media as specified.
  3. Sizes: As indicated on drawings.
  4. Allow for 20 signs 4 inches high by 16 inches long.
  5. Wording of signs is scheduled on drawings.
  6. Provide at non-accessible drinking fountains, restrooms
- D. Emergency Evacuation Maps:
  1. Allow for one map per elevator lobby.
  2. Map content to be provided by Owner.
  3. Use clear plastic panel silk-screened on reverse, in brushed aluminum frame, screw-mounted.
- E. Room Occupancy Signs:
  1. Provide Room Occupancy signs in all rooms where the rooms are calculated to have greater than 50 occupants or spaces of 1,000 square feet.
  2. Room Occupancy signs shall state the maximum number of occupants permitted within the space.
    - a. Comply with The State Education Department, Educational Facilities Manual of Planning Standards.
    - b. Comply with the New York State Uniform Fire Prevention and Building Code, 2020, Section 1004.9.
    - c. Coordinate with Owner & Architect during shop drawing phase.
- F. Stairway Identification Signs:
  1. Provide signs at each floor landing in an interior stairway and ramp connecting more than three stories designating the floor level, the terminus of the top and bottom of the interior exit stairway and ramp and the identification of the stairway or ramp. The signage shall state the story of and the direction to the exit discharge, and the availability of roof access from the interior exit stairway and ramp for the fire department.
    - a. Locate signs five feet above the floor landing in a position that is readily visible when the doors are in the open and closed position.
    - b. Sign Type:
    - c. Sign Size: 12 inches x 18 inches.
  2. In addition to the stairway identification signs, a floor-level sign in visual characters, raised characters and braille shall be located at each floor-level landing adjacent to the door leading from the interior exit stairway and ramp into the corridor to identify the floor level.
    - a. Sign Type:
    - b. Sign Size: 6 inches x 6 inches.
  3. Comply with the Building Code of New York State for signage requirements.
- G. Accessible Entrance Signs:
  1. Provide signs with NYS Symbol of Accessibility at accessible entrances where not all entrances are accessible.
  2. Provide directional signs with NYS Symbol of Accessibility indicating the route to the nearest accessible building entrance at all non accessible building entrances.
  3. Sign Type: Same as room and door signs.

4. Sign Size: 6" x 6".
- H. Emergency Elevator Sign:
  1. Locate at each elevator call station on all floors instructing occupants to use the exit stairways and not to use the elevators in case of fire. The sign shall read: IN CASE OF FIRE, ELEVATORS ARE OUT OF SERVICE. USE EXIT STAIRS.
  2. Locate at elevators that are suitable for self-evacuation. Post signage at all floors adjacent to each elevator call station serving occupant evacuation elevators.
- I. Diaper Changing Station:
  - a. In Alternate GC-1, diaper changing stations will be provided in the Men's and Women's Gang Toilet Rooms outside the Gymnasium.
- J. Delayed Egress Locking System Signs:
  1. Provide signs to be placed on the doors with delayed egress locking systems and shall be located above and within 12 inches of the door exit hardware. Comply with visual character requirements per ICC A117.1.
  2. For doors that swing in the direction of egress, the sign shall read: PUSH UNTIL ALARM SOUNDS. DOOR CAN BE OPENED IN 15 SECONDS.
  3. For doors that swing in the opposite direction of egress, the sign shall read: PULL UNTIL ALARM SOUNDS. DOOR CAN BE OPENED IN 15 SECONDS.
- K. Emergency Shower and Eyewash Stations:
  1. Provide signs at emergency showers, eyewash stations and combination emergency shower/eyewash stations.
  2. Sign Type: Same as room and door signs.
  3. Sign Size: 6" x 6"
  4. Provide sign stating: EMERGENCY EYE WASH STATION. Include eyewash pictogram.
  5. Provide sign stating: EMERGENCY SHOWER / EMERGENCY EYE WASH. Include shower and eyewash pictograms.
  6. Provide sign stating: EMERGENCY SHOWER. Include shower pictogram.
- L. Truss Identification Sign:
  1. Provide truss identification signs at newly constructed buildings or existing building additions that utilize truss type construction as defined in 19 NYCRR Part 1264 Identification of Buildings Utilizing Truss Type Construction.
  2. Signs Application:
    - a. Signs applied to doors or sidelights: Permanent non-fading sticker or decal.
    - b. Signs not directly applied to doors or sidelights: Sturdy, non-fading, aluminum.
  3. Locate signs in accordance with 19 NYCRR Part 1264, Table at the following locations:
    - a. Exterior building entrance doors, exterior exit discharge doors, exterior roof access doors to stairways. Attach sign to the door, or attached to a sidelight or the face of the building, not more than 12 inches horizontally from the latch side of the door jamb, and not less than 42 inches nor more than 60 inches above the adjoining walking surface.
    - b. Multiple contiguous exterior building entrance or exit discharge doors. Attach sign at each end of row of doors and at a maximum horizontal distance of 12 feet between signs, and not less than 42 inches or more than 60 inches above the adjoining walking surface.
    - c. Fire department hose connections. Attach sign to the face of the building, not more than 12 inches horizontally from the center line of the fire department hose connection, and not less than 42 inches nor more than 60 inches above the adjoining walking surface.

## 2.03 SIGN TYPES

- A. Flat Signs: Signage media without frame.
  1. Edges: Square.
  2. Corners: Radiused.



3. Clear Cover: For customer produced sign media, provide clear cover of polycarbonate plastic, glossy on back, non-glare on front.
  4. Wall Mounting of One-Sided Signs: Concealed screws at exterior signage and vinyl tape at interior signs.
- B. Color and Font: Unless otherwise indicated:
1. Character Font: Helvetica, Arial, or other sans serif font.
  2. Character Case: Upper case only.
  3. Background Color: as selected by Architect.
  4. Character Color: Contrasting color.

## **2.04 TACTILE SIGNAGE MEDIA**

- A. Engraved Panels: Laminated colored plastic; engraved through face to expose core as background color:
1. Total Thickness: 1/8 inch.
  2. Material: Plaque material shall be melamine plastic laminate with contrasting core color.
    - a. The melamine shall be non-static, fire-retardant and self-extinguishing.
      - 1) Flame Spread: Less than 25.
      - 2) Smoke Developed Values: 95-120
      - 3) Auto Ignition Temperature: Greater than 450 degrees F.
    - b. The plastic laminate is to be impervious to most acids, alkalies, alcohol, solvents, abrasives and boiling water.

## **2.05 NON-TACTILE SIGNAGE MEDIA**

- A. Silk Screened Plastic Panels: Letters and graphics silk screened onto reverse side of plastic surface:
1. Sign Color: Clear.
  2. Total Thickness: 1/8 inch.

## **2.06 PLAQUES**

- A. Metal Plaques:
1. Metal: Bronze sheet, flat, etched.
  2. Metal Thickness: 1/8 inch, minimum.
  3. Size: 28 inches by 18 inches.
  4. Text and Typeface:
    - a. Character Font: Helvetica, Arial, or other sans serif font.
    - b. Character Case: Upper and lower case (title case).
    - c. Character Color: Contrast with background color.
  5. Border Style: Single line bevel edge.
  6. Background Texture: Satin.
  7. Surface Finish: Polished.
  8. Painted Background Color: Light oxide stain.
  9. Protective Coating: Manufacturer's standard clear coating.
  10. Product: Basis of Design: Impact Signs-Etched Bronze Plaque..
  11. Mounting: Rosettes, machine screws, and expansion sleeves .
    - a. Rosette Style: As selected by Architect from manufacturer's standard rosettes.
    - b. Rosette Diameter: 3/8 inch.

## **2.07 DIMENSIONAL LETTERS**

- A. Metal Letters:
1. Metal: Aluminum casting.
  2. Metal Thickness: 1/8 inch minimum.
  3. Letter Height: As indicated below.
  4. Text and Typeface:
    - a. Character Font: Helvetica, Arial, or other sans serif font.
    - b. Character Case: Upper case only.

5. Finish: Brushed, satin.
6. Product: Basis of Design: ASI- Interior Dimensional Letters- Cast Metal Letters .
7. Mounting: Stand off with concealed studs.
8. Provide the following Room names in Dimensional Letters:
  - a. CAFETERIA: (8" letters)
  - b. GYMNASIUM: (8" letters)
  - c. LIBRARY (2 locations): (4" letters)
  - d. MAIN OFFICE (2 locations): (6" letters)
  - e. STEAM (2 locations): (4" letters)
  - f. TRAY RETURN: (4" letters)

## **2.08 ACCESSORIES**

- A. Concealed Screws: Stainless steel, galvanized steel, chrome plated, or other non-corroding metal.
- B. Tape Adhesive: Double sided tape, permanent adhesive.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that substrate surfaces are ready to receive work.

### **3.02 INSTALLATION**

- A. Install in accordance with manufacturer's instructions.
- B. Install neatly, with horizontal edges level.
- C. Locate signs and mount at heights indicated on drawings and in accordance with ADA Standards and ICC A117.1.
- D. Protect from damage until Date of Substantial Completion; repair or replace damaged items.

**END OF SECTION**

**SECTION 10 2113.17  
PHENOLIC TOILET COMPARTMENTS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Phenolic toilet compartments.
- B. Urinal and vestibule screens.

**1.02 RELATED REQUIREMENTS**

- A. Section 05 1200 - Structural Steel Framing: Concealed steel support members.
- B. Section 05 5000 - Metal Fabrications: Concealed steel support members.
- C. Section 06 1000 - Rough Carpentry: Blocking and supports.
- D. Section 10 2800 - Toilet, Bath, and Laundry Accessories.

**1.03 REFERENCE STANDARDS**

- A. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar 2015.

**1.04 ADMINISTRATIVE REQUIREMENTS**

- A. Coordination: Coordinate the work with placement of support framing and anchors in walls and ceilings.

**1.05 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on panel construction, hardware, and accessories.
- C. Shop Drawings: Indicate partition plan, elevation views, dimensions, details of wall supports, door swings.
- D. Samples: Submit two samples of partition panels, in size illustrating panel finish, color, and sheen.

**PART 2 PRODUCTS**

**2.01 MANUFACTURERS**

- A. Phenolic Toilet Compartments:
  - 1. ASI Global Partitions: [www.asi-globalpartitions.com/#sle](http://www.asi-globalpartitions.com/#sle).
  - 2. Substitutions: Section 01 6000 - Product Requirements.

**2.02 PHENOLIC TOILET COMPARTMENTS**

- A. Toilet Compartments: Factory fabricated doors, pilasters, and divider panels made of solid phenolic core panels with integral melamine finish, floor-mounted unbraced.
  - 1. Color: to be determined from manufacturer's full-line offering..
- B. Doors:
  - 1. Thickness: 3/4 inch.
  - 2. Width: 24 inch.
  - 3. Width for Handicapped Use: 36 inch, out-swinging.
  - 4. Height: 58 inch.
- C. Panels:
  - 1. Thickness: 1/2 inch.
  - 2. Height: 58 inch.
- D. Pilasters:
  - 1. Thickness: 3/4 inch.
  - 2. Width: As required to fit space; minimum 3 inch.
- E. Screens: Without doors; to match compartments; mounted to wall with two panel brackets with vertical support/bracing same as compartments.

### **2.03 ACCESSORIES**

- A. Pilaster Shoes: Formed ASTM A666 Type 304 stainless steel with No. 4 finish, 3 inch high, concealing floor fastenings.
- B. Attachments, Screws, and Bolts: Stainless steel , tamper proof type.
- C. Hardware: Polished stainless steel:
  - 1. Pivot hinges, gravity type, adjustable for door close positioning; two per door.
  - 2. Door Latch: Slide type with exterior emergency access feature.
  - 3. Door strike and keeper with rubber bumper; mounted on pilaster in alignment with door latch.
  - 4. Coat hook with rubber bumper; one per compartment, mounted on door.
  - 5. Provide door pull for outswinging doors.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that field measurements are as indicated.
- B. Verify correct spacing of and between plumbing fixtures.
- C. Verify correct location of built-in framing, anchorage, and bracing.

### **3.02 INSTALLATION**

- A. Install partitions secure, rigid, plumb, and level in accordance with manufacturer's instructions.
- B. Maintain 3/8 inch to 1/2 inch space between wall and panels and between wall and end pilasters.
- C. Attach panel brackets securely to walls using anchor devices.
- D. Attach panels and pilasters to brackets. Locate head rail joints at pilaster center lines.

### **3.03 TOLERANCES**

- A. Maximum Variation From True Position: 1/4 inch.
- B. Maximum Variation From Plumb: 1/8 inch.

### **3.04 ADJUSTING**

- A. Adjust and align hardware to uniform clearance at vertical edge of doors, not exceeding 3/16 inch.
- B. Adjust hinges to position doors in partial opening position when unlatched. Return out-swinging doors to closed position.

**END OF SECTION**

**SECTION 10 2123  
CUBICLE CURTAINS AND TRACK**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Surface mounted overhead curtain track and guides.
- B. Cubicle curtains.

**1.02 REFERENCE STANDARDS**

- A. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2021a.
- B. NFPA 701 - Standard Methods of Fire Tests for Flame Propagation of Textiles and Films 2019.

**1.03 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data for curtain fabric characteristics.
- C. Shop Drawings: Indicate a reflected ceiling plan view of curtain track, hangers and suspension points, attachment details, schedule of curtain sizes.
- D. Samples: Submit two fabric samples, in size illustrating fabric color.
- E. Maintenance Data: Include recommended cleaning methods and materials and stain removal methods.

**1.04 DELIVERY, STORAGE, AND HANDLING**

- A. Accept curtain materials on site and inspect for damage.
- B. Store curtain materials on site and deliver to Owner for installation when requested.

**PART 2 PRODUCTS**

**2.01 MANUFACTURERS**

- A. Cubicle Track and Curtains:
  - 1. Inpro: [www.inprocorp.com/#sle](http://www.inprocorp.com/#sle).
  - 2. Substitutions: See Section 01 6000 - Product Requirements.

**2.02 TRACKS AND TRACK COMPONENTS**

- A. Tracks: Extruded aluminum sections; one piece per track run.
  - 1. Profile: Channel.
  - 2. Mounting: Surface.
  - 3. Track End Stop: To fit track section.
  - 4. Finish on Exposed Surfaces: Clear anodized.
- B. Curtain Carriers: Nylon rollers, size and type compatible with track; designed to eliminate bind when curtain is pulled; fitted to curtain to prevent accidental curtain removal.
- C. Wand: Plastic, attached to lead carrier, for pull-to-close action.
- D. Installation Accessories: Types required for specified mounting method and substrate conditions.

**2.03 CURTAINS**

- A. Cubicle Curtains:
  - 1. Flame spread index of 25, maximum; smoke developed index of 450, maximum; when tested in accordance with ASTM E84.
  - 2. Inherently flame resistant or flameproofed; capable of passing NFPA 701 test.
  - 3. Material: Close weave polyester; anti-bacterial, self deodorizing, sanitized, and preshrunk.
  - 4. Color/Pattern: to be determined from manufacturer's full line of offerings in series listed..

5. Open Mesh Cloth: Open weave to permit air circulation; flameproof material, manufacturer's standard color.
6. Attachment of Curtain Fabric to Open Mesh Cloth: Manufacturer's standard sewn seam.
7. Products:

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

- A. Verify that surfaces and supports above ceiling are ready to receive work of this Section.
- B. Verify that field measurements are as indicated.

#### **3.02 INSTALLATION**

- A. Install curtain track to be secure, rigid, and true to ceiling line.
- B. Install curtains on carriers ensuring smooth operation.

**END OF SECTION**

**SECTION 10 2239  
FOLDING PANEL PARTITIONS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Top-supported continuously hinged operable partition.

**1.02 RELATED REQUIREMENTS**

- A. Section 06 1000 - Rough Carpentry: Wood blocking and track support shimming.
- B. Section 26 0533.13 - Conduit for Electrical Systems: Empty conduit from partition motor controller to disconnect and from motor controller to control buttons.
- C. Section 26 0583 - Wiring Connections: Electrical characteristics and wiring connections; control buttons .

**1.03 REFERENCE STANDARDS**

- A. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes 2021.
- B. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric) 2021.
- C. ASTM C1396/C1396M - Standard Specification for Gypsum Board 2017.
- D. ASTM E90 - Standard Test Method for Laboratory Measurement of Airborne Sound Transmission Loss of Building Partitions and Elements 2009 (Reapproved 2016).
- E. ASTM E413 - Classification for Rating Sound Insulation 2016.
- F. ASTM E557 - Standard Guide for Architectural Design and Installation Practices for Sound Isolation between Spaces Separated by Operable Partitions 2012 (Reapproved 2020).
- G. ASTM F793/F793M - Standard Classification of Wall Coverings by Use Characteristics 2020.

**1.04 ADMINISTRATIVE REQUIREMENTS**

- A. Preinstallation Meeting: Convene at project site seven calendar days prior to scheduled beginning of construction activities of this section to review section requirements.
  - 1. Require attendance by representatives of installer.

**1.05 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data on partition materials, operation, hardware and accessories, electric operating components, track switching components, and colors and finishes available.
- C. Shop Drawings: Indicate opening sizes, track layout, details of track and required supports, static and dynamic loads, location and details of pass door and frame, adjacent construction and finish trim, and stacking depth.

**1.06 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified this section with minimum five years of documented experience.
- B. Installer Qualifications: Company specializing in performing work of the type specified and with at least five years of documented experience.

**1.07 DELIVERY, STORAGE, AND HANDLING**

- A. Store products in manufacturer's unopened packaging until installation.

**1.08 WARRANTY**

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.
- B. Correct defective Work within five year period after Date of Substantial Completion.

- C. Provide two year manufacturer warranty against defects in material and workmanship, excluding abuse.

## **PART 2 PRODUCTS**

### **2.01 MANUFACTURERS**

- A. Electrically Operated, continuously hinged operable partitions:
  - 1. Hufcor, Inc; Series 643E: [www.hufcor.com/#sle](http://www.hufcor.com/#sle).
  - 2. Substitutions: See Section 01 6000 - Product Requirements.

### **2.02 MATERIALS**

- A. Folding Panel Partitions: Side opening; continuous hinged panels; side stacking; motor operated.
- B. Panel Construction:
  - 1. Frame: 16 gauge, 0.0598 inch thick formed sheet steel frame top, bottom, jambs, and intermediates; welded construction, with acoustical insulation fill.
  - 2. Substrate: Medium-density fiberboard.
  - 3. Panel Substrate Facing: Steel sheet, manufacturer's standard thickness.
  - 4. Hinges: Continuous piano typ, stainless steel.
  - 5. Panel Properties:
    - a. Thickness With Finish: 4 inches.
    - b. Width: Up to 48 inches (1219 mm).
    - c. Weight: 9.5 lb/sq ft.
- C. Panel Finishes:
  - 1. Facing: Vinyl coated fabric.
  - 2. Exposed Metal Trim: Custom powder coated paint finish.
- D. Panel Seals:
  - 1. Panel to Panel Seals: Grooved and gasketed astragals, with continuous flexible ribbed vinyl seal fitted to panel edge construction; color to match panel finish.
  - 2. Acoustic Seals: Flexible acoustic seals at jambs, meeting mullions, ceilings, retractable floor and ceiling seals, and above track to structure acoustic seal.
- E. Suspension System:
  - 1. Track: Formed steel; 1-1/4 by 1-1/4 inch size; thickness and profile designed to support loads, steel sub-channel and track connectors, and track switches.
  - 2. Carriers: Nylon wheels on trolley carrier at top of every second panel, sized to carry imposed loads, with threaded pendant bolt for vertical adjustment.
- F. Performance:
  - 1. Acoustic Performance:
    - a. Sound Transmission Class (STC): 48 to 52 calculated in accordance with ASTM E413, based on tests conducted in accordance with ASTM E90, on panel size of 100 sq ft.
  - 2. Installed partition system track capable of supporting imposed loads, with maximum deflection of 1/360 of span.
- G. Operation:
  - 1. Electric Operator: 12 inches per second traveling speed; adjustable friction clutch brake actuated by solenoid controlled motor starter; enclosed limit switch; enclosed magnetic reversing starter.
  - 2. Control Station: Two standard keyed, three button constant pressure type; 24 volt circuit; surface mounted. Control stations to be mounted on opposite sides and ends of the partition and require human contact to be activated ensuring supervised operation of the partition.
    - a. Key switch prepared for mortise lock cylinder.
    - b. Key switches alike.
  - 3. Safety Features:



- a. Limit Switches: Automatic type, at both extremes of travel, to prevent over-travel.
  - b. Emergency Release: Mechanism to disengage motor drive system and permit manual operation.
  - c. Pocket Door Interlock: Mechanism to prevent operation of panels unless storage pocket doors are fully open.
- 4. Electrical Requirements:
  - a. 200-240 volts, single phase, 60 Hz.
  - b. Conduit and Outlet Boxes: Surface type in accordance with Section 26 0533.13.
- H. Accessories:
  - 1. Ceiling Closure: White enameled ceiling closure; aluminum jamb and head molding, fittings and attachments, and intermediate meeting posts.

## **2.03 MATERIALS**

- A. Aluminum Extrusions: ASTM B221 (ASTM B221M), 6063 alloy, T6 temper.
- B. Standard Gypsum Board: ASTM C1396/C1396M, 3/8 inch thick, maximum permissible length; ends square cut, square edges.
- C. Vinyl Coated Fabric: ASTM F793 Category VI, polyvinyl fluoride (PVC) finish for washability and improved flame retardance; color as selected by Architect from manufacturer's standard range.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that field measurements are as indicated.
- B. Verify that required utilities are available, of the correct characteristics, in proper location, and ready for use.
- C. Verify track supports are laterally braced and will permit track to be level within 1/4 inch of required position and parallel to the floor surface.

### **3.02 INSTALLATION**

- A. Install partition in accordance with manufacturer's instructions and ASTM E557.
- B. Install electric operator, wiring, and controls. Locate control station(s) on opposite sides and ends.
- C. Install acoustic sealant to achieve required acoustic performance.
- D. Coordinate electrical connections.

### **3.03 ADJUSTING**

- A. Adjust partition assembly to provide smooth operation from stacked to full open position. Do not over-compress acoustic seals.
- B. Visually inspect partition in full extended position for light leaks to identify a potential acoustical leak.
- C. Adjust partition assembly to achieve lightproof seal.

### **3.04 CLEANING**

- A. Clean finish surfaces and partition accessories.

### **3.05 CLOSEOUT ACTIVITIES**

- A. Demonstrate operation of partition and identify potential operational problems.

**END OF SECTION**

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**SECTION 10 2600  
WALL AND DOOR PROTECTION**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Corner guards.

**1.02 RELATED REQUIREMENTS**

- A. Section 09 2116 - Gypsum Board Assemblies: Placement of supports in stud wall construction.

**1.03 REFERENCE STANDARDS**

- A. ASTM D256 - Standard Test Methods for Determining the Izod Pendulum Impact Resistance of Plastics 2010 (Reapproved 2018).
- B. ASTM F476 - Standard Test Methods for Security of Swinging Door Assemblies 2014.

**1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Include plans, elevation, sections, and attachment details. Show design and spacing of supports for protective corridor handrails, required to withstand structural loads.
- C. Samples: Submit samples illustrating component design, configurations, joinery, color and finish.
- D. Warranty Documentation: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

**1.05 DELIVERY, STORAGE, AND HANDLING**

**1.06 WARRANTY**

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.
- B. Correct defective Work within a one year period after Date of Substantial Completion.
- C. Provide five year manufacturer and installer warranty for metal crash rails.
  - 1. Failures include, but are not limited to, the following:
    - a. Deterioration of materials beyond that expected of normal use, as intended by manufacturer.

**PART 2 PRODUCTS**

**2.01 MANUFACTURERS**

- A. Corner Guards:
  - 1. Inpro: [www.inprocorp.com/#sle](http://www.inprocorp.com/#sle).
  - 2. Substitutions: See Section 01 6000 - Product Requirements.

**2.02 PERFORMANCE CRITERIA**

- A. Impact Strength: Unless otherwise noted, provide protection products and assemblies that have been successfully tested for compliance with applicable provisions of ASTM D256 and/or ASTM F476.

**2.03 PRODUCT TYPES**

- A. Corner Guards - Flush Mounted:
  - 1. Material: Type 304 stainless steel, No. 4 finish.
  - 2. Type CG-A: Width of Wings: 2 inches; Type CG-B: Width of Wings: 3 inches.
  - 3. Corner: Square.
  - 4. Color: As selected from manufacturer's standard colors.
  - 5. Length: One piece.

**2.04 FABRICATION**

- A. Fabricate components with tight joints, corners and seams.

## **2.05 SOURCE QUALITY CONTROL**

- A. See Section 01 4000 - Quality Requirements, for additional requirements.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that rough openings, concealed blocking, and anchors are correctly sized and located.
- B. Verify that substrate surfaces for adhered items are clean and smooth.
  - 1. Test painted or wall covering surfaces for adhesion in inconspicuous area, as recommended by manufacturer. Follow adhesive manufacturer's recommendations for remedial measures at locations and/or application conditions where adhesion test's results are unsatisfactory.
- C. Start of installation constitutes acceptance of project conditions.

### **3.02 INSTALLATION**

- A. Install components in accordance with manufacturer's instructions, level and plumb, secured rigidly in position to supporting construction.
- B. Position corner guard 5 inches above finished floor.

### **3.03 TOLERANCES**

- A. Maximum Variation From Required Height: 1/4 inch.
- B. Maximum Variation From Level or Plane For Visible Length: 1/4 inch.

### **3.04 CLEANING**

- A. Clean wall and door protection items of excess adhesive, dust, dirt, and other contaminants.

**END OF SECTION**

**SECTION 10 2800  
TOILET, BATH, AND LAUNDRY ACCESSORIES**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Commercial toilet accessories.
- B. Commercial shower and bath accessories.
- C. Diaper changing stations.
- D. Utility room accessories.

**1.02 RELATED REQUIREMENTS**

- A. Section 09 3000 - Tiling: Ceramic washroom accessories.

**1.03 REFERENCE STANDARDS**

- A. ADA Standards - Americans with Disabilities Act (ADA) Standards for Accessible Design 2010.
- B. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process 2020.
- C. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar 2015.
- D. ASTM C1036 - Standard Specification for Flat Glass 2021.
- E. ASTM C1048 - Standard Specification for Heat-Strengthened and Fully Tempered Flat Glass 2018.
- F. ASTM C1503 - Standard Specification for Silvered Flat Glass Mirror 2018.
- G. ASTM F2285 - Standard Consumer Safety Performance Specification for Diaper Changing Tables for Commercial Use 2004, with Editorial Revision (2016).

**1.04 ADMINISTRATIVE REQUIREMENTS**

- A. Coordinate the work with the placement of internal wall reinforcement, concealed ceiling supports, and reinforcement of toilet partitions to receive anchor attachments.

**1.05 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Submit data on accessories describing size, finish, details of function, and attachment methods.
- C. Manufacturer's Installation Instructions: Indicate special procedures and conditions requiring special attention.

**PART 2 PRODUCTS**

**2.01 MANUFACTURERS**

- A. Commercial Toilet, Shower, and Bath Accessories:
  - 1. Bradley Corporation: [www.bradleycorp.com/#sle](http://www.bradleycorp.com/#sle).
  - 2. Substitutions: Section 01 6000 - Product Requirements.
- B. Diaper Changing Stations:
  - 1. Koala Kare Products: [www.koalabear.com/#sle](http://www.koalabear.com/#sle).
  - 2. Substitutions: 01 6000 - Product Requirements.

**2.02 MATERIALS**

- A. Accessories - General: Shop assembled, free of dents and scratches and packaged complete with anchors and fittings, steel anchor plates, adapters, and anchor components for installation.
  - 1. Grind welded joints smooth.
  - 2. Fabricate units made of metal sheet of seamless sheets with flat surfaces.

- B. Keys: Provide 5 keys for each accessory to Owner; master key lockable accessories.
- C. Stainless Steel Sheet: ASTM A666, Type 304.
- D. Galvanized Sheet Steel: Hot-dipped galvanized steel sheet, ASTM A653/A653M, with G90/Z275 coating.
- E. Mirror Glass: Annealed float glass, ASTM C1036 Type I, Class 1, Quality Q2, with silvering, protective and physical characteristics complying with ASTM C1503.
- F. Mirror Glass: Tempered safety glass, ASTM C1048; and ASTM C1036 Type I, Class 1, Quality Q2, with silvering as required.
- G. Adhesive: Two component epoxy type, waterproof.
- H. Fasteners, Screws, and Bolts: Hot dip galvanized; tamper-proof; security type.
- I. Expansion Shields: Fiber, lead, or rubber as recommended by accessory manufacturer for component and substrate.

## **2.03 FINISHES**

- A. Stainless Steel: Satin finish, unless otherwise noted.

## **2.04 COMMERCIAL TOILET ACCESSORIES**

- A. Toilet Paper Dispenser: Single roll, surface mounted bracket type, stainless steel, spindleless type for tension spring delivery designed to prevent theft of tissue roll. ADA Compliant.
- B. Mirrors: Stainless steel framed, 1/4 inch thick annealed float glass; ASTM C1036.
  - 1. Annealed Float Glass: Silvering, protective and physical characteristics in compliance with ASTM C1503.
  - 2. Size: as noted on construction documents.
  - 3. Frame: 0.05 inch angle shapes, with mitered and welded and ground corners, and tamperproof hanging system; satin finish.
  - 4. Backing: Full-mirror sized, minimum 0.03 inch galvanized steel sheet and nonabsorptive filler material.
  - 5. Fixed Tilt Mirrors: Minimum 3 inches tilt from top to bottom.
  - 6. Products:
    - a. AJW Architectural Products: [www.ajw.com/#sle](http://www.ajw.com/#sle).
    - b. Substitutions: Section 01 6000 - Product Requirements.
- C. Grab Bars: Stainless steel, smooth surface.
  - 1. Standard Duty Grab Bars:
    - a. Push/Pull Point Load: 250 pound-force, minimum.
    - b. Dimensions: 1-1/4 inch outside diameter, minimum 0.05 inch wall thickness, exposed flange mounting, 1-1/2 inch clearance between wall and inside of grab bar.
    - c. Length and Configuration: As indicated on drawings.
    - d. Products:
      - 1) AJW Architectural Products: [www.ajw.com/#sle](http://www.ajw.com/#sle).
      - 2) Substitutions: Section 01 6000 - Product Requirements.
- D. Combination Sanitary Napkin/Tampon Dispenser: Stainless steel, surface-mounted.
  - 1. Door: Seamless 0.05 inch door with returned edges and tumbler lock.
  - 2. Cabinet: Fully welded, 0.03 inch thick sheet.
  - 3. Operation: No charge; no coin slots.
  - 4. Identify dispensers slots without using brand names.
  - 5. Minimum capacity: 15 napkins and 20 tampons.
  - 6. Products:
    - a. AJW Architectural Products: [www.ajw.com/#sle](http://www.ajw.com/#sle).
    - b. Substitutions: Section 01 6000 - Product Requirements.

## **2.05 COMMERCIAL SHOWER AND BATH ACCESSORIES**

- A. Shower Curtain Rod: Stainless steel tube, 1 inch outside diameter, 0.04 inch wall thickness, satin-finished, with 3 inch outside diameter, minimum 0.04 inch thick satin-finished stainless steel flanges, for installation with exposed fasteners.
- B. Shower Curtain:
  - 1. Material: Cotton, machine washable, and mildew-resistant.
  - 2. Size: 36 by 72 inches, hemmed edges.
  - 3. Grommets: Stainless steel; pierced through top hem on 6 inch centers.
  - 4. Color: White.
  - 5. Shower Curtain Hooks: Chrome-plated or stainless steel spring wire designed for snap closure.
- C. Folding Shower Seat: Wall-mounted surface; welded tubular seat frame, structural support members, swing-down legs, hinges, and mechanical fasteners of Type 304 stainless steel, L-shaped, right hand seat.
  - 1. Seat: Phenolic or polymeric composite one-piece seat or seat slats.
  - 2. Size: ADA Standards compliant.
  - 3. Products:
    - a. Seachrome Corporation; Accessibility Seats- L-Shaped Transfer with Swing-down Legs, Reversible: [www.seachrome.com/#sle](http://www.seachrome.com/#sle).
    - b. Substitutions: Section 01 6000 - Product Requirements.
- D. Wall-Mounted Soap Dish: Heavy duty, seamless stainless steel, surface-mounted with drain holes, without grab bar, satin finish; with concealed mechanical fastening suitable for substrate and backplate.
- E. Towel Bar: Stainless steel, 3/4 inch square tubular bar; rectangular brackets, concealed attachment, satin finish.
- F. Robe Hook: Heavy-duty stainless steel, single-prong, rectangular-shaped bracket and backplate for concealed attachment, satin finish.

## **2.06 DIAPER CHANGING STATIONS**

- A. Diaper Changing Station: Wall-mounted folding diaper changing station for use in commercial toilet facilities, meeting or exceeding ASTM F2285.
  - 1. Material: Polyethylene.
  - 2. Mounting: Surface.
  - 3. Color: As selected.
  - 4. Minimum Rated Load: 250 pounds.

## **2.07 UTILITY ROOM ACCESSORIES**

- A. Combination Utility Shelf/Mop and Broom Holder: 0.05 inch thick stainless steel, Type 304, with 1/2 inch returned edges, 0.06 inch steel wall brackets.
  - 1. Drying rod: Stainless steel, 1/4 inch diameter.
  - 2. Hooks: Two, 0.06 inch stainless steel rag hooks at shelf front.
  - 3. Mop/broom holders: Three spring-loaded rubber cam holders at shelf front.
  - 4. Length: 36 inches.
  - 5. Length: Manufacturer's standard length for number of holders/hooks.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify existing conditions before starting work.
- B. Verify exact location of accessories for installation.
- C. Verify that field measurements are as indicated on drawings.

### **3.02 PREPARATION**

- A. Deliver inserts and rough-in frames to site for timely installation.
- B. Provide templates and rough-in measurements as required.

### **3.03 INSTALLATION**

- A. Install accessories in accordance with manufacturers' instructions in locations indicated on drawings.
- B. Install plumb and level, securely and rigidly anchored to substrate.
- C. Mounting Heights: As required by accessibility regulations, unless otherwise indicated.
  - 1. Grab Bars: As indicated on drawings.
  - 2. Other Accessories: As indicated on drawings.

### **3.04 PROTECTION**

- A. Protect installed accessories from damage due to subsequent construction operations.

**END OF SECTION**



**SECTION 10 4400  
FIRE PROTECTION SPECIALTIES**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Fire extinguishers.
- B. Fire extinguisher cabinets.
- C. Accessories.

**1.02 RELATED REQUIREMENTS**

- A. Section 06 1000 - Rough Carpentry: Wood blocking product and execution requirements.

**1.03 REFERENCE STANDARDS**

- A. ASTM E814 - Standard Test Method for Fire Tests of Penetration Firestop Systems 2013a (Reapproved 2017).
- B. FM (AG) - FM Approval Guide current edition.
- C. NFPA 10 - Standard for Portable Fire Extinguishers 2022.
- D. UL (DIR) - Online Certifications Directory Current Edition.

**1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide extinguisher operational features.
- C. Manufacturer's Installation Instructions: Indicate special criteria and wall opening coordination requirements.
- D. Product Schedule: For Fire Cabinets indicate whether recessed, semi-recessed, or surface mounted. Indicate hourly fire-ratings. Coordinate final fire-protection cabinet schedule with fire-extinguishers to ensure proper fit and function. Discrepancies should be discussed with the Architect.

**1.05 FIELD CONDITIONS**

- A. Do not install extinguishers when ambient temperature may cause freezing of extinguisher ingredients.

**PART 2 PRODUCTS**

**2.01 MANUFACTURERS**

- A. Fire Extinguishers:
  - 1. Ansul, a Tyco Business: [www.ansul.com/#sle](http://www.ansul.com/#sle).
  - 2. Kidde, a unit of United Technologies Corp: [www.kidde.com/#sle](http://www.kidde.com/#sle).
  - 3. Pyro-Chem, a Tyco Business: [www.pyrochem.com/#sle](http://www.pyrochem.com/#sle).
  - 4. Substitutions: See Section 01 6000 - Product Requirements.
- B. Fire Extinguisher Cabinets and Accessories:
  - 1. Activar Construction Products Group, Inc. - JL Industries; Ambassador Series: [www.activarcpg.com/#sle](http://www.activarcpg.com/#sle).
  - 2. Kidde, a unit of United Technologies Corp; [ ]: [www.kidde.com/#sle](http://www.kidde.com/#sle).
  - 3. Larsen's Manufacturing Co: [www.larsensmfg.com/#sle](http://www.larsensmfg.com/#sle).
  - 4. Substitutions: See Section 01 6000 - Product Requirements.

**2.02 FIRE EXTINGUISHERS**

- A. Fire Extinguishers - General: Comply with product requirements of NFPA 10 and applicable codes, whichever is more stringent.
  - 1. Provide extinguishers labeled by UL (DIR) or FM (AG) for purpose specified and as indicated.
- B. Multipurpose Dry Chemical Type Fire Extinguishers: Carbon steel tank, with pressure gauge.

1. Stored Pressure Operated: Deep Drawn.
2. Class: A:B:C type.
3. Size: 2.5 pound.
4. Finish: Baked polyester powder coat, [ ] color.
5. Temperature range: Minus 40 degrees F to [ ] degrees F.

### **2.03 FIRE EXTINGUISHER CABINETS**

- A. Fire Rating: Listed and labeled in accordance with ASTM E814 requirements for fire resistance rating of walls where being installed.
- B. Fire Rated Cabinet Construction:
  1. Steel; double wall or outer and inner boxes with 5/8 inch thick fire barrier material.
- C. Cabinet Configuration: Recessed type.
  1. Size to accommodate accessories.
  2. Trim: Flat square edge, with 1 1/2 inch wide face.
- D. Door: 0.036 inch metal thickness, reinforced for flatness and rigidity with nylon catch. Hinge doors for 180 degree opening with two butt hinges.
- E. Door Glazing: Heat strengthened glass, clear, 1/4 inch thick, and set in resilient channel glazing gasket.
- F. Cabinet Mounting Hardware: Appropriate to cabinet, with pre-drilled holes for placement of anchors.
- G. Fabrication: Weld, fill, and grind components smooth.
- H. Finish of Cabinet Exterior Trim and Door: Red baked enamel.
- I. Finish of Cabinet Interior: White colored enamel.

### **2.04 ACCESSORIES**

- A. Extinguisher Brackets: Formed steel, chrome-plated.
- B. Lettering: FIRE EXTINGUISHER decal, or vinyl self-adhering, pre-spaced black lettering in accordance with authorities having jurisdiction (AHJ).

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify existing conditions before starting work.
- B. Verify rough openings for cabinet are correctly sized and located.

### **3.02 INSTALLATION**

- A. Install in accordance with manufacturer's instructions.
- B. Install cabinets plumb and level in wall openings, [ ] inches from finished floor to inside bottom of cabinet.

### **3.03 MAINTENANCE**

- A. See Section 01 7000 - Execution and Closeout Requirements, for additional requirements relating to maintenance service.
- B. Provide a separate maintenance contract for specified maintenance service.

### **END OF SECTION**

## **SECTION 10 5113 METAL LOCKERS**

### **PART 1 GENERAL**

#### **1.01 SECTION INCLUDES**

- A. Metal lockers.

#### **1.02 RELATED REQUIREMENTS**

- A. Section 06 1000 - Rough Carpentry: Metal stud base construction.
- B. Section 06 2000 - Finish Carpentry: Bench tops for locker bench support brackets.

#### **1.03 REFERENCE STANDARDS**

- A. ADA Standards - Americans with Disabilities Act (ADA) Standards for Accessible Design 2010.
- B. ASTM A240/A240M - Standard Specification for Chromium and Chromium-Nickel Stainless Steel Plate, Sheet, and Strip for Pressure Vessels and for General Applications 2020a.
- C. ASTM A1008/A1008M - Standard Specification for Steel, Sheet, Cold-Rolled, Carbon, Structural, High-Strength Low-Alloy, High-Strength Low-Alloy with Improved Formability, Required Hardness, Solution Hardened, and Bake Hardenable 2021a.
- D. ICC A117.1 - Accessible and Usable Buildings and Facilities 2017.

#### **1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Manufacturer's published data on locker construction, sizes, and accessories.
- C. Shop Drawings: Indicate locker plan layout, numbering plan and combination lock code.

#### **1.05 DELIVERY, STORAGE, AND HANDLING**

- A. Protect locker finish and adjacent surfaces from damage.

### **PART 2 PRODUCTS**

#### **2.01 MANUFACTURERS**

- A. Metal Lockers:
  - 1. ASI Storage Solutions: [www.asi-storage.com/#sle](http://www.asi-storage.com/#sle).
  - 2. List Industries, Inc: [www.listindustries.com/#sle](http://www.listindustries.com/#sle).
  - 3. Penco Products, Inc: [www.pencoproducts.com/#sle](http://www.pencoproducts.com/#sle).
  - 4. Substitutions: See Section 01 6000 - Product Requirements.

#### **2.02 LOCKER APPLICATIONS**

- A. Student Lockers: (Type A) Metal lockers, wall mounted for base indicated on drawings.
  - 1. Width: 15 inches.
  - 2. Depth: 18 inches.
  - 3. Height: 72 inches.
  - 4. Configuration: Two tier.
  - 5. Fittings: Size and configuration as indicated on drawings.
    - a. Hat shelf.
    - b. Hooks: One single prong.
  - 6. Ventilation: Louvers at top and bottom of door panel.
  - 7. Locking: Padlock hasps, for padlocks provided by Owner.
    - a. Locking Action: Positive, automatic type, whereby locker may be locked when open, then closed without unlocking.
  - 8. Provide sloped top.
  - 9. Color: To be selected from manufacturer's full range by Architect.
- B. Athletic Lockers: (Type B) Metal lockers, wall mounted for base indicated on drawings.
  - 1. Width: 15 inch.
  - 2. Depth: 12 inches.

3. Height: 72 inches.
  4. Configuration: Two tier.
  5. Fittings: Size and configuration as indicated on drawings.
    - a. Upper shelf.
    - b. Hooks: One single prong.
  6. Ventilation: Perforated side panels and doors.
  7. Locking: Built-in combination locks.
    - a. Locking Action: Positive, automatic type, whereby locker may be locked when open, then closed without unlocking.
  8. Provide sloped top.
  9. Color: To be selected from manufacturer's full range by Architect.
- C. Employee Lockers: (TypeC) Metal lockers, free-standing with matching closed base. (Receiving Rm.111G).
1. Width: 15 inches.
  2. Depth: 12 inches.
  3. Height: 72" inches.
  4. Configuration: two tier.
  5. Fittings: Size and configuration as indicated on drawings.
    - a. Upper shelf
    - b. Hooks: one single prong.
  6. Ventilation: Manufacturer's standard louvers in door panel.
  7. Locking: Padlock hasps, for padlocks provided by Owner.
  8. Provide sloped top.
  9. Color: To be selected from manufacturer's full range by Architect.

### 2.03 METAL LOCKERS

- A. Accessibility: Design units indicated on drawings as 'accessible' to comply with ICC A117.1 and ADA Standards.
- B. Locker Case Construction:
  1. Heavy-Duty, Welded Construction: Made of formed and welded together sheet steel; metal edges finished smooth without burrs; baked enamel or powder coat finished inside and out.
    - a. Assembly: Do not use bolts, screws, or rivets to assemble locker bodies.
    - b. Locker Body Components: Formed and flanged from steel sheet of the following type and minimum thicknesses:
      - 1) Unperforated Steel Sheet: Commercial Steel (CS), Type B, supplied for exposed applications and complying with ASTM A1008/A1008M and the following:
        - 2) Body and Shelves: 16 gauge, 0.0598 inch.
        - 3) Backs: 18 gauge, 0.0478 inch.
        - 4) Base: 18 gauge, 0.0478 inch.
          - (a) Height: 4 inches.
      - c. Frames: Formed channel shape, welded and ground flush, welded to body, resilient gaskets and latching for quiet operation.
        - 1) Door Frame: 16 gauge, 0.0598 inch, minimum.
- C. Latches and Door Handles: Manufacturer's standard.
  1. Latching Components: 300 Series Stainless Steel (ASTM A240/A240M).
  2. Latching: Manufacturer's standard for locking arrangement selected.
    - a. Three-Point Lift Handle Gravity Latch: Pocket-mounted, provide for doors 18 inches or taller.
    - b. Access Control Single-Point Latch: Provide for doors indicated.
- D. Sloped Top: 20 gauge, 0.0359 inch, with closed ends.
- E. Coat Hooks: Stainless steel or zinc-plated steel.

- F. Locks: Locker manufacturer's standard type indicated in Applications article above.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that prepared bases are in correct position and configuration.
- B. Verify bases and embedded anchors are properly sized.

### **3.02 INSTALLATION**

- A. Install in accordance with manufacturer's instructions.
- B. Place and secure on prepared base.
- C. Install lockers plumb and square.
- D. Install fittings if not factory installed.
- E. Replace components that do not operate smoothly.

### **3.03 CLEANING**

- A. Clean locker interiors and exterior surfaces.

**END OF SECTION**

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## **SECTION 10 7500 FLAGPOLES**

### **PART 1 GENERAL**

#### **1.01 SECTION INCLUDES**

- A. Aluminum Flagpoles.

#### **1.02 RELATED REQUIREMENTS**

- A. Section 03 3000 - Cast-in-Place Concrete: Concrete base and foundation construction.

#### **1.03 REFERENCE STANDARDS**

- A. AASHTO M 36 - Standard Specification for Corrugated Steel Pipe, Metallic-Coated, for Sewers and Drains 2016 (Reapproved 2020).
- B. ASTM B241/B241M - Standard Specification for Aluminum and Aluminum-Alloy Seamless Pipe and Seamless Extruded Tube 2016.
- C. NAAMM FP 1001 - Guide Specifications for Design Loads of Metal Flagpoles 2007.

#### **1.04 SUBMITTALS**

- A. See Section 01 3300 - Submittal Procedures.
- B. Product Data: Provide data on pole, accessories, and configurations.
- C. Operation Data: Provide operating data for the controller.

### **PART 2 PRODUCTS**

#### **2.01 MANUFACTURERS**

- A. Flagpoles:
  - 1. American Flagpole (Basis of Design): Model ESR 40082 [www.americanflagpole.com/#sle](http://www.americanflagpole.com/#sle).
  - 2. Concord Industries, Inc.: [www.concordindustries.com/#sle](http://www.concordindustries.com/#sle).
  - 3. Pole-Tech Co, Inc.: [www.poletech.com/#sle](http://www.poletech.com/#sle).
  - 4. Substitutions: See Section 01 6000 - Product Requirements.

#### **2.02 FLAGPOLES**

- A. Flagpoles: Designed in accordance with NAAMM FP 1001:
  - 1. Material: Aluminum.
  - 2. Design: Cone tapered.
  - 3. Mounting: Ground mounted type.
  - 4. Nominal Height: 40 ft; measured from nominal ground elevation.
  - 5. Halyard: Interior type.

#### **2.03 POLE MATERIALS**

#### **2.04 ACCESSORIES**

- A. Finial Ball: Stainless steel, 6 inch diameter.
- B. Truck Assembly: Cast aluminum; revolving, stainless steel ball bearings, non-fouling.
- C. Flag: Continental Series design, 8 ft by 12 ft size, nylon fabric, brass grommets, hemmed edges.
- D. Cleats: 9 inch size, aluminum with galvanized steel fastenings, two per halyard.
- E. Cleat Box: Aluminum, with built-in hinge and hasp assembly, attached to pole with tamper proof screws inside box.
- F. Halyard: 5/16 inch diameter stainless steel aircraft cable.
- G. Collar: 1/4 inch thick; HD Type; 1 piece.
- H. Butt Diameter: 8 inches.

#### **2.05 OPERATORS**

- A. Hand Crank: Removable hardware type.

## **2.06 MOUNTING COMPONENTS**

- A. Foundation Tube Sleeve: AASHTO M 36, corrugated 16 gage, 0.0598 inch steel, galvanized, depth of 48 inches as indicated.
- B. Lighting Ground Rod: 8 inch long copper rod, 3/4 inch diameter.
- C. Pole Sections: 2.
- D. Ground Set Concrete: 3,000 psi, 4'-6" deep, 45" top diameter, 36" bottom diameter.

## **2.07 FINISHING**

- A. Aluminum: Satin finish.

## **PART 3 EXECUTION**

### **3.01 INSTALLATION**

- A. Install flagpole, base assembly, and fittings in accordance with manufacturer's instructions.
- B. Install foundation plate and centering wedges for flagpoles base set in concrete base and fasten.

### **3.02 TOLERANCES**

- A. Maximum Variation From Plumb: 1 inch.

### **3.03 ADJUSTING**

- A. Adjust operating devices so that halyard and flag function smoothly.

### **3.04 SCHEDULES**

- A. Front Yard Pole: One pole, 40 feet with U.S. flag.

**END OF SECTION**



**SECTION 11 4000  
FOODSERVICE EQUIPMENT**

**PART 1 GENERAL**

**1.01 RELATED DOCUMENTS**

- A. Drawings and general provisions of the contract, including General and Supplementary Conditions and Division 01 Specifications Sections, apply to this Section.

**1.02 SUMMARY**

- A. Supply, deliver and set in place all food service equipment at identified locations, and level before and after final connections by others.

**1.03 DEFINITIONS**

- A. Products: Items obtained for incorporating into the Work, whether purchased for Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
  - 1. Named Products: Items identified by manufacturer's product name, including make or model number or other designation shown or listed in manufacturer's published product literature, which is current as of date of the Contract Documents.
  - 2. New Products: Items that have not previously been incorporated into another project or facility. Products salvaged or recycled from other projects are not considered new products.
  - 3. Comparable Product: Product that is demonstrated and approved through submittal process to have the indicated qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics that equal or exceed those of specified product.
- B. Basis-of-Design Product Specification: A specification in which a specific manufacturer's product is named and accompanied by the words "basis-of-design product," including make or model number or other designation, to establish the significant qualities related to type, function, dimension, in-service performance, physical properties, appearance, and other characteristics for purposes of evaluating comparable products of additional manufacturers named in the specification.
- C. Substitutions: Changes in products, materials, equipment, and methods of construction from those required by Contract Documents. Substitutions require approval by Architect for use or implementation.
  - 1. Substitutions provisions are handled under Division 01 Section.

**1.04 REFERENCES**

- A. All Food Service Equipment provided and installed must comply with below agencies, state department of health and county or local laws and ordinance.
- B. American Society for Testing Materials (ASTM):
  - 1. ASTM A167, Specification for Stainless and Heat-Resisting Chromium-Nickel Steel Plate, Sheet and Strip.
  - 2. ASTM A446, Specification for Steel Sheet, Zinc-Coated (Galvanized) by the Hot-Dip Process, Structural (Physical) Quality.
  - 3. ASTM C1036, Specification for Flat Glass.
  - 4. ASTM C1048, Specification for Heat Treated Flat Glass-Kind HS, Kind FT Coated and Uncoated Glass.
- C. American Welding Society (AWS).
- D. National Electrical Manufacturers Association (NEMA).
- E. National Fire Protection Association (NFPA 96).
- F. National Sanitation Foundation (NSF).
- G. Underwriters Laboratories Listing (UL).

## 1.05 SUBMITTALS

- A. Within sixty (60) days after award of contract (before equipment is purchased) the following shall be submitted in accordance with Section 013300 SUBMITAL PROCEDURES.
  - 1. The submittal package will include the following: Product data book (cut sheet book) this product data book should account for all item numbers in this contract up to and including spare numbers and existing equipment. Product data cut sheets shall be marked up in a way that indicates model and accessories included with the item.
  - 2. Submittal drawings will consist of the following: Custom shop drawings (hoods, walk-ins, millwork, serving lines custom fabrication, etc.) Equipment layout drawings, Plumbing connection drawings, electrical connection drawings, HVAC layout drawings and Special condition drawings (Wall backing, floor depressions, etc.)
  - 3. Submittal package shall be at least 98% complete at submission unless pre-approved by architect and CKC.
- B. Electronically submit (PDFs) assembly drawings, electrical and mechanical rough-in connection plans, details for plumbing, electrical, air conditioning and ventilation services for all kitchen equipment and brochures, catalog cut-sheets, specifications and operating characteristics for buy-out equipment. Clearly indicate any deviations from contract Documents, such as arrangement of piping, connections, wiring method of fabrication, manner of structural conditions, standard shop practices, or other reasons, and note in Cover Sheet accompanying submittals.
- C. Drawing of fabricated equipment shall not be less than  $\frac{3}{4}$ " equal one-foot scale.
- D. Rough-in drawings shall not be less than  $\frac{1}{4}$ " equal one-foot scale.
- E. Product Data: Provide data on appliances; indicate configuration, sizes, materials, finishes, locations, utility connections and locations.
- F. Samples: Submit samples of stainless steel and other finish materials for color selection.
- G. Manufacturer's Installation Instructions: Indicate special procedures and perimeter conditions requiring special attention.
- H. Manufacturer's Certificate: Certify that exhaust system and tests meet or exceed specified requirements.

## 1.06 CLOSEOUT SUBMITTALS

- A. Within thirty (30) days after completion of contract the following shall be submitted.
  - 1. Operation and Maintenance Data:
    - a. Operation Data: Provide manuals with a sequence of operation and utility connection diagram explaining system operation and corresponding to actual devices. After approval, submit 2 sets of three ring binders and an electronic copy.
    - b. Maintenance Data: Provide lubrication and periodic maintenance requirement schedules.
    - c. Within this manual Provide serial numbers on all equipment including walk in boxes and refrigeration when manual covers more than one model, indicate model provided
  - 2. Warranty letter by the FEC (Foodservice Equipment Contractor) stating date of completion of installation for warranty issues.
  - 3. Demonstration sign in sheet listing what was demonstrated and all parties that attended this demonstration
  - 4. Equipment keys and spare parts list to include what was turned over and to whom.
  - 5. Signed by owner or owner's representative the punch list determining that all punch list items have been completed and to the owner's satisfaction.
  - 6. Provide documentation on all cooking equipment startups performed by an authorized service agent.

## 1.07 QUALITY ASSURANCE

- A. Regulatory Requirements:
  - 1. Conform to applicable State and local codes for utility requirements.

2. Products Requiring Electrical Connection: Listed and classified by Underwriters' Laboratories, Inc. as suitable for the purpose specified and indicated.
- B. Energy Ratings: Provide appliances with energy guide labels with energy cost analysis (annual operating costs) and efficiency information as required by Federal Trade Commission.
  1. Provide all appliances that are Energy Star Rated.

#### **1.08 QUALIFICATIONS**

- A. Installer: Must have a minimum of 5 years documented installation experience with projects similar to this project.
- B. Fabricator: Must specialize in manufacture of commercial food services equipment with minimum 5 years documented experience.
- C. Manufacturer: Must specialize in manufacturing products specified in this section with a minimum of 5 years documented equipment manufacturing experience.
- D. One qualified full-time site superintendent all be satisfactory to the Owner and Architect in all respects, and owner shall have the right to require Contractor to dismiss from the project any superintendent whose performance is not satisfactory to Owner and Architect except with another superintendent satisfactory to the Owner and Architect in all respects. At the request of the Architect, the Contractor's superintendent shall attend project meetings, whether the project meetings are prior to the start of the Contractor's work.
  1. Contractor shall provide a superintendent with experience in managing project of this size and complexity with minimum three (3) projects including projects completed on time per contract. Experience shall be documents in writing from end user and design consultant.

#### **1.09 DELIVERY, STORAGE AND HANDLING**

- A. Store products clear of floor in a manner to prevent damage.
- B. Coordinate size of access and route to place of equipment installation.
- C. Coordinate equipment delivery and installation with all other trades.
- D. Contractor takes all responsibility for equipment damage incurred before, during and after installation, until Substantial Completion has been determined by Architect.
- E. One site superintendent all be satisfactory to the Owner and Architect in all respects, and owner shall have the right to require Contractor to dismiss from the project any superintendent whose performance is not satisfactory to Owner and Architect except with another superintendent satisfactory to the Owner and Architect in all respects. At the request of the Architect, the Contractor's superintendent shall attend project meetings, whether the project meetings are prior to the start of the Contractor's work.
  1. Contractor shall provide a superintendent with experience in managing project of this size and complexity with minimum three (3) projects including projects completed on time per contract. Experience shall be documents in writing from end user and design consultant.

#### **1.10 COORDINATION**

- A. Coordinate existing equipment with Owner per Part 3 Existing Equipment.
- B. Coordinate with other trades to ensure existing equipment is disconnected prior to removal by this contractor. Supply and install all necessary drain traps, steam traps, vents, shut-offs, valves, pipe fittings, and/or other materials to complete final plumbing and electrical or steam connections between the rough-in and the connection or connections on each piece of equipment.
- C. Ductwork and ductwork connections from hoods collars to duct work provided by HVAC unless otherwise indicated.
- D. Install all drain fittings, tailpieces, faucets, operating switches, and/or starters.
- E. Coordinate sequencing of equipment installation with other trades prior to installing any piece of equipment.
- F. Coordinate special conditions with other trades, i.e. floor depression, soda line conduit requirements, roof curbs, control wiring, etc.

## **1.11 WARRANTY**

- A. Provide a one (1) year parts and labor guarantee on all new equipment.
- B. Components of equipment subject to replacement prior to one year's use and those items which may fail due to improper or inadequate periodic maintenance by the Owner/Operator are not intended to be included within the scope of warranty.
- C. For all equipment that has refrigeration systems and semi-hermetic compressors, furnish an additional four (4) year warranty on all compressors.
- D. Guarantee/Warranty period shall commence with the date of Substantial Completion.
- E. Warranty includes all costs incurred for removal and re-installation of the replacement component or equipment.

## **PART 1 PRODUCTS**

### **2.01 PRODUCT SELECTION PROCEDURES**

- A. General Product Requirements: Provide products that comply with the Contract Documents, are undamaged and, unless otherwise indicated, are new at time of installation.
  - 1. Provide products complete with accessories, trim, finish, fasteners, and other items needed for a complete installation and indicated use and effect.
  - 2. [AMA] All products shall be new. Use salvaged materials only where specifically directed to do so.
  - 3. [AMA] Standard Products: If available, and unless custom products or nonstandard options are specified, provide standard products of types that have been produced and used successfully in similar situations on other projects.
  - 4. Owner reserves the right to limit selection to products with warranties not in conflict with requirements of the Contract Documents.
  - 5. Where products require color selection the Architect will make the selection.
  - 6. Descriptive, performance, and reference standard requirements in the Specifications establish salient characteristics of products.
  - 7. Or Equal: For products specified by name and accompanied by the term "or equal," or "or approved equal," or "or approved," comply with requirements in "Comparable Products" Article to obtain approval for use of an unnamed product.
- B. Product Selection Procedures:
  - 1. Products:
    - a. Non-restricted List: Where Specifications include a list of names of both available manufacturers and products, provide one of the products listed, or an unnamed product, that complies with requirements. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product.
  - 2. Manufacturers:
  - 3. Basis-of-Design Product: Where Specifications name a product, or refer to a product indicated on Drawings, and include a list of manufacturers, provide the specified or indicated product or a comparable product by one of the other named manufacturers. Drawings and Specifications indicate sizes, profiles, dimensions, and other characteristics that are based on the product named. Comply with requirements in "Comparable Products" Article for consideration of an unnamed product by one of the other named manufacturers.

### **2.02 COMPARABLE PRODUCTS**

- A. Conditions for Consideration: Architect will consider Contractor's request for comparable product when the following conditions are satisfied. If the following conditions are not satisfied, Architect may return requests without action, except to record noncompliance with these requirements:
  - 1. Evidence that the proposed product does not require revisions to the Contract Documents that it is consistent with the Contract Documents and will produce the indicated results, and that it is compatible with other portions of the Work.

2. Detailed comparison of significant qualities of proposed product with those named in the Specifications. Significant qualities include attributes such as performance, weight, size, durability, visual effect, and specific features and requirements indicated.
3. Evidence that proposed product provides specified warranty.
4. List of similar installations for completed projects with project names and addresses and names and addresses of architects and owners, if requested.
5. Samples, if requested.

### **2.03 MATERIALS**

- A. Sheet Steel: ASTM A446; 1.25 ounce per square foot galvanized coating.
- B. Stainless Steel: ASTM A167; Type 304 commercial grade, No. 4 finish.
- C. Glass: 3/16-inch float conforming to ASTM C1036 and ASTM C1048; exposed edges ground; cut or drilled to receive hardware.
- D. Plastic Laminate: NEMA LD3; 0.050-inch-thick; color as selected by Architect.
- E. Laminate Backing Sheets: LD3-BK20, 0.020-inch-thick, unfinished plastic laminate.
- F. Finish Hardware: Manufacturer's standard.
- G. Work Surfaces: As specified.
- H. Fittings: Sink drains with crumb cup and waste fittings, faucets, and electrical outlets.
- I. Service Outlet Covers and Escutcheons: Stainless steel.
- J. Service Accessories and Connections:
  1. Provide control switch or starter on each motor-driven appliance or heating element, under provisions of UL requirements.
  2. Provide internal wiring for equipment, including electrical devices, wiring controls, and switches to a common junction box.
  3. Provide suitable length of 4 wire cord with plugs to match building receptacles.
  4. Provide lamps for fixtures in equipment.
  5. Provide equipment with connection terminals, so that connections of plumbing, gas, steam, electrical, ventilation, and refrigeration services can be made. Where receptacles are specified for custom equipment, supply cut-outs and outlet boxes set in place accessible for connections of electrical work.

### **2.04 EQUIPMENT**

- A. Provide rough-in hardware, supports and connections, attachment devices, closure panels, trim strips, and all accessories required for proper operation of equipment.
- B. Standard of Comparison: The specified equipment has been established to set a standard of quality and features.
- C. If substitutions require different utility/building conditions, electrical, plumbing, ventilation, etc., from those specified, a complete list of those changes for each item shall be included with the request for substitution. Any costs associated with these changes will become the responsibility of this Contractor.
- D. Verify direction of door swings.

### **2.05 FABRICATION**

- A. General Requirements:
  1. Stainless Steel Fastenings and Fittings: Bolts and screws with countersunk flat heads at interior and exterior visible or accessible surfaces. Use concealed fastenings where possible
  2. Form edges smooth. Fabricate sheet material for work surfaces, facings, shelves, and drainboards of straight length in one continuous sheet when not over 12 feet in length.
  3. Fix leg-mounted units by dowelling to floor with 1/4-inch stainless steel pins, where vibration or oscillation is anticipated.

4. Provide legs with stainless steel adjustable feet. Fasten legs to equipment securely and rigidly.
  5. Install rubber or nylon button feet or other protective device on bearing surface of any item positioned on a finished surface.
  6. Isolate rotating or reciprocating machinery to prevent noise and vibration.
  7. Provide accommodation for installation of final connections by other trades and accessibility to components such as compressors, junction boxes, etc....
  8. Grind welds of stainless-steel smooth and flush; polish to match adjacent surfaces.
  9. Cut and drill components for service outlets and fixtures.
  10. Provide access panels where required to access utilities.
  11. Shop assemble work where possible.
- B. Load Carrying Counter Surfaces: Reinforce frame support system and surfaces so that surfaces may safely support a load of 200 pounds concentrated on one square foot in any area or surface with no indentation showing on surface, and with permanent set not exceeding 0.005 inches.

## **2.06 FINISHES**

- A. Metal (Except Stainless Steel): Degrease and phosphate etch followed by primer and minimum 2 coats factory baked epoxy enamel, color as selected by Architect from manufacturer's full range of standard and custom colors.
- B. Plastic Laminate: Color as selected by Architect from manufacturer's full range of standard and custom colors.
- C. Stainless Steel: Number 4 finish (unless indicated otherwise).
- D. Bituminous Paint: Sound deaden internal surfaces of metal work and underside of metal counters and sinks.

## **PART 1 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify all existing conditions and existing equipment requirements.
- B. Verify ventilation outlets, service connections, and supports are correct and in required location.
- C. Verify operational condition of existing equipment.
- D. Immediately upon finding Report equipment discrepancies or non-operational equipment to the Architect.

### **3.02 INSTALLATION**

- A. Pre-installation site visits are required to obtain field measurements, verify finish dimensions, examine rough in progress and to coordinate with trades on site.
- B. Use anchoring devices approved by manufacture and are made with a material that will not rust and are appropriate for equipment and expected usage.
- C. Verify equipment is installed in accordance with the manufacturer's recommendations and requirement.
- D. Insulate to prevent electrolysis between dissimilar metals. Provide sealant to achieve clean joint without crevices.
- E. Weld and grind joints in stainless steel work tight, without open seams, where necessary due to limitations of sheet sizes or installation requirements.
- F. Sequence installation and erection to ensure mechanical, plumbing and electrical connections are achieved in an orderly and expeditious manner.
- G. Cut, fit, and patch where necessary. Coordinate work with other trades.
- H. Cut and drill tops, backs or other elements for service outlets, fixtures, and fittings.
- I. Provide access panel or cutting and patching of items of this Section required for the installation or services of equipment.

- J. Remove and reinstall existing equipment required under this Section. Foodservice Equipment contractor shall verify condition of existing equipment prior to removal, if being reinstalled by this contractor or reused by Owner.
- K. Protect new and existing equipment during construction phase as required to prevent damage to equipment.

### **3.03 EXISTING EQUIPMENT**

- A. The Owner reserves the right to keep any existing equipment, coordinate with Owner on removal and transportation of equipment to a location of their choice. It shall be the responsibility of this contractor to salvage equipment the Owner chooses not to retain.
- B. MEP disconnections by related trades, move, store and re-install equipment, ready for utility connection.
- C. Coordinate scope of work and timeline with Owner and other trades prior to removal of existing equipment.
- D. Clean and re-furbish existing equipment to be re-used to "like new" condition, as noted.
- E. It is the responsibility of this contractor to provide storage as required until the piece of equipment is installed or re-installed.
- F. It is the responsibility of this contractor to evacuate refrigerant, dismantle and remove all refrigeration equipment associated with existing walk-in cooler, freezer or equipment with remote refrigeration components (if applicable).

### **3.04 ADJUSTING**

- A. Upon completion of installation, adjust new and existing equipment and apparatus to ensure proper working order and conditions.
- B. If a new piece of equipment is not functioning properly and determined to be non-repairable in the field it shall be removed and replaced with a new piece of equipment.
- C. Inspect all equipment and run each piece of equipment through a complete operating cycle to verify that equipment is fully operational.

### **3.05 CLEANING**

- A. Cleaning shall be conducted prior to the turnover of the kitchen to the owner
- B. Remove masking or protective covering from stainless steel and other finished surfaces.
- C. Remove all packing materials and debris from jobsite.
- D. Wash and clean new and existing equipment.
- E. Polish glass, plastic, hardware and accessories, fixtures and fittings.

### **3.06 DEMONSTRATION AND TESTING**

- A. Demonstrations shall be coordinated by the FEC and conducted prior to the turnover of kitchen to the owner. FEC shall provide sign in sheet from the demonstration showing attendance and items demonstrated. This document to be included with closeout documents
- B. Test existing and new equipment prior to demonstration.
- C. At completion of work, provide qualified and trained personnel to demonstrate operation of each item of equipment and instruct Owner in operating procedures and maintenance.
- D. Individuals performing demonstration shall be fully knowledgeable of all operating and service aspects of equipment.
- E. Start-up, test, and adjust new equipment. Authorized factory technicians shall start-up equipment requiring testing and balancing, i.e. hoods, pulping systems, equipment with remote components, etc.
- F. All equipment that qualifies for factory startups will be coordinated by FEC and completed prior to equipment turn over to owner.

1. All demonstrations/training to be performed by a qualified manufactures representative.  
Provide to Architect attendance records for all training on all equipment

## **PART 1 LISTING OF FOODSERVICE EQUIPMENT**

### **4.01 ITEM 1 WALK IN COOLER/FREEZER – ONE (1) REQUIRED**

- A. Custom Model BALLY Sectional Walk-in Cooler/ Freezer complete with doors shall be manufactured by Bally Refrigerated Boxes, Inc. drawing #100820 Overall size of walk-in shall be approximately 18' – 3 1/2" long x 13'-6" wide x 8'-6" high, size and configuration per Bally's current drawing# 100820 drawing (field verify Size). To be an indoor box with floor recessed 4" for level transition.
  1. Foam core panels shall be Underwriters Laboratories-listed as having flame spread of 25 or lower and smoke generation of 450 or lower when tested in accordance with ASTM E-84-76. Panels shall be approved by Factory Mutual as a Class I building type. They shall be foamed using HCFC expanding agents and shall meet all current international standards.
  2. All work and materials shall be in full accordance with local and/or state ordinances, and with other prevailing rules or regulations.
  3. Panels shall consist of interior and exterior metals skins precisely foamed with steel and dies and roll-form equipment and thoroughly checked with gauges for accuracy. The metal skins shall be placed into heated molds and liquid urethane injected between them. Urethane shall be foamed-in place (poured, not frothed) and, when completely heat cured, shall bind tenaciously to the metal skins to form an insulated panel. Panels shall contain 100 percent urethane insulation and have no internal wood or structural members between the skins. To ensure tight joints, panel edges must have foamed-in-place tongues and grooves with a flexible vinyl gasket on the interior and exterior of all tongue edges. Gaskets shall be resistant to damage from oil, fats, water and detergents and must be NSF-approved. Panel thickness shall be 4" thick.
  4. Exterior Finish:
    - a. Walls, floor and ceiling shall be Stucco-embossed aluminum.
  5. Interior Finish:
    - a. Floor panels shall have 1/8" aluminum diamond tread plate
    - b. Walls and ceiling shall be Stucco-embossed aluminum
  6. All panels except corner panels shall be made in 23" and 46" widths, fully interchangeable for fast, easy assembly. Panels 11-1/2", 17-1/4" or 34-1/2" wide are to be furnished only if required to fit the allocated space. To assure perfect alignment and maximum strength, corner panels shall employ a right-angle configuration with exterior horizontal dimensions of 12" on each side. Vertical panels (except corner panels) shall be supplied in a single length up to 28' high (16" high for installations with aluminum or stainless-steel finish). For outdoor applications, single-height panels greater than 19" (16" for aluminum) or multi-tiered vertical panels must be secured to horizontal girts mounted between building columns. 8. Panels shall be equipped with Bally Speed-lok diaphragmatic joining devices. The distance between locks shall not exceed 46". Each device shall consist of a cam action, hooked locking arm placed in one panel, and a steel rod positioned in the adjoining panel, so that when the arm is rotated, the hook engages the rod and draws the panels tightly together with cam action. Arms and rods shall be housed in individual steel pockets. Pockets on one side of the panel shall be connected to pockets on the other side in width, by the use of 2" -wide metal straps set into and completely surrounded by the insulation. When panels are joined together, these straps shall form lock-to-lock connections for extra strength.
  7. Floor Construction –Bally floor panels shall be 4" thick 1/8" Aluminum diamond tread panels that comply with NSF.
  8. Supply two (2) Super Doors 36" wide x 78" height with 1/8" DT kick plate interior and exterior. Doors are in-fitting and flush mounted. Magnetic core, thermoplastic gaskets installed on the top edge and both sides of the door shall keep the door in a closed position, forming a tight seal; a flexible, dual blade wiper gasket shall be installed at the bottom of the door. NSF-approved gaskets shall be replaceable and resistant to damage



from oil, fats, water and detergent. A heavy U-channel structural steel frame around the perimeter of the door opening shall prevent racking or twisting; steel frame is to be reinforced for hardware attachment. Anti-condensate heater wire shall be concealed behind the metal edge of the doorjamb. The door panel shall also include a vapor-proof interior lamp with LED light fixture; junction box for 120v., 60 cycle, 1 phase, a.c. service (15-amp maximum); 2"-dia. flush-face dial thermometer (field mounted on 60" wide doors).

9. Hardware
  - a. Supply with each door: three spring-loaded, self-closing hinges and door closer. Provide satin aluminum finish.
10. Door Options
  - a. Provide one Observation Window in each Entrance Door - (a 14" X 14") heated observation window shall be provided in the entrance door. It consists of three panes of glass with sealed air spaces between them. The window shall be supplied with heated glass and frame and units shall be removable for replacement.)
  - b. Provide one NSF approved strip curtain for each door
  - c. Bally's standard door latch hardware.
  - d. 1/8" D.T. Kickplate Int. & Ext.
  - e. Radius floor step plate
11. Options:
  - a. Provide Pressure Relief Port in freezer compartment.
  - b. Four (4) LED Kason 1809 Lights (2) tube 17" long, including bulbs (2) cooler/ (2) freezer.
  - c. Provide trim strips alongside exterior walls and building & around door opening between building wall and walk-in (same finish as wall panel).
  - d. Vinyl Rub Rail on all exposed walls.
12. Alarm and system temperature monitoring system:
  - a. The following items will be provided by Bally Refrigerated Boxes with final connections by FEC and EC.
    - 1) Bally to provide and install on each door panel
    - 2) One (1) flush mounted modularm75LC Multi-Monitor with push button controls and dry contacts for lights, temperature, door ajar alarms For combination boxes both alarms is to be placed on exterior doors. FEC to complete any interconnections required
    - 3) One (1) Modularm MC1F Magnetic contact one per door
    - 4) One (1) Modularm Motion detector Model MD-1(1) per compartment
    - 5) One (1) Modularm Panic button Model IP1 to be located in freezer compartment only
13. Construction shall be of a design approved by the National Sanitation Foundation and shall carry the NSF Label of Approval mounted on each door section.
14. Warranties
  - a. Bally shall warrant that any part of the structure it supplies (except the refrigeration system and its related accessories) is free from defects in materials or workmanship under normal use and service. The insulated panel portion of the structure is warranted free from defects under normal use and service for a period of 10 years from date of installation (but in no event shall the warranty be in force for more than 10 years and 6 months from the date the product was first shipped by Bally). Panel surface condition is warranted free from defects under normal use and service for one year from installation, provided the panel is stored and installed according to Bally's instructions. Mechanical (including hardware, gasketing, Speed-lok assemblies, aluminum weather roofs) and electrical components, except refrigeration systems (which are covered by a separate warranty) are warranted to be free from defects under normal use and service for one year from date of installation. (In no case shall this portion of the warranty be in force for more than one year and six months from the date the product was first shipped by Bally.) The warranty shall not include any labor charges for replacement or repair of defective parts or refrigeration. Full warranty information is to be provided with the walk-in.

15. CONTRACTOR'S RESPONSIBILITIES:

- a. It shall be the responsibility of this Contractor to Deliver, set-in-place and completely assemble the walk-in components and refrigeration systems. Install trim strips and closure panels (as specified - securely attached and sealed with silicone) between the box and all adjoining wall and ceiling areas. Material shall be of the same type and finish as the walk-in box surface. This contractor shall verify existing building conditions and field verify size and location of space where the walk-in is scheduled to be installed. Coordinate finished floor elevation with the Architect.
- b. Installation requirements of the walk-in box shall not be limited to but also include the following items:
  - 1) Verify that all panel to panel am locks are fully engaged and stainless cover caps are in place.
  - 2) Entrance door should close and seal on its own. Verify seal at gasket by checking for light from inside of door with interior light turned off. Adjust door hinges as required to obtain a tight seal.
  - 3) Remove all protective coating, shipping materials and packaging labels from panel surfaces, both inside and outside of the box
  - 4) Neatly seal all penetrations/gaps to prevent condensation or ice from occurring. Seal or verify seal at all electrical conduits both internally & externally at entrance point.
  - 5) Fasten door threshold plates to the floor panel using 12-24 x ½ self-tapping screws provided by Bally
  - 6) Check door lock for proper operation, key should rotate freely for 90 degrees from the open to lock position. The key should sassily be removed from the cylinder in either the open or locked position.
  - 7) Verify door frame heater operation. Heater strikes should feel warm to the touch.
  - 8) FEC will be required to trim and seal and gaps from pit inside and out
- c. Refrigerant used shall be of the latest type available and shall meet all codes and governmental requirements. All condensing units shall be factory assembled using UL listed or recognized components. Evaporators shall be forced air type, designed for ceiling installation. Freezer evaporators shall come with automatic electric defrost system with time clock, fan delay thermostat, heaters and heated drain pan. Evaporators shall be UL listed or recognized.
- d. Verify location of condensing units with Architect.
- e. It shall be the responsibility of this Contractor to completely install all refrigeration piping and controls (including interconnection of all electric) and pipe drain lines from coils in rigid copper to the floor drain, leaving the unit ready for final connections only by other trades. Drain line heater for freezer shall be supplied and installed by this Contractor. Electrical Contractor to interwire lights to switch.

**4.02 ITEM 1A –WALK IN COOLER REFRIGERATION SYSTEM – ONE LOT (1 LOT) REQUIRED**

A. Custom Model BALLY

1. Cooler: One (1) Scroll Condensing Unit – BEZA 008 H8 HT3DB (208-230/3/60) w/ smart speed .8 HP A/C Outdoor Scroll Unit 8800
2. One (1) Evaporator Coil BLP 209MA-S1D-TSV+ 115/1/60 SmartVap+ intuitive control technology adaptive control display and defrost Air Defrost with EEV Installed
3. Disconnect switch, fused 208-230
4. Heated and insulated receiver
5. Five (5) year total refrigeration parts and compressor warranty(s).
6. Refrigeration piping and control wiring by Foodservice Contractor.
7. Installation requirements of the refrigeration system shall not be limited to but include the following:
  - a. Purge refrigerant lines with nitrogen while brazing to avoid carbon formation in the line sets. Installation of a field mounted liquid line filter drier is recommending just outside the evaporator cabinet to catch any contaminants that may have entered the

- system during installation
- b. Perform leak check of all factory & field installed joints and mechanical connections. Double evacuate entire system to 250microns. Weigh in and document refrigerant type and total charge for cold weather operation.
- c. Verify that site voltage is within specifications of equipment. Supply must be 5/+10% of name plate voltage. Verify that all mechanical and connections are tight and sealed correctly
- d. Evaporator drain lines must be properly trapped to avoid moisture and contaminates from being pulled back into the walk in. When sharing common drain line, make certain to install a trap between any freezer and cooler evaporator to avoid moisture from being drain back into the freezer compartment.
- e. Freezer drain lines must be installed using copper pipe. Freezer drains must be heated and insulated to avoid freezing of pipe. Maintain adequate slope to allow for a fast removal of moisture from the line
- f. Check and set pressure controls with refrigeration gauges. Make certain that differential settings allow the compressor to remain off line during any off-cycle periods
- g. Check and adjust superheat at the evaporator coil. Coolers 8-12-degree F. Maintain a minimum of 20 degrees of super heat at the compressor to avoid liquid flood back
- h. Suction lines must be insulated properly and neatly with no gaps through the entire length of the run. This insulation should be run through the insulated Bally panel and not just up to the penetration to avoid vapor leaks at the panel juncture.
- i. Run systems through a complete operation cycle allowing them to pull down to set point temperature including a defrost cycle to verify all functions, setting and pressures are operation as specified.
- j. On Smart Vap Controllers-(smart electric & air defrost systems) adjust the air sensor on the rear of the evaporator coil to a distance of 6" from the face of the coil surface
- k. Smart Vap Electric defrost controller Should be set at a factory default for defrost is on a Demand basis. Adjustment under advance menu may be required
- 8. Roof curb will be furnished by this contractor and installed by others. Provide Roof Products, INC model# RPES-3 equipment support, 18 ga. galvanized steel construction; 2 X 4 pressure-treated wood nailers; vertical C-channel bulkheads; one-piece outer shell with welded corners; 18 ga. galvanized counterflashing. All welds micro-sealed and prime painted after fabrication. Provide two (2) supports per condensing unit: 48" - 42" long x 16" tall (size per manufacture recommendations).

#### **4.03 ITEM 1B –WALK IN FREEZER REFRIGERATION SYSTEM – ONE LOT (1 LOT) REQUIRED**

##### **A. Custom Model BALLY**

1. Freezer: One (1) Scroll Condensing Unit – BEZA 030 L8 HT3DF (208-230/3/60) w/ smart speed Scroll Unit 3.0 HP 11000 BTU
2. One (1) Evaporator Coil BLP 209 LE-S2D-TSV+ intuitive control technology adaptive control display and defrost 208-230/1/60 SmartVap+ Air Defrost with EEV Installed
3. Disconnect switch, fused 208-230
4. Heated and insulated receiver
5. Five (5) year total refrigeration parts and compressor warranty(s).
6. Refrigeration piping and control wiring by Foodservice Contractor.
7. Installation requirements of the refrigeration system shall not be limited to but include the following:
  - a. Purge refrigerant lines with nitrogen while brazing to avoid carbon formation in the line sets. Installation of a field mounted liquid line filter drier is recommending just outside the evaporator cabinet to catch any contaminants that may have entered the system during installation
  - b. Perform leak check of all factory & field installed joints and mechanical connections. Double evacuate entire system to 250microns. Weigh in and document refrigerant type and total charge for cold weather operation.

- c. Verify that site voltage is within specifications of equipment. Supply must be 5/+10% of name plate voltage. Verify that all mechanical and connections are tight and sealed correctly
  - d. Evaporator drain lines must be properly trapped to avoid moisture and contaminates from being pulled back into the walk in. When sharing common drain line, make certain to install a trap between any freezer and cooler evaporator to avoid moisture from being drain back into the freezer compartment.
  - e. Freezer drain lines must be installed using copper pipe. Freezer drains must be heated and insulated to avoid freezing of pipe. Maintain adequate slope to allow for a fast removal of moisture from the line
  - f. Check and set pressure controls with refrigeration gauges. Make certain that differential settings allow the compressor to remain off line during any off-cycle periods
  - g. Check and adjust superheat at the evaporator coil. Coolers 8-12-degree F. Maintain a minimum of 20 degrees of super heat at the compressor to avoid liquid flood back
  - h. Suction lines must be insulated properly and neatly with no gaps through the entire length of the run. This insulation should be run through the insulated Bally panel and not just up to the penetration to avoid vapor leaks at the panel juncture.
  - i. Run systems through a complete operation cycle allowing them to pull down to set point temperature including a defrost cycle to verify all functions, setting and pressures are operation as specified.
  - j. On Smart Vap Controllers-(smart electric & air defrost systems) adjust the air sensor on the rear of the evaporator coil to a distance of 6" from the face of the coil surface
  - k. Smart Vap Electric defrost controller Should be set at a factory default for defrost is on a Demand basis. Adjustment under advance menu may be required
8. Roof curb will be furnished by this contractor and installed by others. Provide Roof Products, INC model# RPES-3 equipment support, 18 ga. galvanized steel construction; 2 X 4 pressure-treated wood nailers; vertical C-channel bulkheads; one-piece outer shell with welded corners; 18 ga. galvanized counterflashing. All welds micro-sealed and prime painted after fabrication. Provide two (2) supports per condensing unit: 48" - 42" long x 16" tall (size per manufacture recommendations).

#### **4.04 ITEM 2 – COOLER DUNNAGE RACKS – ONE LOT (1 LOT) REQUIRED**

- A. One (1) New Age Model 2016 Dunnage Rack, 60"W x 24"D x 8"H, all welded aluminum construction, 1-1/2" x 1-3/4" x 0.070 tubing, welded aluminum caps on feet, weight capacity 2000 lbs., NSF, Made in USA
  - 1. Lifetime warranty against rust & corrosion, 5-year workmanship and material defects warranty
  - 2. It shall be the responsibility of this contractor to field verify and adjust dunnage sizes to insure a proper fit

#### **4.05 ITEM 3 -WALK IN COOLER SHELVING – ONE LOT (1 LOT) REQUIRED**

- A. Four tier Metro Model A---NK3 Super Adjustable Super Erecta® Shelf, wire, Metroseal 3 (corrosion-resistant) finish, corner release system, with Microban® antimicrobial protection, NSF.
- B. Each shelving unit shall have four (4) Model 74PK3 Super Erecta® SiteSelect™ Post, 74-5/8"H, adjustable leveling bolt, posts are grooved at 1" increments & numbered at 2" increments, double grooved every 8", Metroseal 3™ epoxy-coated corrosion-resistant finish with Microban® antimicrobial protection. Shelving shall be provided as shown on drawing (No "S" clips allowed),
  - 1. It shall be the responsibility of this contractor to verify and adjust shelving sizes to insure proper fit.

#### **4.06 ITEM 4 -WALK IN FREEZER SHELVING – ONE LOT (1 LOT) REQUIRED**

- A. Four tier Metro Model A---NK3 Super Adjustable Super Erecta® Shelf, wire, Metroseal 3 (corrosion-resistant) finish, corner release system, with Microban® antimicrobial protection,

NSF.

- B. Each shelving unit shall have four (4) Model 74PK3 Super Erecta® SiteSelect™ Post, 74-5/8"H, adjustable leveling bolt, posts are grooved at 1" increments & numbered at 2" increments, double grooved every 8", Metroseal 3™ epoxy-coated corrosion-resistant finish with Microban® antimicrobial protection. Shelving shall be provided as shown on drawing (No "S" clips allowed),
  - 1. It shall be the responsibility of this contractor to verify and adjust shelving sizes to insure proper fit.

#### **4.07 FREEZER DUNNAGE RACKS RACK ONE LOT (1 LOT) REQUIRED**

- A. Four (4) New Age Model 2015 Dunnage Racks, 48"W x 24"D x 8"H, all welded aluminum construction, 1-1/2" x 1-3/4" x 0.070 tubing, welded aluminum caps on feet, weight capacity 2500 lbs., NSF, Made in USA
  - 1. Lifetime warranty against rust & corrosion, 5-year workmanship and material defects warranty
  - 2. It shall be the responsibility of this contractor to verify and adjust shelving sizes to insure proper fit

#### **4.08 ITEM 6 – DRY FOOD SHELVING – ONE LOT (1 LOT) REQUIRED**

- A. Four tier Metro Model A----NK3 Super Adjustable Super Erecta® Shelf, wire, Metroseal 3 (corrosion-resistant) finish, corner release system, with Microban® antimicrobial protection, NSF.
- B. Each shelving unit shall have four (4) Model 74PK3 Super Erecta® SiteSelect™ Post, 74-5/8"H, adjustable leveling bolt, posts are grooved at 1" increments & numbered at 2" increments, double grooved every 8", Metroseal 3™ epoxy-coated corrosion-resistant finish with Microban® antimicrobial protection. Shelving shall be provided as shown on drawing (No "S" clips allowed),
  - 1. It shall be the responsibility of this contractor to verify and adjust shelving sizes to insure proper fit.

#### **4.09 ITEM 7 - DUNNAGE RACKS – ONE LOT (1 LOT) REQUIRED**

- A. Two (2) New Age Racks Model 2028 Dimensions: 12(h) x 60(w) x 30(d) Dunnage Rack, 60"W x 30"D x 12"H, all welded aluminum construction, 1-1/2" x 1-3/4" x 0.070 tubing, welded aluminum caps on feet, weight capacity 2500 lbs., NSF, Made in USA
  - 1. Lifetime warranty against rust & corrosion, 5-year workmanship and material defects warranty
  - 2. It shall be the responsibility of this contractor to verify and adjust dunnage sizes to insure proper fit.

#### **4.10 ITEM 8 - CAN RACK – ONE (1) REQUIRED**

- A. Piper Products/Servolift Eastern Model CSR-FF-156 Dimensions: 81.06(h) x 27.25(w) x 42(d) Can Rack, (156) #10 cans, all welded aluminum
  - 1. 1-year warranty parts and labor
  - 2. Casters, 2 with brakes

#### **4.11 ITEM 9 - SPARE NUMBER**

#### **4.12 ITEM 10 - 2 DOOR REACH IN REFRIGERATOR (EXISTING ITEM #E12 - RELOCATE) – ONE (1)**

#### **4.13 ITEM 11 - 2 DOOR REACH IN REACH-IN FREEZER - ONE (1) REQUIRED**

- A. Continental Refrigerator Model 2FENSA Dimensions: 82.25(h) x 57(w) x 35.38(d) Extra-Wide Freezer, reach-in, 57"W, two-section, self-contained refrigeration, stainless steel exterior, aluminum interior, standard depth, full-height solid doors, cylinder locks, electronic control with digital display, unit can be adjusted to operate as low as -10°F, hi-low alarm, electric condensate evaporator, R290 Hydrocarbon refrigerant, 1/2 HP, cETLus, NSF, Made in USA, ENERGY STAR®. Supply with the following:
  - 1. Warranty: 3-year parts and labor; additional 4-year compressor part

2. 115v/60/1-ph, 9.0 amps, cord, NEMA 5-15P
3. Left Door hinged on left & right door hinged on right
4. 5" Casters

#### **4.14 ITEM 12 - HAND SINKS – TWO (2) REQUIRED**

- A. Advance Tabco Model 7-PS-62 Dimensions: 17.25(h) x 17.25(w) x 15.25(d) Hand Sink, wall mounted, 14" wide x 10" front-to-back x 5" deep bowl, Deep Drawn™ sink bowl, 20 gauge 304 stainless steel, splash mounted gooseneck faucet, knee valve, basket drain, keyhole wall mount bracket, NSF, cCSAus. Provide each with the following:
  1. Model 7-PS-10 P-trap, heavy duty, 1-1/2", 17 gauge
  2. Model K-170 Eye Wash Attachment, attaches to standard spout, adjustable aerated outlet heads, float-off dust covers, pull knob activation, removable aerator on bottom, chrome plated forged brass body (Not to be used with foot or knee operated units or electronic faucets)
  3. Eye wash to be located in dish room area only

#### **4.15 ITEM 13 – FIRE SUPPRESSION SYSTEM - ONE LOT (1 LOT) REQUIRED)**

- A. Ansul R-102 Ansul Fire Protection System this item shall provide coverage for items 14, 15, 16, 17 & 19 Furnish a complete wet chemical fire suppression system model R102 as manufactured by "Ansul" or equal in compliance with U.L. 300 standards. The system shall include factory prepiped, all permits and test as required by the authority having jurisdiction.
  1. Automatic actuation shall be by means of fusible with no visible conduit. System shall include an electrically actuated release mechanism.
  2. System shall be furnished and installed by an Ansul certified distributor in accordance with manufacturer's instructions and the authority having jurisdiction.
  3. Microswitches shall be furnished as part of the fire protection system for tie in of building alarm and for makeup air/fire/fuel shut down.
  4. All access openings, holes, sleeves, chases, etc., in building structure necessary to permit piping and control tubing to be run between system unit, ventilator and duct work are to be provided by the General Contractor.
  5. The Building Alarm System Contractor is to furnish a control relay to detect operation of the system by connection to the microswitches supplied. The Electrical Contractor is to furnish and install all wiring required for the system specified.
  6. All exposed piping and nozzles of fire protection system shall be chrome or Stainless steel sleeved including manual pull station piping.
  7. Whenever possible coordinate with general contractor and fire suppression supplier and architect to run pull station piping recessed in wall. This will need to be completed during framing of wall.
  8. All exposed piping and nozzles of fire protection system shall be chrome or Stainless steel sleeved including manual pull station piping.
  9. All horizontal piping is to be done on the top of the ventilator unless otherwise specified.
  10. Verify location of remote manual pull station.
  11. "Electrical contractor/ shunt trip breaker by EC

#### **4.16 ITEM 14 – EXHAUST HOOD W/ SUPPLY AIR – ONE (1) REQUIRED**

- A. Dimensions: As shown on Halton's Drawings# U20-794 (two section) with a typical hanging height of 6'-8" above finished floor. Hood shall have fire cabinet mounted on right side, as shown on drawings. Remote Switch panel with Fan and light switches shall be remote mounted, verify location with Architect. Hood constructed and design meets NFPA 96 and UL 710 Standards. The hood is NSF and ETL listed, File #103143204 Part 1 for canopy stile, item I hood, single, rear bank filter hoods. Medium duty cooking equipment + 120CF/Lin. Ft. of hood minimum. Hood constructed and design meets NFPA 96 and UL 710 Standards. The hood is NSF and ETL listed, File #103143204 Part 1 for canopy stile, item I hood, single, rear bank filter hoods. Medium duty cooking equipment + 120CF/Lin. Ft. of hood minimum. Panel with Fan and light switches shall be remote mounted, verify location with Architect.
  1. Furnish and install a complete kitchen exhaust canopy with supply plenum. The hood shall be the "Capture-Jet" System #Q KVE SJ.

2. The installation shall be in accordance with the manufacturer's recommendations and the canopy exposed areas and inner liner shall be 18-gauge stainless steel with a #4 hood shall be provided with a 24" wide laminar flow down discharge perforated stainless steel plenum for introduction of makeup air at low velocity in front of the hood, as shown on plans. Discharge velocity shall not exceed 135 fpm, nor affect the hood capture and containment.
3. LED light fixture with the following certifications U.L., CSA, NSF and CE for use in grease exhaust hoods in quantity sufficient to provide 50-foot candles at the cooking surface when hood is mounted 84" A.F.F. LED light fixture is complete with die cast aluminum junction box with integral fins for natural heat dissipation. Input voltage of 24V DC with a power consumption not to exceed 20 watts. The housing encases 24 LED light emitters with a brightness of 1000 lumens. Lamp body is stainless steel ring with a high temperature silicone seal. Junction box to accept standard 1/2" NPT fitting. Fixture shall come complete with integral power supply with an input voltage of 108VAC – 305VAC and input frequency of 50/60 Hz. Input current rating shall be 0.57A @ 120VAC. Fixture shall contain no mercury or lead.
4. The exhaust airflow will be based on the convective heat generated by the appliances underneath each canopy. Submittal shall include convective heat calculations base on the input power of the appliance served as defined by ASTM Standards F-1704-05 Capture & Containment and F-2474-05 Heat Gain to Space. Final air volume calculations shall comply with the hood listing.
5. Hood will include an active internal "Capture-Jet" System that will allow for Capture and Containment of thermal plume at specified air volumes. The Capture Jet air shall be pulled into a 1" air plenum with the Capture-Jet fan and discharged through Capture-Jet ports that are located along the inside front, side and bottom edge of the hood at discharge velocity of 1800 FPM. Slot type, passive devices or "Short-Cycle" discharge is not acceptable.
6. Hood shall be provided with Halton model MBD Manual Balancing Damper for accurate adjustment and commissioning of the hood. The balancing damper shall bear the Underwriters Laboratories U.L. label per U.L. listed range hood accessories per standard 710 and shall be fabricated in compliance with NFPA-96-2004. The damper shall be adjustable to allow for balancing airflow based on pressure differential readings from integral T.A.B. test and balance port in the Capture Jet hood. The damper outer casing shall be constructed of continuously welded 16-gauge galvanized steel including the balancing blades. Optional construction is of 18-gauge stainless steel. Adjustment of the parallel dampers (in open position) will be achieved by manually turning the locking adjustment bracket until the desired pressure reading is achieved.
7. The hood shall be equipped with model KSA multi-cyclone stainless steel grease extractors. The grease extraction efficiency is 93% on particles with a diameter of 5 microns and 98% on particles with a diameter of 15 microns or larger, based upon ASTM F-2519-05 method of test. Sound levels shall be between 40 and 55 NC.
8. The air flows through the KSA extractors and the Capture Jet air chamber are to be determined through the integral T.A.B. (Testing and Balancing) ports mounted in the hood. It is the responsibility of the air balancer to adjust the exhaust volumes after installation with a Magnahelic Gauge or Shortridge Digital Anemometer and the hood TAB ports.
9. Hood shall be provided with a thermostat to determine if appliances are energized without the exhaust fan engaged and will engage the exhaust fan as required to meet the IMC interlock requirement.
10. The Capture Jet hood will come standard with the Halton AccuFlow indicator. The AccuFlow provides a visual indicator that the system is at design exhaust air values. A pressure transducer measures design exhaust rate and this is interpreted by the AccuFlow sensor by a steady green indicator light. Should the system be below design airflow, the indicator light will blink once in sequence. Should the indicator light blink twice in sequence, the exhaust airflow is above design.
11. Performance Criterion: Other manufacturers wishing to offer an alternate to the specified manufacturer must apply for permission to do so, in writing, from the office of the specifying consultant. The consultant must receive application at least ten working days

prior to the bid date. Any alternate system must meet construction and performance requirements and efficiencies as outlined in this specification. Requests for approval must include grease filtration performance data (micron size vs. extraction) for mechanical extractor and manufacturer's own exhaust airflow calculations based on convective heat load of cooking equipment beneath the hood. Efficiency comparison data to be performed in accordance with ASTM Standard F1704-96 and include results for exhaust rate for capture and containment of convective plume, Temperature rise of exhaust air and Heat Gain to the space (kBtu/h). Make up air will be calculated so that the same amount of air will be taken from the zone as is required by the specified system. An additional load cannot be placed on the kitchen HVAC system. Manufacturer must provide a written guarantee of performance, ensuring the specifying consultant that the system will perform to the consultant's satisfaction when installed and balanced according to design airflows and results of ASTM Standard F1704-96 test. (As determined by TAB ports and pressure vs. air flow curves). Consultant reserves the right to reject any system which, when installed, does not perform to ASTM Standard F1704-96 for heat gain according to the specification. Rejected system must be replaced with specified system, with all replacement costs paid by manufacturer of rejected system. Any changes in the specified sizing of power wiring or gas lines due to the use of any system other than that which is specified is the responsibility of the alternate hood manufacturer and must be coordinated by the hood manufacturer and contractors involved.

12. Supplied with fire suppression system cabinet on left side of the hood.
13. NOTE: Filed verify all collar locations with structure above prior to releasing the hood for fabrication.
14. Supply and install S/S closure panels around perimeter of hood to finished ceiling.
15. KSA Filter Removal Tool. FEC to mount in convenient location using wall bracket included
16. Pre-pipe fire suppression system.
17. Remote control panel- FEC to coordinate location with Architect

#### **4.17 ITEM 15 - 2 BURNER RANGE – ONE (1) REQUIRED**

- A. Vulcan Model EV12-2FP-208 Dimensions: 37(h) x 12(w) x 34(d) Expando Range, electric, 12", (2) 2.0 kW 9-1/2" French plates, round, infinite controls, enclosed base, stainless steel front, sides, 10" riser, 6" legs, 208v, NSF, cULus
  1. 1-year limited parts & labor warranty
  2. K-12 School Nutrition extended warranty extends the warranty for 12 months beyond the 12-month Original Equipment Warranty, not to exceed 24 months from date of installation
  3. 208v/60/3-ph, 4kW, 17.3 amps, direct wire
  4. 1 set Casters 2/W brakes
  5. 1 set of T & S Brass Posi Set

#### **4.18 ITEM 16 - 10 PAN STEAMER W/ WATER FILTER – ONE (1) REQUIRED**

- A. Groen Model (2)SSB-5EF Dimensions: 64.75(h) x 21.75(w) x 29.88(d) SmartSteam100™ Convection Steamer, electric, double-stacked, boilerless generator, (5) 12 x 20 x 2-1/2" pans capacity per compartment, stainless steel interior & exterior, open leg stand bullet feet, cUL, UL, NSF, Made in USA. Supply with the following:
  1. (1) year parts & labor, (5) year cavity warranty
  2. (K-12 School purchases only) Two-year parts and labor warranty
  3. Start-up Program, included FEC to coordinate prior to demonstration water quality test and water treatment recommendation included, free start-up adds additional 1-year parts & labor warranty
  4. (2) 208v/60/3-ph, (2) 12.0kw, (2) 34.0 amps
  5. Model 149100 SmartSteam™ water treatment kit (for scale control only)
  6. Model 149101 Replacement Filter, for SmartSteam™ water treatment (1)
  7. Model 162408 Drain Tempering Valve, for 140 degree drain temperature requirement (requires 1/2" cold water connection), no electrical connection required
  8. Door hinged on left
  9. 1 set flanged feet



#### **4.19 ITEM 17 - DOUBLE DECK CONVECTION OVEN – ONE (1) REQUIRED**

- A. Blodgett Model MARK V-200 DBL Dimensions: 64.25(h) x 38.25(w) x 36.88(d) Convection Oven, electric, double-deck, bakery depth, capacity (5) 18" x 26" pans per compartment, (SSD) solid state digital controls, 2-speed fan, interior light, simultaneous operated doors with glass, stainless steel front, sides & top, vent connector, 6" stainless steel legs, vent connector, 11.0 kw each, 1/3 hp, cETL, CE, NSF, ENERGY STAR® Supply with the following:
1. 3-year parts, 2-year labor and 2 additional year door warranty (parts only)
  2. 208v/60/3-ph, 11.0 kW, 31.0 amps, direct (per deck)
  3. Model SSD Top Oven: Solid State digital with Pulse Plus® and Cook & Hold
  4. Model SSD Bottom Oven: Solid State digital with Pulse Plus® and Cook & Hold
  5. 4" low profile plate casters (set)
  6. 1 set T & S Brass Posi-set

#### **4.20 ITEM 18 - COFFEE MAKER (EXISTING ITEM #E10 - RELOCATE) – ONE (1)**

#### **4.21 ITEM 19 - 40 GALLON TILTING KETTLE – ONE (1) REQUIRED**

- A. Cleveland Range Model KEL40TSH Dimensions: 45(w) x 41.13(d) Short Series™ Steam Jacketed Kettle, electric, manual tilting, 40-gallon capacity, full steam jacket design, 316 stainless steel interior, 35" rim height, solid state water level control, open tri-leg base, 304 stainless steel construction, flanged feet, 50 psi rating, IPX6. Supply with the following:
1. 1-year parts & labor warranty
  2. Extended warranty, not to exceed 24 months from date of installation (for K-12 schools only)
  3. Performance start-up included FEC to coordinate prior to demonstration after equipment is installed
  4. Standard wattage
  5. 208v/60/3-ph, 14.7kW, 40.9 amps,
  6. Standard Control Panel includes: LED indicator for heat cycle & low water, Power ON/OFF Dial with 1-10 Temperature Dial Setting
  7. Model TD2 2" tangent draw-off valve with strainer
  8. Model DS2 Perforated Drain Strainer, 2" draw-off, 3/16" strainer holes
  9. Model TDDC Drain Cup Assembly, includes: 8' length of 2" ID hose, stainless steel cup assembly & hose clamp
  10. Model CHS40ETSH Spring-assisted cover (40 gallon)
  11. Model PCK Pan Carrier, for all floor model kettles 25 gal & larger except KDM-25-T
  12. Model DPK7 Double Pantry Faucet, with swing spout & mounting bracket for tilting kettles
  13. Model FBKT Faucet Bracket
  14. Model KAK Kettle Accessory Kit, includes: clean up brush, paddle, stainless steel whip, brush, draw-off brush, ladle
  15. Flanged feet

#### **4.22 ITEM 20 - FLOOR TROUGH – ONE (1) REQUIRED**

- A. IMC/Teddy Model ASFT-3030-SG Dimensions: 12.25(h) x 30(w) x 30(d) ASFT Anti-Spill Floor Trough, 30"W x 30"D, 6" deep receptacle, (1) 4" OD tailpiece, stainless steel beehive strainer, 14/304 stainless steel, brushed satin finish, (SG) subway grating, NSF, Made in USA

#### **4.23 ITEM 21 - MICROWAVE OVEN – ONE (1) REQUIRED**

- A. ACP Model RCS10DSE Dimensions: 13.75(h) x 22(w) x 19(d) Amana® Commercial Microwave Oven, 1.2 cu. ft. capacity, 1000 watts, medium volume, 10-min. dial timer, (4) power levels, non-removable air filter, side hinged door with tempered glass, accommodates 14" plate, stainless steel exterior & interior, 120v/60/1-ph, 13.0 amps, 15 MCA, 1550 watts (total), NEMA 5-15P, cETLus, ETL-Sanitation
1. 3-year limited warranty (1 year full)

#### **4.24 ITEM 22 - ISLAND CHEF'S WORKTABLE W/SINK - ONE (1) REQUIRED**

- A. Custom Model by Marlo size and shape as shown on drawing#20PS01. Approximately 8'-0" X 6'-0" X 34" high. Top to be constructed of a 14-gauge 304 stainless steel with S/S channel

edge construction. "C" channel bracing cylindrical gussets and mastic sound deadening. 1 5/8" OD stainless legs adjustable s/s bullet feet flanged feet. 16-gauge under shelf the length of the table. Under Shelf to be welded to legs 10" AFF with S/S "C" Channel bracing. (excluding sink section) Provide four (4) 20" X 20" stainless steel drawers as seen on drawing. Drawers to be double pan construction with HD S/S rollers bearing, integral pull handle, lock and cutting boards. One (1) 20" x 20" X 10" deep coved construction prep sink with twist handle waste with bracket and overflow. Over prep sink area provides approximately 36" single line overhead pot/pan rack. Not to exceed 90" in OA height 2" x 3/16" S/S flat bar welded to 1 5/8" OD S/S Tubular sleeves. Provide (10) ten corrosion resistant s/s type pot hooks. For the remaining length of the table provide over shelf. Single over shelf for the entire length of the table 12" wide X length of the table, to be constructed of a 16-gauge stainless, 2" turn up at rear, 2" down bends at sides and front. Mount shelf on 1 5/8" OD tubular uprights and cantilever brackets with concealed fasteners. Extend over shelf to accommodate microwave item #21. Provide two (2) dog house GFI outlets (120/1/15AMPS) as indicated on drawings for items #23, 27. At chase provide (2) outlets for items 18 & 21 internally factory wired to junction box (UL certified) to a single point connection at a chase. 18-gauge S/S chase to run from table top connection to floor. Chase to have (2) removable access panels to provide access for connections ID to be approximately 2" x 4" provide 4" x 6" end flanges at floor and table top connections. Supply with the following:

1. T&S Brass Model B-0221-EE Mixing Faucet, deck mount, 12" swing nozzle, 8" centers on deck faucet with 1/2" IPS EE male inlets with adjustable flange, quarter-turn Eterna cartridges with spring checks, lever handles, low lead content, ADA Compliant
2. T&S Brass Model B-0425 Supply Nipple Kit, includes (1) 1/2" NPT x 2" long inlet supply nipple, (1) 1/2" locknut washer & (1) 1/2" locknut, brass

#### **4.25 ITEM 23 - CAN OPENER – ONE (1) REQUIRED**

- A. Edlund Model 270/115V Dimensions: 11.5(h) x 6.75(w) x 10(d) Can Opener, electric, for heavy volume, 2-speed motor, knife and gear assemblies that are removable for cleaning, recommended for up to 200 cans per day, cULus, CE, NSF certified, 115v/60/1-ph, 1.5 amp. Supply with the following:
  1. 3-year limited warranty

#### **4.26 ITEM 24 - 40 QT FLOOR MIXER W/CHEESE SHREDDER – ONE (1) REQUIRED**

- A. Hobart Model HL400+BUILDUP Legacy Planetary Mixer, 40 qt, 1½ hp, (3) fixed speeds plus stir speed, geared transmission, Shift-on-the-Fly™ controls, 20-Minute SmartTimer™ ergonomic swing out bowl, Hobart Quick Release™ agitators, #12 attachment hub, stainless steel bowl guard, metallic gray electrostatic powder coat finish. Supply with the following:
  1. warranty: 1-Year parts, labor & travel time during normal working hours within the USA
  2. K-12 School Nutrition extended warranty extends the warranty for 12 months beyond the 12-month Original Equipment Warranty, not to exceed 24 months from date of installation
  3. Model HL400-1 200-240/50/60/3 Mixer; without attachments; US/EXP configuration - Legacy Planetary Mixer - Unit Only, 1.5 hp, 40-quart capacity, (3) fixed speeds, gear-driven transmission, 20 min. timer, #12 taper attachment hub, manual bowl lift, bowl guard
  4. Model BOWL-HL40 Legacy® Mixer Bowl, 40-quart, stainless steel
  5. Model BBEATER-HL4030 Legacy® Mixer 30/40 quart, "B" flat beater, aluminum
  6. Model DWHIP-HL4030 Legacy® Mixer 40/30 quart "D" whip, stainless steel
  7. Model EDDOUGH-HL40SS Legacy® Mixer 40 qt. "ED" dough arm, stainless steel
  8. Model IWIRE-HL4030 40/30 qt. "I" Wire Whip
  9. Model VS9-12 9" Vegetable Slicer for #12 attachment hub; includes back case, hopper front, & adjustable slicer plate, NSF
  10. Model VS9PLT-GRATER Grater Plate
  11. FEC to coordinate / verify grater plate with Food Service Director

#### **4.27 ITEM 25 - ISLAND CHEF'S WORKTABLE W/SINK - ONE (1) REQUIRED**

- A. Custom Model by Marlo size and shape as shown on drawing#20PS01. Approximately 8'-0" X 6'-0" X 34" high. Top to be constructed of a 14-gauge 304 stainless steel with S/S channel edge construction. "C" channel bracing cylindrical gussets and mastic sound deadening. 1 5/8"

OD stainless legs adjustable s/s flanged feet. 16-gauge under shelf the length of the table. Under Shelf to be welded to legs 10" AFF with S/S "C" Channel bracing. (excluding sink section). Provide four (4) 20" X 20" stainless steel drawers as seen on drawing. Drawers to be double pan construction with HD S/S rollers bearing, integral pull handle, lock and cutting boards. One (1) 20" x 24" X 10" deep coved construction prep sink with twist handle waste with bracket and overflow. Over prep sink area provide approximately 36" single line overhead pot/pan rack. Not to exceed 90" in OA height 2" x 3/16" S/S flat bar welded to 1 5/8" OD S/S Tubular sleeves. Provide (10) ten corrosion resistant s/s type pot hooks. Provide three (3) dog house GFI outlets (120/1/15AMPS) as indicted on drawings for items #26, 28 and (1) convenience outlet internally factory wired to junction box (UL certified) to a single point connection at a chase. 18-gauge S/S chase to run from table top connection to floor. Chase to have (2) removable access panels to provide access for connections ID to be approximately 2" x 4" provide 4" x 6" end flanges at floor and table top connections. Supply s/s post for securing the pre-rinse wall bracket. Supply with the following:

1. T&S Brass Model MPZ-8DLN-06 Mini Pre-Rinse Unit, 8" deck mount base faucet, compact spring & flex hose, spray valve, 6" wall bracket, lever handles, 6" add on faucet
2. T&S Brass Model B-0425 Supply Nipple Kit, includes (1) 1/2" NPT x 2" long inlet supply nipple, (1) 1/2" locknut washer & (1) 1/2" locknut, brass

**4.28 ITEM 26 - FOOD PROCESSOR (EXISTING ITEM #E13 - RELOCATE) – ONE (1) REQUIRED**

**4.29 ITEM 27 - 8 QT BENCH MIXER (EXISTING ITEM #E33 - RELOCATE) – ONE (1) REQUIRED**

**4.30 ITEM 28 - SLICER (EXISTING ITEM #E17 - RELOCATE) – ONE (1) REQUIRED**

**4.31 ITEM 29 - 2 DOOR ROLL IN REFRIGERATOR (EXISTING ITEM # E23 - RELOCATE) - ONE (1) REQUIRED**

**4.32 ITEM 30 - SELF-SERVICE REFRIGERATED MERCHANDISERS – TWO (2) REQUIRED**

- A. Structural Concepts Model CO35R Dimensions: 61.63(h) x 36.25(w) x 33(d) Oasis® Self-Service Refrigerated Open Air Screen Case, 36-1/4"W, 61-5/8"H, Breeze-E (Type II) with EnergyWise self-contained refrigeration system, Blue Fin coated coil, (2) non-lit adjustable metal shelves, top light, one piece formed ABS plastic tub, black interior, (2) full end panels, 4"D removable wall spacer brackets, casters, cETLus, ETL-Sanitation. Provide each with the following:
  1. NOTE: If GFCI is required, a GFCI breaker MUST be used in lieu of a GFCI receptacle
  2. NOTE: 34" Minimum entry door clearance required (without shipping skid & with rear spacer bracket removed)
  3. 1 yr. parts & labor warranty, 5 yr. compressor warranty
  4. Breeze-E (Type II) with EnergyWise refrigeration - NSF Type II compliant
  5. 110-120v/60/1ph, 14.66 amps
  6. 6 ft straight blade power cord NEMA 5-20P (base exit)
  7. NOTE: Compressor air intake from front & out rear, unit MUST remain 4" from wall & front panel cannot be locked (Not applicable with remote refrigeration option)
  8. Base Support: Casters, with levelers
  9. Interior: Stainless steel, in lieu of standard black
  10. Exterior: Wilsonart® or Formica® PREMIUM laminates
  11. FEC to coordinate color selection with Architect
  12. Lower front panel: Black,
  13. Left end panel: Full with mirrored interior, vinyl edging,
  14. Right end panel: Full with mirrored interior, vinyl edging,
  15. Back Panel: Rear loading hinged doors, locking
  16. Digital Fahrenheit thermometer,
  17. Add Lights (LED) to standard shelves (2)
  18. Night curtain: Retractable, non-locking

**4.33 ITEM 31 - MILK COOLERS – TWO (2) REQUIRED**

- A. Continental Refrigerator Model MC3NSSD Dimensions: 47(h) x 34(w) x 33(d) Milk Cooler, 34" long, dual access, forced air cooling, (8) 13" x 13" x 11" or (4) 19" x 13" x 11" crate capacity,

door cylinder security locks, electronic control with digital display, hi-low alarm, hi/low temperature alarm, stainless steel interior & exterior, floor drain, (4) 5" swivel casters with front locking brakes, R290 Hydrocarbon refrigerant, 1/4+ HP, cETLus, NSF, Made in USA. Provide each with the following:

1. warranty (for the United States & Canada Only): 3-year parts and labor; additional 4-year compressor part
2. 115v/60/1-ph, 5.7 amps, cord, NEMA 5-15P,
3. Custom finishes of laminate or powder coating
4. FEC to coordinate color selection with Architect. Laminate to be factory applied. Any non factory applications will be rejected.
5. Modify Evaporator for Rear Loading

#### **4.34 ITEM 32 - 4 WELL HOT FOOD UNIT – ONE (1) REQUIRED**

- A. Piper Products/Servolift Eastern Model 4-HF Per drawing #6613 Dimensions: 36(h) x 60(w) x 28(d) Elite 500 Hot Food Unit, electric, 60"L x 36"H, (4) sealed wells with 1000w element with thermostatically controlled each, mobile, modular design with interlocking mechanism, 14 gauge stainless steel top, 20 gauge stainless steel front & end panels, 18 gauge stainless steel bottom shelf, manifold drains standard, 5" swivel plate casters (2 with brakes), 4kW, NSF, UL. Supply with the following:

1. 1-year warranty parts and labor
2. 208v/60/1-ph, 19.2 amps, 4000 watts, NEMA 6-30P
3. Manifold drains
4. Model JC Unit to include 14-gauge stainless steel "J" channel cord chase to keep cords for interconnected wired units (IWU) off the floor
5. Model FLP Filler Strips, for Elite systems
6. Model HD-60 Hinged doors for (4) openings Elite system
7. Model LD Locks, for doors for Elite system
8. Model FRMAD-60 Formica laminate with doors, for Elite systems
9. Model SCB-8-60 Cutting Board for Elite system, 8", for (4) openings - 60"W, stainless
10. Model SRTS-60 Tray slide for Elite system, 12" solid ribbed, heavy gauge stainless steel, for (4) openings - 60"W
11. Model ME Mitered end for tray slide for Elite system
12. Model PG MOUNT Mounting of other manufacturer's sneeze guard. Premier item 36 slant style fully adjustable guard to be provided by FEC and sent to Piper for install.
13. Model TURN DOWN Modified turn down with special interlocks to connect 2 different height counters.

#### **4.35 ITEM 33 - SOLID TOP UNIT – ONE (1) REQUIRED**

- A. Piper Products/Servolift Eastern Model 2-CR per drawing # 6613 Dimensions: 36(h) x 28(w) x 28(d) Elite Corner Serving Counter, 28"L x 36"H, mobile modular design with interlocking mech., 14 gauge stainless steel top, 20 gauge stainless steel front & end panels, 18 gauge stainless steel undershelf, 5" casters, NSF. Supply with the following:

1. 1-year warranty parts and labor
2. "Petite Elite" 30" high in lieu of standard height
3. Model JC Unit to include 14-gauge stainless steel "J" channel cord chase to keep cords for interconnected wired units (IWU) off the floor
4. Model FLP Filler Strips, for Elite systems
5. Model HD-32 Hinged doors for (2) openings Elite system
6. Model LD Locks, for doors for Elite system
7. Model FRMAD-28 Formica laminate with doors, for Elite systems
8. FEC to coordinate color selection with Architect

#### **4.36 ITEM 34 - MOBILE WARMING CABINETS – TWO (2) REQUIRED**

- A. Metro Model C589-SDS-U Dimensions: 74.75(h) x 29.13(w) x 32.63(d) C5™ 8 Series Controlled Temperature Holding Cabinet, mobile, full height, insulated, universal wire slides (17) 18" x 26" or (32) 12" x 20" x 2-1/2" pan capacity, solid Dutch doors, top mount digital

control, low temp alarm & memory recall, ducted heating system, thermostat 70° to 200°F temp, 3" OC (adjustable on 1-1/2" increments), 5" casters, 304 stainless steel, 120v/60/1-ph, 2000 watts, 16.7 amps, NEMA 5-20P, cULus, NSF, ENERGY STAR®. Supply each with the following:

1. 1-year warranty against manufacturing defects

#### **4.37 ITEM 35 - SOLID TOP UNIT – ONE (1) REQUIRED**

- A. Piper Products/Servolift Eastern Model 2-ST per drawing#6613 Dimensions: 36(h) x 32(w) x 28(d) Elite Utility Serving Counter, 32"L x 36"H, mobile modular design with interlocking mech., 14 gauge stainless steel top, 20 gauge stainless steel front & end panels, 18 gauge stainless steel undershelf, 5" casters, NSF. Supply with the following:
1. 1-year warranty parts and labor
  2. "Petite Elite" 30" high in lieu of standard height
  3. Model JC Unit to include 14-gauge stainless steel "J" channel cord chase to keep cords for interconnected wired units (IWU) off the floor
  4. Model FLP Filler Strips, for Elite systems
  5. Model HD-32 Hinged doors for (2) openings Elite system
  6. Model LD Locks, for doors for Elite system
  7. Model FRMAD-32 Formica laminate with doors, for Elite systems
  8. FEC to coordinate color selection with Architect
  9. Model SRTS-32 Tray slide for Elite system, 12" solid ribbed, heavy gauge stainless steel, for (2) openings - 32"W
  10. Model ME Mitered end for tray slide for Elite system

#### **4.38 ITEM 36 - BREATH PROTECTOR TWO (2) REQUIRED**

- A. Premier Metal & Glass Model TM2S-A -Per drawing #38834 1" OD Adjustable Choice Food Shield With Top Shelf, Rear Supports And Slanted Front Support; 3/8" Clear Tempered Glass With Polished Edges And Radius Corners; Both End Panels Included (Fixed); Narrow Surface Mounting Option (644/1); No Heat/Light Included; Brushed Stainless Finish; Approx. 42" Cl Length; Approx. 136 Lbs. Ea. (2 End Supports) To Protect Items# 32 & 56.
1. FEC to ship to Piper for factory installation.

#### **4.39 ITEM 37 - BREATH PROTECTOR - TWO (2) REQUIRED**

- A. Premier Metal & Glass Model TMT2S-A – Per Drawing # 38834 1" OD Adjustable Choice Two-Tier Food Shield With Top Shelf, Rear Supports And Slanted Front Support; 3/8" Clear Tempered Glass With Polished Edges And Radius Corners; Both End Panels Included (Fixed); Narrow Surface Mounting Option (644/1); No Heat/Light Included; Brushed Stainless Finish; Approx. 30" Cl Length; Approx. 110 Lbs. Ea. (2 End Supports) To Protect Item 38 Frost Top Height Not To Exceed 21-3/8". To protect item# 38.
1. FEC to ship to Piper for factory installation.

#### **4.40 ITEM 38 - FROST TOP – TWO (2) REQUIRED**

- A. Hatco Model FTB-2 Dimensions: 17.25(h) x 39(w) x 28.94(d) Drop-In Frost Top, 39"L, accommodates (2) full size sheet pans, lighted on/off rocker switch, electronic adjustable temperature control can be mounted to either side of condensing unit or remotely up to 4' from unit, auto-defrost, 1" NPT drain, self-contained refrigeration, R513a, cULus, Made in USA. Provide each with the following:
1. NOTE: Includes 24/7 parts & service assistance, call 800-558-0607
  2. One-year parts & labor warranty
  3. CE mark not available
  4. 120v/60/1-ph, 804 watts, 6.7 amps, NEMA 5-15P, 1/4 HP (domestic voltage)
  5. FEC to ship units to Piper for factory installation

#### **4.41 ITEM 39 - SOLID TOP UNIT - ONE (1) REQUIRED**

- A. Piper Products/Servolift Eastern Model 4-ST-MOD Per drawing # 6613 Dimensions: 36(h) x 60(w) x 28(d) Elite Utility Serving Counter, 60"L x 36"H, mobile modular design with interlocking mech., 14 gauge stainless steel top, 20 gauge stainless steel front & end panels, 18 gauge

stainless steel undershelf, 5" casters, NSF, MODIFIED TO 30"D. Supply with the following:

1. 1-year warranty parts and labor
2. "Petite Elite" 30" high in lieu of standard height
3. Model JC Unit to include 14-gauge stainless steel "J" channel cord chase to keep cords for interconnected wired units (IWU) off the floor
4. Model FLP Filler Strips, for Elite systems
5. Model HD-60 Hinged doors for (4) openings Elite system
6. Model LD Locks, for doors for Elite system
7. Model FRMAD-60 Formica laminate with doors, for Elite systems
8. FEC to coordinate color selection with Architect
9. Model SCB-8-60 Cutting Board for Elite system, 8", for (4) openings - 60"W, stainless
10. Model SRTS-60 Trayslide for Elite system, 12" solid ribbed, heavy gauge stainless steel, for (4) openings - 60"W
11. Model ME Mitered end for trayslide for Elite system
12. Model INSTALL PACKAGE, INSTALL PACKAGE - to include cut-out in the counter top, install for the drop-in provided by FEC electrical hook-up, reinforced top, and louvered panels if required. \*\*\*Drop-in to be provided by FEC\*\*\*Piper to ensure all controls for all drop ins are accessible by operator. Any controls located behind an access panel, access panel to be hinged
13. Premier item 38 Hatco FTB-2 to be provided by FEC and sent to Piper for install.
14. Model PG MOUNT Mounting of other manufacturer's sneeze guard. Premier item 37 slant style fully adjustable double tier guard to be provided by FEC and sent to Piper for install.

#### **4.42 ITEM 40 - SOLID TOP UNIT – ONE (1) REQUIRED**

- A. Piper Products/Servolift Eastern Model 2-CR Per drawing #6613 Dimensions: 36(h) x 28(w) x 28(d) Elite Corner Serving Counter, 28"L x 36"H, mobile modular design with interlocking mech., 14 gauge stainless steel top, 20 gauge stainless steel front & end panels, 18 gauge stainless steel undershelf, 5" casters, NSF. Supply with the following:
1. 1-year warranty parts and labor
  2. "Petite Elite" 30" high in lieu of standard height
  3. Model JC Unit to include 14-gauge stainless steel "J" channel cord chase to keep cords for interconnected wired units (IWU) off the floor
  4. Model FLP Filler Strips, for Elite systems
  5. Model HD-32 Hinged doors for (2) openings Elite system
  6. Model LD Locks, for doors for Elite system
  7. Model FRMAD-28 Formica laminate with doors, for Elite systems
  8. FEC to coordinate color selection with Architect

#### **4.43 ITEM 41 - SOLID TOP UNIT – ONE (1) REQUIRED**

- A. Piper Products/Servolift Eastern Model 2-ST per drawing#6613 Dimensions: 36(h) x 32(w) x 28(d) Elite Utility Serving Counter, 32"L x 36"H, mobile modular design with interlocking mech., 14 gauge stainless steel top, 20 gauge stainless steel front & end panels, 18 gauge stainless steel undershelf, 5" casters, NSF. Supply with the following:
1. 1-year warranty parts and labor
  2. "Petite Elite" 30" high in lieu of standard height
  3. Model JC Unit to include 14-gauge stainless steel "J" channel cord chase to keep cords for interconnected wired units (IWU) off the floor
  4. Model FLP Filler Strips, for Elite systems
  5. Model FRMAD-32 Formica laminate without doors, for Elite systems
  6. Model SRTS-32 Trayslide for Elite system, 12" solid ribbed, heavy gauge stainless steel, for (2) openings - 32"W
  7. Model ME Mitered end for tray slide for Elite system
  8. FEC to coordinate color selection with Architect.

#### **4.44 ITEM 42 - ICE CREAM MERCHANDISER - TWO (2) REQUIRED**

- A. Piper Products/Servolift Eastern Model 2-ICF Per drawing# 6613 Dimensions: 36(h) x 32(w) x 28(d) Elite Serving Counter, Ice Cream, 32"W x 36"H, mobile modular, (2) removable hinged stainless steel lids, 6 gallon capacity, louvered ventilation panels, interlocking mechanism, stainless steel top, legs & body panels, 5" swivel plate casters (2 with brakes), 1/5 hp, UL, NSF. Provide each with the following:
1. 1-year warranty parts and labor
  2. "Petite Elite" 30" high in lieu of standard height
  3. 115v/60/1ph, 1.8 amps, cord with NEMA 5-15P
  4. Locking device (lock not included)
  5. Transparent Lid
  6. Model JC Unit to include 14-gauge stainless steel "J" channel cord chase to keep cords for interconnected wired units (IWU) off the floor
  7. Model FLP Filler Strips, for Elite systems
  8. Model FRMA-32 Formica laminate without doors, for Elite systems
  9. Model SRTS-32 Trayslide for Elite system, 12" solid ribbed, heavy gauge stainless steel, for (2) openings - 32"W
  10. FEC to coordinate color selection with Architect

#### **4.45 ITEM 43 - SOLID TOP UNIT – ONE (1) REQUIRED**

- A. Piper Products/Servolift Eastern Model 2-ST per drawing #6613 Dimensions: 36(h) x 32(w) x 28(d) Elite Utility Serving Counter, 32"L x 36"H, mobile modular design with interlocking mech., 14-gauge stainless steel top, 20 gauge stainless steel front & end panels, 18 gauge stainless steel undershelf, 5" casters, NSF. Supply with the following:
1. 1-year warranty parts and labor
  2. "Petite Elite" 30" high in lieu of standard height
  3. Model JC Unit to include 14-gauge stainless steel "J" channel cord chase to keep cords for interconnected wired units (IWU) off the floor
  4. Model FLP Filler Strips, for Elite systems
  5. Model FRMAD-32 Formica laminate without doors, for Elite systems
  6. Model SRTS-32 Trayslide for Elite system, 12" solid ribbed, heavy gauge stainless steel, for (2) openings - 32"W
  7. FEC to coordinate color selection with Architect

#### **4.46 ITEM 44 - CASHIER STATION-ONE (1) REQUIRED**

- A. Piper Products/Servolift Eastern Model 2-CD per drawing # 6613 Dimensions: 36(h) x 30(w) x 28(d) Elite Cashier's Serving Counter, 30"L x 36"H, mobile modular design with interlocking mech., 14 gauge stainless steel top with register cord hole, locking drawer, 20 gauge stainless steel front & end panels, 5" casters. Supply with the following:
1. 1-year warranty parts and labor
  2. Model DOUT Duplex Outlet, 120V for Elite system
  3. Model JC Unit to include 14-gauge stainless steel "J" channel cord chase to keep cords for interconnected wired units (IWU) off the floor
  4. Model FLP Filler Strips, for Elite systems
  5. Model TFR Tubular foot rest-cashier unit, Elite systems
  6. Model FRMA-30 Formica laminate without doors, for Elite systems
  7. Model SRTS-30 Tray slide for Elite system, 12" solid ribbed, heavy gauge stainless steel, for (2) openings - 30"W
  8. Model TURN DOWN Modified turn down with special interlocks to connect 2 different height counters.
  9. FEC to coordinate color selections with Architect

**4.47 ITEM 45 - SPARE NUMBER**

**4.48 ITEM 46 - CASH REGISTERS (EXISTING ITEM #E7 - RELOCATE) – TWO (2)**

**4.49 ITEM 47 - CASHIERS STATION – ONE (1) REQUIRED**

- A. Piper Products/Servolift Eastern Model 2-CD Per drawing # 6613 Dimensions: 36(h) x 30(w) x 28(d) Elite Cashier's Serving Counter, 30"L x 36"H, mobile modular design with interlocking mech., 14 gauge stainless steel top with register cord hole, locking drawer, 20 gauge stainless steel front & end panels, 5" casters. Supply with the following:
1. 1-year warranty parts and labor
  2. Model DOUT Duplex Outlet, 120V for Elite system
  3. Model JC Unit to include 14-gauge stainless steel "J" channel cord chase to keep cords for interconnected wired units (IWU) off the floor
  4. Model FLP Filler Strips, for Elite systems
  5. Model TFR Tubular foot rest-cashier unit, Elite systems
  6. Model FRMA-30 Formica laminate without doors, for Elite systems
  7. Model SRTS-30 Tray slide for Elite system, 12" solid ribbed, heavy gauge stainless steel, for (2) openings - 30"W
  8. Model TURN DOWN Modified turn down with special interlocks to connect 2 different height counters.
  9. FEC to coordinate color selection with Architect

**4.50 ITEM 48 - SOLID TOP UNIT – ONE (1) REQUIRED**

- A. Piper Products/Servolift Eastern Model 2-ST Per drawing # 6613 Dimensions: 36(h) x 32(w) x 28(d) Elite Utility Serving Counter, 32"L x 36"H, mobile modular design with interlocking mech., 14-gauge stainless steel top, 20 gauge stainless steel front & end panels, 18 gauge stainless steel undershelf, 5" casters, NSF. Supply with the following:
1. 1-year warranty parts and labor
  2. "Petite Elite" 30" high in lieu of standard height
  3. Model JC Unit to include 14-gauge stainless steel "J" channel cord chase to keep cords for interconnected wired units (IWU) off the floor
  4. Model FLP Filler Strips, for Elite systems
  5. Model FRMAD-32 Formica laminate without doors, for Elite systems
  6. Model SRTS-32 Tray slide for Elite system, 12" solid ribbed, heavy gauge stainless steel, for (2) openings - 32"W
  7. FEC to coordinate color selection with Architect

**4.51 ITEM 49 - SOLID TOP UNIT – ONE (1) REQUIRED**

- A. Piper Products/Servolift Eastern Model 2-ST per drawing # 6613 Dimensions: 36(h) x 32(w) x 28(d) Elite Utility Serving Counter, 32"L x 36"H, mobile modular design with interlocking mech., 14-gauge stainless steel top, 20 gauge stainless steel front & end panels, 18 gauge stainless steel undershelf, 5" casters, NSF. Supply with the following:
1. 1-year warranty parts and labor
  2. "Petite Elite" 30" high in lieu of standard height
  3. Model JC Unit to include 14-gauge stainless steel "J" channel cord chase to keep cords for interconnected wired units (IWU) off the floor
  4. Model FLP Filler Strips, for Elite systems
  5. Model FRMAD-32 Formica laminate without doors, for Elite systems
  6. Model SRTS-32 Tray slide for Elite system, 12" solid ribbed, heavy gauge stainless steel, for (2) openings - 32"W
  7. Model ME Mitered end for tray slide for Elite system
  8. FEC to coordinate color selection with Architect

**4.52 ITEM 50 - SOLID TOP UNIT – ONE (1) REQUIRED**

- A. Piper Products/Servolift Eastern Model 2-CR per drawing # 6613 Dimensions: 36(h) x 28(w) x 28(d) Elite Corner Serving Counter, 28"L x 36"H, mobile modular design with interlocking mech., 14-gauge stainless steel top, 20 gauge stainless steel front & end panels, 18 gauge



stainless steel undershelf, 5" casters, NSF. Supply with the following:

1. 1-year warranty parts and labor
2. "Petite Elite" 30" high in lieu of standard height
3. Model JC Unit to include 14-gauge stainless steel "J" channel cord chase to keep cords for interconnected wired units (IWU) off the floor
4. Model FLP Filler Strips, for Elite systems
5. Model HD-32 Hinged doors for (2) openings Elite system
6. Model LD Locks, for doors for Elite system
7. Model FRMAD-28 Formica laminate with doors, for Elite systems
8. FEC to coordinate color selection with Architect

#### **4.53 ITEM 51 - SOLID TOP UNIT – ONE (1) REQUIRED**

- A. Piper Products/Servolift Eastern Model 4-ST-MOD per drawing #6613 Dimensions: 36(h) x 60(w) x 28(d) Elite Utility Serving Counter, 60"L x 36"H, mobile modular design with interlocking mech., 14 gauge stainless steel top, 20 gauge stainless steel front & end panels, 18 gauge stainless steel undershelf, 5" casters, NSF, MODIFIED TO 30"D. Supply with the following:
1. 1-year warranty parts and labor
  2. "Petite Elite" 30" high in lieu of standard height
  3. Model JC Unit to include 14-gauge stainless steel "J" channel cord chase to keep cords for interconnected wired units (IWU) off the floor
  4. Model FLP Filler Strips, for Elite systems
  5. Model HD-60 Hinged doors for (4) openings Elite system
  6. Model LD Locks, for doors for Elite system
  7. Model FRMAD-60 Formica laminate with doors, for Elite systems
  8. Model SCB-8-60 Cutting Board for Elite system, 8", for (4) openings - 60"W, stainless
  9. Model SRTS-60 Tray slide for Elite system, 12" solid ribbed, heavy gauge stainless steel, for (4) openings - 60"W
  10. Model ME Mitered end for tray slide for Elite system
  11. Model INSTALL PACKAGE INSTALL PACKAGE - to include cut-out in the counter top, install for the drop-in provided by others, electrical hook-up, reinforced top, and louvered panels if required. \*\*\*Drop-in to be provided by FEC\*\*\*Piper to ensure all controls for drop ins are accessible by operator. Any controls located behind an access panel, panel to be hinged.
  12. Premier item 38 Hatco FTB-2 to be provided by FEC and sent to Piper for install.
  13. Model PG MOUNT Mounting of other manufacturer's sneeze guard.
  14. Premier item 37 slant style fully adjustable double tier guard to be provided by FEC and sent to Piper for install.

#### **4.54 ITEM 52 - SOLID TOP UNIT – ONE (1) REQUIRED**

- A. Piper Products/Servolift Eastern Model 2-ST Per drawing #6613 Dimensions: 36(h) x 32(w) x 28(d) Elite Utility Serving Counter, 32"L x 36"H, mobile modular design with interlocking mech., 14-gauge stainless steel top, 20 gauge stainless steel front & end panels, 18 gauge stainless steel undershelf, 5" casters, NSF
1. 1-year warranty parts and labor
  2. "Petite Elite" 30" high in lieu of standard height
  3. Model JC Unit to include 14-gauge stainless steel "J" channel cord chase to keep cords for interconnected wired units (IWU) off the floor
  4. Model FLP Filler Strips, for Elite systems
  5. Model HD-32 Hinged doors for (2) openings Elite system
  6. Model LD Locks, for doors for Elite system
  7. Model FRMAD-32 Formica laminate with doors, for Elite systems
  8. Model SRTS-32 Tray slide for Elite system, 12" solid ribbed, heavy gauge stainless steel, for (2) openings - 32"W
  9. Model ME Mitered end for tray slide for Elite system

#### **4.55 ITEM 53 - TRAY LOWERATOR -TWO (2) REQUIRED**

- A. Piper Products/Servolift Eastern Model PT/1014MO Dimensions: 36.13(h) x 14.94(w) x 18.5(d) Mobile Tray Dispenser, solid bottom, self-leveling, single stack, holds (150) 10-3/4" x 15-1/8" trays, with corner bumpers, stainless steel all tubular frame, NSF. Provide each with the following:
1. 1-year warranty parts and labor
  2. Model -WB Wheel brakes (set of 2)
  3. FEC to verify tray size prior to ordering

#### **4.56 ITEM 54 - SPARE NUMBER**

#### **4.57 ITEM 55 - SOLID TOP UNIT – ONE (1) REQUIRED**

- A. Piper Products/Servolift Eastern Model 2-CR Per drawing #6613 Dimensions: 36(h) x 28(w) x 28(d) Elite Corner Serving Counter, 28"L x 36"H, mobile modular design with interlocking mech., 14 gauge stainless steel top, 20 gauge stainless steel front & end panels, 18 gauge stainless steel undershelf, 5" casters, NSF
1. 1-year warranty parts and labor
  2. "Petite Elite" 30" high in lieu of standard height
  3. Model JC Unit to include 14-gauge stainless steel "J" channel cord chase to keep cords for interconnected wired units (IWU) off the floor
  4. Model FLP Filler Strips, for Elite systems
  5. Model HD-32 Hinged doors for (2) openings Elite system
  6. Model LD Locks, for doors for Elite system
  7. Model FRMAD-28 Formica laminate with doors, for Elite systems
  8. FEC to coordinate color selection with Architect

#### **4.58 ITEM 56 - 4 WELL HOT FOOD UNIT – ONE (1) REQUIRED**

- A. Piper Products/Servolift Eastern Model 4-HF Dimensions: 36(h) x 60(w) x 28(d) Elite 500 Hot Food Unit, electric, 60"L x 36"H, (4) sealed wells with 1000w element with thermostatically controlled each, mobile, modular design with interlocking mechanism, 14 gauge stainless steel top, 20 gauge stainless steel front & end panels, 18 gauge stainless steel bottom shelf, manifold drains standard, 5" swivel plate casters (2 with brakes), 4kW, NSF, UL
1. 1-year warranty parts and labor
  2. 208v/60/1-ph, 19.2 amps, 4000 watts, NEMA 6-30P
  3. Manifold drains, standard
  4. Model JC Unit to include 14-gauge stainless steel "J" channel cord chase to keep cords for interconnected wired units (IWU) off the floor
  5. Model FLP Filler Strips, for Elite systems
  6. Model HD-60 Hinged doors for (4) openings Elite system
  7. Model LD Locks, for doors for Elite system
  8. Model FRMAD-60 Formica laminate with doors, for Elite systems
  9. Model SCB-8-60 Cutting Board for Elite system, 8", for (4) openings - 60"W, stainless
  10. Model SRTS-60 Tray slide for Elite system, 12" solid ribbed, heavy gauge stainless steel, for (4) openings - 60"W
  11. Model ME Mitered end for tray slide for Elite system
  12. Model PG MOUNT Mounting of other manufacturer's sneeze guard.
  13. Premier item 36 slant style fully adjustable guard to be provided by others and sent to Piper for install.
  14. Model TURN DOWN Modified turn down with special interlocks to connect 2 different height counters.

#### **4.59 ITEM 57 - POT/PAN DRYING RACK ONE LOT (1 LOT) REQUIRED**

- A. Four (4) each Metro shelves Model MQ2472G Dimensions: 72(w) x 24(d) MetroMax® Q™ Shelf, 72"W x 24"D, removable open grid polymer shelf mats on an epoxy coated steel frame with quick adjust corner releases, (4) wedge connectors, Microban® antimicrobial product protection, 600 lb. capacity per shelf, NSF

1. Model MX74UP Polymer trilobal post (compatible with MetroMax® i, MetroMax® 4, MetroMax® Q), 73-3/16"H, for use with stem casters, adjusts at 1" increments, corrosion proof all polymer construction with built in Microban® antimicrobial product protection
2. Model 5MPXGSA Stainless Steel Cart-Washable Stem Caster, swivel, flat polyurethane wheel tread, 300 lb. capacity. NSF listed (for use with all MetroMax posts & shelves)
3. Model 5MPBXGSA Stainless Steel Cart-Washable Stem Caster, brake, flat polyurethane wheel tread, 300 lb. capacity, NSF (for use with all MetroMax posts & shelves)
4. Model MERGH24S Easy-Grip Handle, 24", ergonomic design, fits 24"D mobile shelving, includes: (2) tri-lobal adapters, stainless steel, NSF (Compatible with MetroMax® i, MetroMax® Q, & MetroMax® 4).

#### **4.60 ITEM 58 - THREE BAY SINK - ONE (1) REQUIRED**

- A. Eagle Group Model FN2472-3-30-14/3 OR MARLO EQUAL Dimensions: 44.5(h) x 138(w) x 31(d) Spec-Master® FN Series Sink, three compartment, 138"W x 31"D, 14/304 stainless steel top, coved corners, 24" x 24" x 14" deep compartments, 30" drainboards on left & right, 9-1/2"H backsplash with 1" upturn & tile edge, (2) sets of 8" OC splash mount faucet holes, rolled edges on front & sides, includes 3-1/2" basket drains, stainless steel cross bracing on all sides, stainless steel legs & adjustable bullet feet, NSF. Supply with the following:
  1. 1 set Model E48 stainless steel apron, to cover sink bowls, 2 or 3 compartment
  2. Model 341190 Twist Handle Drain, with overflow, 2" NPS connection & overflow
  3. Model -OF Holes (3) for twist handle drain with overflow drain (drain not included), 3 compartment 412, 414 & 314 sinks
  4. Model -TB Twist bracket, per drain
  5. T&S Brass Model B-0133 EasyInstall Pre-Rinse Unit, wall mount mixing faucet with 8" adjustable centers, quarter-turn Eterna cartridges with spring checks, lever handles with color-coded indexes, 18" EasyInstall riser, 44" flexible stainless steel hose with heat-resistant gray handle & hold down ring, 1.15 GPM spray valve (B-0107), finger hook, polished chrome-plated brass faucet body, 1/2" NPT female inlets, CSA
  6. T&S Brass Model B-TEE-EZK EasyInstall Tee Assembly, chrome-plated
  7. T&S Brass Model B-0231 Sink Mixing Faucet, 12" swing nozzle, wall mounted, 8" centers on sink faucet with 1/2" IPS eccentric flanged female inlets, lever handles
  8. T&S Brass Model 5AFL12 Equip Add-On Faucet, 14-7/16" long, standard, cerama cartridges, lever handle, laminar outlet, includes: 12-1/8" swivel nozzle, 3/8" male NPT, 3/8" female NPT, ADA Compliant (for pre-rinse units)
  9. T&S Brass Model B-0109-01 Wall Bracket, 6"
  10. 1 set flanged feet for all legs

#### **4.61 ITEM 59 - HOSE REEL W/ CONTROL PANEL – ONE (1) REQUIRED**

- A. T&S Brass Model B-7243-C05 Hose Reel System, enclosed, 1/2" x 50' hose with stainless steel front trigger spray valve (with a 5/16" orifice), with ratcheting system & adjustable hose bumper, epoxy coated steel. Supply with the following:
  1. 1-year limited warranty for hose
  2. 2-year limited warranty for hose reel
  3. Fisher Model 1801 Reel Rinse Control Unit, valves, gauges and connections are completely enclosed within a stainless-steel cabinet, dual check backflow preventer, water hammer silencer, 90° panel lock, padlock hasp & finger latch, 1/2" NPT female inlets & outlets
  4. It shall be the responsibility of the FEC to place reel at a height that does not impede with operation at 3 bay sink or dish wash area.

#### **4.62 ITEM 60 - SOILED DISH TABLE W/PASS THRU – ONE (1) REQUIRED**

- A. Custom model by Marlo "L" shape as shown on drawing #20PS01 Approximately 120" x 88" X 30" Wide X 34" high 1 5/8" OD S/S legs with adjustable S/S flanged feet 16 gauge under shelf the length of table (except at item# 61). Under shelf to welded to legs 10" AFF. (excluding waste collector area) 14-gauge 304 S/S top with raised rolled edges. Top to be constructed of a 14-gauge 304 stainless steel with S/S channel edge construction. "C" channel bracing cylindrical gussets and mastic sound deadening. Fully weld in top item # 61 (Salvajor waste

collector) Install collector on table per manufactures guidelines. With 10" back splash at all wall locations. WITH PASS THROUGH OPEN ROLL DOWN DOOR 10" back splash at wall locations with a 2" off set at window Provide a step-up though ledge 16 gauge of the wall thickness and turn down Window frame to be provided and coordinated with coiling roll down door. FSC is required to provide approved roll down door cut sheet to Marlo/EMI at the time of order

#### **4.63 ITEM 61 - SCRAPER COLLECTOR – ONE (1) REQUIRED**

- A. Salvajor Model S914 Dimensions: 35.88(h) x 24.81(w) x 22.25(d) Scrap Collector™, scrapping, pre-flushing & collecting system (widely accepted in areas where disposers are restricted), NEMA 4 HYDROLOGIC® control panel with patented operator sensor, two water saving modes (timed run & auto start/stop), safety line disconnect, LCD readout, salvage basin & silverware trap, scrap basket, 3/4 HP corrosion-resistant pump, pump intake screen, stainless steel construction, UL, CSA, CE, NSF. Supply with the following:
  - 1. Collector top is to ship to the fabricator in advance of unit
  - 2. FEC to coordinate factory authorized start up
  - 3. 208v/60/3-ph, 3.2 amps

#### **4.64 ITEM 62 - VENT DUCT RISERS – TWO (2) REQUIRED**

- A. Custom model by Marlo size and shape as shown on drawing #20PS01 Approximately 4" x 16" with angle color for each riser 18gauge 304 stainless steel All seam to be continuously welded, ground and polished to eliminate any condensation. Vent stack shall run from vent cowl on the dish washer to 3" AFC. To be NSF approved

#### **4.65 ITEM 63 - DISHWASHER W/BOOSTER HEATER – ONE (1) REQUIRED**

- A. Hobart Model CL44EN-ADV+BUILDUP Dimensions: 68.5(h) x 44.75(w) x 31.25(d) Conveyor Dishwasher, Advansys model, single tank, (202) racks/hour, insulated hinged doors, .62 gallon/rack, stainless steel enclosure panels, microprocessor controls with low temperature & dirty water indicators, NSF Pot & Pan mode, programable de-lime notification, 30 kW stainless booster, energy recovery (DWER), automatic soil removal (ASR), drain water tempering kit, ENERGY STAR®, Free factory startup for installations within a 100 mile radius of a Hobart service office; installation beyond 100 miles will be charged at the quoted rate by the local Hobart service office. Supply with the following:
  - 1. Warranty - 1-Year parts, labor & travel time during normal working hours
  - 2. Model CL44EN-ADVELE0AX 208v/60/3-ph, electric heat only
  - 3. Model CL44EN-ADVHTE15K Electric tank heat 15kW
  - 4. Model CL44EN-ADVERH30K 30kW electric booster
  - 5. Model CL44EN-ADVDIRVER Verify direction of operation
  - 6. Model CL44EN-ADVHGTHTS Higher than standard
  - 7. Model CL44EN-ADVFTSTD Standard feet
  - 8. NOTE: For water over 3-grains of hardness, Hobart suggests adding a water softener.
  - 9. Model VNTHD/E-ADJ E-series vent hood domestic (adjustable)
  - 10. Model DISHRAK-PEG20 Peg rack
  - 11. Model DISHRAK-COM20 Combination rack
  - 12. Model BUNPAN-RACK Rack, bun pan
  - 13. Model PRESREG-1/20BR 1/2" brass pressure regulator (is standard with built-in booster heater models)
  - 14. Model 1/2INSHK-ABSRBR Water Shock Absorber Kit (2 required - 1 each incoming hot and cold-water lines)
  - 15. Model CLE/TBL-SWITCH Table limit switch CLE-Series
  - 16. flanged feet
  - 17. FEC to coordinate start up, start up to be preformed prior to demonstrations FEC to provide documentation of start up with close out documents

#### **4.66 ITEM 64 - POWER DRY UNITS – TWO (2) REQUIRED**

- A. San-Aire Industries Model PD-100-M Dimensions: 9.5(h) x 28(w) x 9.5(d) PowerDry™ Kitchenware Dryer, Electric, lighted on/off rocker switch, (2) 20" x 6" x 3/8" removable

aluminum filter, 826 CFM blower, adjustable air distribution louver, stainless steel housing, UL, CUL, NSF. Provide each with the following:

1. 120v/60/1, 4.33amps, 500w, cord with NEMA 5-15P
2. Model SMB-PD-100M Standard Wall Mount Bracket
3. FEC to mount per manufactures guidelines. Must not interfere with sheet pan rack or dish machine disconnects

#### **4.67 ITEM 65 - CLEAN DISH TABLE – ONE (1) REQUIRED**

- A. Custom model by Marlo size and shape as shown on drawing #20PS01 Approximately 102" long X 30" Wide X 34" high 1 5/8" OD S/S legs with adjustable S/S flanged feet 16 gauge under shelf the length of table. Under shelf to welded to legs 10" AFF. 14-gauge 304 S/S top with raised rolled edges. Top to be constructed of a 14-gauge 304 stainless steel with S/S channel edge construction. "C" channel bracing cylindrical gussets and mastic sound deadening. 10" Back Splash at 45 degree & ¾ turn down with enclosed back and ends. Provide cut out for dish machine table limit switch provided by this contractor, to be NSF & UL approved.

#### **4.68 ITEM 66 - UTILITY CART – ONE (1) REQUIRED**

- A. Piper Products/Servolift Eastern Model 6-UCM-3 Dimensions: 39.25(h) x 39.25(w) x 23(d) Utility/Delivery Cart, (3) shelf medium, 600 lb. capacity, stainless steel construction, NSF. Supply with the following:
  1. 1-year warranty parts and labor from date of purchase

#### **4.69 EXISTING EQUIPMENT**

- A. It is the responsibility of this contractor to fully remove all existing foodservice equipment from the old Elementary School Kitchen, this includes exhaust hoods and walk-in freezer & refrigeration systems (electric, plumbing & HVAC disconnections by related trades). Refer to 3.3 of this specification for existing equipment requirements.

#### **4.70 REUSED EXISTING EQUIPMENT:**

- A. This Kitchen Equipment Contractor (KEC) shall be responsible for identifying, tagging and/or removing all existing equipment, which will be reused. Verify and coordinate specific equipment with these plans and specifications, and the Owner. This shall include items existing, and the associated work necessary, at the time of the signing of the Contract for the Foodservice Equipment section; and shall not include any item(s) added, changed, or damaged (by other than the Kitchen Equipment Contractor (KEC)) after the signing; except to the extent of work which would have been included with the original existing item(s).
- B. Remove from existing locations, clean and renovate as noted below, store and re-install existing equipment to be reused, in the new locations as shown on plans; ready for utility connections, as appropriate. Existing equipment to be reused, with utility connections, shall be removed after disconnection as noted in below paragraph.
- C. Do work in cooperation with Owner, so that normal functioning of services is minimally interrupted. Coordinate all removal and replacement scheduling with the Construction Scheduling Manager (or similar responsible party), to ensure adequate time to complete the necessary work. If adequate time to properly relocate and reset the existing items and complete all cleaning and repair will not be available, due to continuing use of the existing item(s), or the allotted construction time; contact the Owner and obtain a written agreement as to what work is to be deleted or delayed; such as cleaning, repainting, or repairs.
- D. All surface dirt, grease, oil, food residues, ingredients, extraneous matter and other soiling materials shall be removed in order to obtain minimum acceptable sanitation and food service standards. Thorough final rinsing of all cleaning agents shall be at a minimum temperature of 180 degrees F where possible without damage to equipment or controls. Otherwise, use USDA approved cleaning agents and/or cleaning agents, which are acceptable for use with commercial food service equipment. This shall include all exterior surfaces of the existing equipment to be reused, and interior work surfaces such as inside oven compartments, fryer vats, ware washers, etc.

- E. All painted items with major paint blemishes shall be sanded, primed, and repainted to match the original color and type paint. Primer and paint shall be of a type approved for use with commercial food service equipment. All controls, lights, view windows, non-painted parts, etc. shall be protected as recommended by the Manufacturer. Minor paint blemishes shall be touched-up in a professional manner. This work shall be included in the Bid Submittal, as a separate line cost, at the end of the Bid Submittal.
- F. Replace or repair minor broken parts to produce a cleanable and functional item, where possible. Repairs and/or parts shall be for minor required items such as control knobs, handles, pilot lamps, belts, oil changes, minor adjustments and recalibrations, etc. This shall not include addition or replacement of any wearing components such as cutters, blades, etc.; or any accessory components such as mixer beaters, hooks, whips, etc., except for presently existing accessory components which are broken and nonfunctional, or as noted in the itemized specifications.

#### **4.71 EXISTING CONDITIONS:**

- A. It is the responsibility of this contractor to fully review the existing conditions of the building and the new kitchen. This contractor shall be familiar with access to the kitchen location, including equipment access by elevators, stairwells, corridors, openings, including access around the exterior of the building for a crane or hoisting equipment (if required). It will be the responsibility of this contractor to coordinate equipment installation with the owner, CM, GC, etc....

#### **4.72 PLUMBING OF EQUIPMENT**

- A. The plumbing and food service equipment contractors are to comply with 1370-a and 1110, Subpart 67-4 of Title 10 (Health) of the Official Compilation of Codes, Rules and Regulations of the State of New York. All outlet fixtures used for drinking or cooking shall be tested by Owner prior to being put into service. All test results in exceedance of the action level shall require the fixture to be replaced until satisfactory test results are obtained at no additional cost to Owner."

### **PART 1 DETAILS OF CONSTRUCTION**

#### **5.01 DETAIL DRAWINGS**

- A. The following details are a part of these specifications and shall be referred to for additional design requirements: None

**END OF SECTION**

**SECTION 11 6143  
STAGE CURTAINS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Stage curtain fabrics.
- B. Linings.
- C. Stage curtain track support systems.

**1.02 RELATED REQUIREMENTS**

- A. Section 26 0583 - Wiring Connections: Power to disconnect.

**1.03 PRICE AND PAYMENT PROCEDURES**

- A. Alternates: See Section 01 2300 - Alternates, as Stage Curtain is part of Alternate as shown on drawings.

**1.04 REFERENCE STANDARDS**

- A. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware 2016a.
- B. ASTM A653/A653M - Standard Specification for Steel Sheet, Zinc-Coated (Galvanized) or Zinc-Iron Alloy-Coated (Galvannealed) by the Hot-Dip Process 2020.
- C. FM (AG) - FM Approval Guide current edition.
- D. ITS (DIR) - Directory of Listed Products current edition.
- E. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- F. NFPA 701 - Standard Methods of Fire Tests for Flame Propagation of Textiles and Films 2019.
- G. UL (DIR) - Online Certifications Directory Current Edition.

**1.05 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide for each type of product as follows:
  - 1. Stage Curtains: Provide information on type of curtain, weight, location for use on project, and type of flame retardancy.
  - 2. Tracks: Provide capacity of each curtain track to support curtain weight and control curtain operation.
- C. Shop Drawings: Indicate installation information for components not dimensioned or detailed in product data.
  - 1. Submit floor plans, elevations, sections, attachment details of curtains and operating clearances.
  - 2. Submit fabric assembly and support details.
  - 3. Submit attachment locations for backdrop curtain and proscenium curtain, and corresponding loads imposed on structure.
  - 4. Submit locations of equipment components, switches, and controls; identify between manufacturer installed and field installed wiring.
  - 5. Submit wiring diagrams for power, signal, and control wiring.
- D. Selection Samples: Submit color chart for each type of stage curtain indicated that includes full range of colors, textures, and patterns available, along with 12 inch square fabric sample, in any color, of each fabric type and seam.
- E. Certificate: Certify that products of this section meet or exceed specified requirements.
- F. Delegated Design Data: Indicate stage curtain system structural attachments, including analysis data signed and sealed by qualified designer responsible for their preparation.
- G. Designer's Qualification Statement.

- H. Manufacturer's Qualification Statement.
- I. Warranty Documentation: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.
- J. Maintenance Materials: Furnish the following for Owner's use in maintenance of project:
  - 1. See Section 01 6000 - Product Requirements, for additional provisions.

#### **1.06 QUALITY ASSURANCE**

- A. Designer Qualifications: Perform design of track support system under direct supervision of a Professional Engineer experienced in design of this type of work and licensed in the State in which the Project is located.
- B. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than three years of documented experience.
- C. Installer Qualifications: Company specializing in performing work of the type specified and with minimum three years of documented experience.

#### **1.07 FIELD CONDITIONS**

- A. Ambient Conditions: Do not install stage curtains until spaces are fully enclosed and watertight, and the following:
  - 1. Wet work in adjacent areas is complete and surfaces are dry.
  - 2. Work at and above ceiling level has been completed.
  - 3. Ambient temperatures and humidity of adjacent areas are maintained at levels when occupied for intended use.
- B. Field Measurements: Confirm supporting structural element locations and adjacent construction for stage curtains and rigging, and complete field measurements prior to fabrication and include these dimensions on shop drawings.

#### **1.08 WARRANTY**

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.
- B. Correct defective Work within a two year period after Date of Substantial Completion.
  - 1. Defective Work includes, but is not limited to, stage curtain support and rigging that is not operating properly.

### **PART 2 PRODUCTS**

#### **2.01 MANUFACTURERS**

- A. Stage Curtain Fabrics:
  - 1. Beck Studios Inc: [www.beckstudios.net/#sle](http://www.beckstudios.net/#sle).
  - 2. LuXout Stage Curtains: [www.luxout.com/#sle](http://www.luxout.com/#sle).
  - 3. Substitutions: See Section 01 6000 - Product Requirements.
- B. Stage Curtain Track Systems:
  - 1. Beck Studios Inc; [ ]: [www.beckstudios.net/#sle](http://www.beckstudios.net/#sle).

#### **2.02 PERFORMANCE REQUIREMENTS**

- A. Stage Curtain Systems Design: Engage qualified designer to develop design of stage curtain system, including comprehensive project specific analysis of necessary structural system attachments in compliance with performance requirements.
- B. Structural Performance: Ensure attachment of stage curtain system to structure withstands material weight and operational loads applicable for this project and in compliance with local building codes and authorities having jurisdiction.
  - 1. Design Loads: Weight of stage curtains and track system.
- C. Fire-Test Characteristics: Stage curtain fabrics in compliance with NFPA 701 flame propagation fire test requirements conducted by authorized testing agency, listed by UL (DIR), ITS (DIR), or FM (AG) and acceptable to authorities having jurisdiction.



1. Permanently attach label to fabric of each curtain assembly indicating fabric treatment as follows:
- D. Electrical Components: Devices that are listed and labeled in compliance with NFPA 70, by a qualified testing agency, and marked for designated application.

### **2.03 STAGE CURTAIN FABRICS**

- A. Provide curtains of matching fabric and color from single dye lot, and when size and quantity of curtains exceeds maximum dye lot size, provide curtain or adjacent pair of curtains from only one dye lot, and arrange curtain dye lots to minimize exposure of any differences.
- B. Type B - Polyester Velour: Weighing at least 22 ounces/linear yard, napped fabric of 100 percent polyester with minimum pile height of 75 mils, 0.075 inch and minimum width of 62 inch.
  1. Application: curtains.
  2. Color: As selected by Architect from manufacturer's full range.
  3. Texture: As selected by Architect from manufacturer's full range.
  4. Pattern: As selected by Architect from manufacturer's full range.
  5. Products:
    - a. Fred Krieger & Company; IFR Prism Velour 22 oz: [www.fredkriegerfabrics.com/#sle](http://www.fredkriegerfabrics.com/#sle).
    - b. Substitutions: See Section 01 6000 - Product Requirements.

### **2.04 LININGS**

- A. Type LB - Polyester Lining: Weighing at least 12 ounces/linear yard, 100 percent polyester fabric and 60 inch minimum width.
  1. Color: As selected by Architect from manufacturer's full range.
  2. Products:
    - a. Fred Krieger & Company; IFR Richmond Blackout: [www.fredkriegerfabrics.com/#sle](http://www.fredkriegerfabrics.com/#sle).
    - b. Substitutions: See Section 01 6000 - Product Requirements.

### **2.05 CURTAIN TRACK**

- A. Steel Track: Commercial quality, roll-formed, galvanized steel sheet, ASTM A653/A653M, with G60 coating designation; with continuous bottom slot and each half of track in single continuous piece; black paint finish; including support and operation accessories.
  1. Thickness: As recommended by manufacturer for curtain loads and operation.
    - a. Medium-Duty: 16 gauge, 0.0598 inch minimum thickness.
  2. Products:
    - a. Fred Krieger & Company; 100 Straight Track, Heavy-Duty: [www.fredkriegerfabrics.com/#sle](http://www.fredkriegerfabrics.com/#sle).
    - b. Substitutions: See Section 01 6000 - Product Requirements.
- B. Curtain Rails: Provide single or double curtain capacity as indicated on drawings, and end stops.
- C. Operation:
  1. Manual Walk-Along Operation: Curtain track without a cord, cable, pulleys, or floor pulley; must walk with curtain to open and close.
- D. Track System: Provide heavy-duty curtain track with components as recommended by manufacturer for loads and operation, including track end stops.
  1. Carriers: Standard plated-steel carriers with a pair of nylon tired ball-bearing wheels riveted parallel to body, and equip carriers with rubber or neoprene bumpers to reduce noise and plated-steel swivel eye and trim chain for attaching curtain snap or S-hook, and required number of curtain carriers for track length and curtain fabrication.
    - a. Master Curtain Carriers: One plated-steel master carrier for each leading curtain edge, with two pairs of nylon tired ball-bearing wheels and with two line guides per carrier.
  2. Pulleys: One dead-end, single-wheel pulley; one live-end, double-wheel pulley; and one adjustable pulley to maintain proper tension on operating line; each with molded-nylon-tired ball-bearing sheaves enclosed in steel housings; pulleys with steel housing finished

to match track and with bracket for securing off-stage end of curtain.

## **2.06 FABRICATION - CURTAINS**

- A. General: Provide vertical seams unless otherwise indicated, locate vertical seams so they do not fall on faces of pleats, and only use fabric that is cut greater than half the width of fabric.
- B. Vertical and Top Hems: Machine sew hems as follows, unless otherwise indicated:
  - 1. Vertical Hems: Fabricate at least 2 inch wide, and at least 4 inch wide at borders, valances, teasers, and tormentors with at least 1 inch tuck and without visible selvedge material from front of curtain; sew open ends of hems closed.
  - 2. Turnbacks: Fabricate leading-edge and trailing-edge turnbacks for traveler curtains by folding back at least 12 inch of face fabric, with at least 1 inch tuck, and vertically secured by sewing.
  - 3. Top Hems: Fabricate by double-stitching 3-1/2 inch wide, heavy jute or laminated synthetic webbing to top edge at back side of curtain with at least 2 inch of face fabric turned under.
- C. Fullness:
  - 1. 50 Percent Fullness: Provide this fullness, exclusive of turnbacks and hems, and spaced at 12 inch on center along top hem reinforcement as follows:
    - a. Sewing additional material into 3 inch double-stitched, flat, box pleats.
- D. Grommets:
  - 1. Black Colored Curtains: No. 3 brass, No. 4 brass, or aluminum grommets with black finish.
- E. Bottom Hems: Machine sew hems as follows, unless otherwise indicated:

## **2.07 ACCESSORIES**

- A. Snap Hooks: Manufacturer's standard heavy-duty snap hooks, sewn into top edge of curtain.
- B. Tie Lines: No. 4 or No. 4-1/2 cord or braided soft cotton tape, colored to best match curtain; at least 5/8 inch wide by 36 inch long and threaded through grommets.
- C. Battens: Fabricate using steel pipe and minimize the number of joints; connect pipe at joints using 18 inch long internal splice sleeve secured with four flush rivets, plug welds, threaded couplings, or equally strong method.
- D. Support, Clamps, and Anchors: Galvanized after fabrication sheet steel, Class B in accordance with ASTM A153/A153M; manufacturer's standard thickness.
- E. Individual Curtain Bottom Weights: Curtain manufacturer's standard segmented weights in compliance with requirements for curtain type and location.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Examine areas and conditions, with installer present, for compliance with requirements for supporting structural members, blocking, clearances, installation tolerances, and other conditions that may impact performance of stage curtain assembly.
- B. Examine placement and condition of inserts, clips, blocking, or other supports installed by others and for use in supporting track and battens of stage curtain assembly.
- C. Proceed with installation only after unsatisfactory conditions have been corrected.

### **3.02 INSTALLATION, GENERAL**

- A. Install stage curtain assembly in accordance with curtain and track manufacturers written instructions.

### **3.03 INSTALLATION - CURTAIN**

- A. Track Hung: Secure curtains to track carriers with S-hooks.

### **3.04 INSTALLATION - BATTENS**

- A. Install battens by suspending at heights as indicated with trim and supports spaced as required to support loads; do not exceed 10 feet between supports.
  - 1. Cable Trim and Support:
    - a. Fasten cables securely to either structure or to inserts, eye screws, or other applicable devices that are appropriate for substrate and not subject to deterioration or failure with time or elevated temperatures.
  - 2. Chain Support: Secure chain as required for application with load-rated terminations.

### **3.05 INSTALLATION - TRACK**

- A. Mounting of Track Assembly:
  - 1. Ceiling Mounted: Provide ceiling supports for mounting track direct to ceiling structure and within intervals indicated in manufacturer's written instructions for on center spacing.
- B. Track Support Spacing: Comply with manufacturer's recommendations for applied loads, and not to exceed the following dimensions between track supports:
  - 1. Medium-Duty Track: 4 feet, maximum.
- C. Install track for center-parting curtains with at least 24 inch overlap of track sections at center-line, and supported with track lap clamps.

### **3.06 CLOSEOUT ACTIVITIES**

- A. See Section 01 7800 - Closeout Submittals, for closeout submittals.
- B. Demonstrate proper operation of equipment to Owner's designated representative.
- C. Demonstration: Demonstrate operation of system to Owner's personnel.
  - 1. Use operation and maintenance data as reference during demonstration.
  - 2. Briefly describe function, operation, and maintenance of each component.
- D. Training: Train Owner's personnel on operation and maintenance of system.
  - 1. Use operation and maintenance manual as training reference, supplemented with additional training materials as required.
  - 2. Provide minimum of two hours of training.
  - 3. Location: At project site.

### **3.07 PROTECTION**

- A. Protect installed stage curtain assembly from subsequent construction operations until Date of Substantial Completion.

**END OF SECTION**

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**SECTION 11 6623  
GYMNASIUM EQUIPMENT**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Basketball backboards, goals, and support framing.
- B. Scoreboard.
- C. Shot Clock.
- D. Floor anchors for tensioned elements.
- E. Floor sleeves for net and goal posts.
- F. Wall mounted protection pads.
- G. Gym divider curtains.
- H. Volleyball nets and posts.

**1.02 RELATED REQUIREMENTS**

- A. Section 03 3000 - Cast-in-Place Concrete: Concrete floor slab to receive floor sleeves and anchors.
- B. Section 05 1200 - Structural Steel Framing: Structural members supporting basketball systems.
- C. Section 05 5000 - Metal Fabrications: Secondary structural members supporting gymnasium equipment.
- D. Section 09 6466 - Wood Athletic Flooring: Gymnasium flooring.
- E. Section 26 0583 - Wiring Connections.

**1.03 REFERENCE STANDARDS**

- A. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2021a.
- B. AWS B2.1/B2.1M - Specification for Welding Procedure and Performance Qualification 2014 (Amended 2015).
- C. AWS D1.1/D1.1M - Structural Welding Code - Steel 2020, with Errata (2021).
- D. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- E. NFPA 101 - Life Safety Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- F. NFPA 286 - Standard Methods of Fire Tests for Evaluating Contribution of Wall and Ceiling Interior Finish to Room Fire Growth 2019.

**1.04 ADMINISTRATIVE REQUIREMENTS**

- A. Large Components: Ensure that large components can be moved into final position without damage to other construction.
- B. Electrically Operated Equipment: Coordinate location and electrical characteristics of service connection.

**1.05 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide manufacturer's data showing configuration, sizes, materials, finishes, hardware, and accessories; include:
  - 1. Electrical characteristics and connection locations.
  - 2. Fire rating certifications.
  - 3. Manufacturer's installation instructions.

- C. Shop Drawings: For custom fabricated equipment indicate, in large scale detail, construction methods; method of attachment or installation; type and gauge of metal, hardware, and fittings; plan front elevation; elevations and dimensions; minimum one cross section; utility requirements as to types, sizes, and locations.
- D. Samples: Submit samples of wall pad coverings in manufacturer's available range of colors.
- E. Operating and maintenance data for each operating equipment item.
- F. Welders' Qualification Statement: Welders' certificates in accordance with AWS B2.1/B2.1M and dated no more than 12 months before start of scheduled welding work.
- G. Warranty: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

#### **1.06 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than three years of documented experience.
- B. Installer Qualifications: Company specializing in performing work of the type specified with minimum three years of experience.
- C. Welder Qualifications: Welding processes and welding operators qualified in accordance with AWS D1.1/D1.1M and no more than 12 months before start of scheduled welding work.

#### **1.07 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver products to project site in manufacturer's original packaging with factory original labels attached.
- B. Store products indoors and elevated above floor; prevent warping, twisting, or sagging.
- C. Store products in accordance with manufacturer's instructions; protect from extremes of weather, temperature, moisture, and other damage.

#### **1.08 WARRANTY**

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.
- B. Provide 25 year manufacturer warranty for basketball backstops.

### **PART 2 PRODUCTS**

#### **2.01 MANUFACTURERS**

- A. Gymnasium Equipment:
  - 1. Draper, Inc: [www.draperinc.com/#sle](http://www.draperinc.com/#sle).
  - 2. Performance Sports Systems: [www.perfsports.com/#sle](http://www.perfsports.com/#sle).
  - 3. Porter Athletic Equipment Company: [www.porterathletic.com/#sle](http://www.porterathletic.com/#sle).
  - 4. Daktronics: [www.daktronics.com/#sle](http://www.daktronics.com/#sle).
  - 5. Substitutions: See Section 01 6000 - Product Requirements.

#### **2.02 GENERAL REQUIREMENTS**

- A. See drawings for sizes and locations, unless noted otherwise.
- B. Where mounting dimensions or sizes are not indicated, comply with applicable requirements of the following:
  - 1. National Federation of State High School Associations (NFHS) sports rules.
- C. Provide mounting plates, brackets, and anchors of sufficient size and strength to securely attach equipment to building structure; comply with requirements of Contract Documents.
- D. Hardware: Heavy duty steel hardware, as recommended by manufacturer.
- E. Electrical Wiring and Components: Comply with NFPA 70; provide UL-listed equipment.
- F. Structural Steel Fabrications: Welded in accordance with AWS D1.1/D1.1M, using certified welders.

## **2.03 GYMNASIUM DIVIDER CURTAINS**

- A. Gymnasium Divider Curtains- (Alternate # GC-4):
  - 1. Curtain Material: Class A rated, self-extinguishing vinyl coated polyester complying with NFPA 101.
  - 2. Upper Section: 9 oz/sq yd vinyl mesh fabric.
    - a. Color: Manufacturers standard color.
    - b. Overall Curtain Height: As indicated on drawings.
  - 3. Lower Section: 18 oz/sq yd solid vinyl coated polyester.
    - a. Color: Manufacturers standard color.
    - b. Height Above Floor: Manufacturer's standard height.
  - 4. Operation: overhead roll-up/down.
  - 5. Controls: Wireless remote.
  - 6. Width: As indicated on drawings. Provide 36" opening at each end to allow for passage space around divider.
  - 7. Manufacturers:
    - a. Basis of Design: Draper, Inc; Basis of Design: Top-Roll Gym Divider: [www.draperinc.com/#sle](http://www.draperinc.com/#sle).
    - b. Substitutions: See Section 01 6000 - Product Requirements.

## **2.04 BASKETBALL**

- A. Basketball System: Backstop assembly, backboard, and goal.
  - 1. Manufacturers:
    - a. Basis of Design: Porter Athletic: [www.porterathletic.com](http://www.porterathletic.com)
- B. Ceiling-Suspended Backstop Assemblies: Capable of mounting rectangular glass backboards.
  - 1. Framing: Center strut; front braced, forward folding framing.
  - 2. Folding Control System: Electric hoist that folds backstop with 115 volt actuator, integral limit switches that provide automatic shut-off in both positions, and safety catch with automatic reset.
  - 3. Framing Color: Manufacturer's standard.
  - 4. Manufacturers:
    - a. Basis of Design: Main Court (total of 2) - Porter Athletic; Series 90950000 - Ceiling Suspended, Forward Fold, Front Braced, Camber Backstop.
    - b. Basis of Design: Side Courts (total of 4) - Porter Athletic; Series 90949000 - Ceiling Suspended, Forward Fold, Front Braced
    - c. Substitutions: See Section 01 6000 - Product Requirements.
- C. Backboards: Tempered glass, rectangular shaped.
  - 1. Frame: Brushed aluminum edge, steel mounting.
  - 2. Markings: Painted.
  - 3. Provide safety padding for bottom edge of backboard.
  - 4. Provide mounting kit.
  - 5. Color: Manufacturer's standard.
  - 6. Manufacturers:
    - a. Basis of Design: Porter Athletic; Model No. 208.
    - b. Substitutions: See Section 01 6000 - Product Requirements.
- D. Goals: Steel rim, mounted to backboard, with attached nylon net; complete with mounting hardware.
  - 1. Net Attachment Device: Tube-tie.
  - 2. Breakaway mechanism, adjustable.
  - 3. Finish: Powder coat orange.
  - 4. Manufacturers:
    - a. Basis of Design: Porter Athletic.
    - b. Substitutions: See Section 01 6000 - Product Requirements.

## 2.05 SCOREBOARD

- A. Single-sided LED basketball, Volleyball and Wrestling Scoreboard.
- B. Product: Basis of Design: Daktronics model # BB-2155 single-sided scoreboard displays period time to 99:59, HOME and GUEST scores to 199, PERIOD to nine, team FOULS to 19, PLAYER number to 99, player FOUL to nine, T.O.L. (timeouts left) to nine and indicates possession and bonus. During the last minute of the period, scoreboard displays time to 1:10 of a second. Scoreboard can also score volleyball, wrestling and any sport requiring a clock, score and period function. Includes team name message centers and double bonus indicators.
- C. Construction:
  - 1. All-aluminum construction.
  - 2. Scoreboard back, face, and perimeter: 0.063" (1.60mm) thick.
  - 3. Cabinet withstands high-velocity impact from air-filled sports balls without the need for protective screens.
- D. Digits and indicators:
  - 1. Colorsmart LED digit technology allows clock digits to display game time in green when timing, red when stopped and amber when time is below one minute. Score digits have the option of turning green when ahead, red when behind and amber when tied. Diffusant lenses over the LED's that blend the light for a uniform bar look and 140 degree viewing angle.
- E. Examination and Installation:
  - 1. Verify that mounting surface is ready to receive scoreboard. Verify that placement of conduit and junction boxes are as specified and indicated in plans and shop drawings.
  - 2. Power, conduit, cables and outlet boxes to be provided and installed by the electrical contractor. Signal raceways, conduit and boxes to be provided by the electrical contractor. Electrical contractor is also responsible for any required wire and terminators between each scoreboard and control location.
  - 3. Mount scoreboards and interior displays to wall in location detailed and in accordance with manufacturer's instructions. Unit to be plumb and level.
  - 4. Installation of Control Center:
    - a. Provide boxes, cover plates and jacks as required to meet control specification requirements. Control cables to control panels shall be concealed. Test the operation of the scoreboard, controller and all control jacks; leave control unit in carrying case and other loose items with owner's designated representative. Conduct operator training on scoreboard/controller operation.

## 2.06 SHOT CLOCK

- A. Single-sided LED Basketball Shot clock timer.
- B. Product: Basis of Design: Daktronics model # BB-3114. Displays shot times up to a value of 99 seconds, and count down from any pre-set time between 0 and 99 seconds. Hand-held start/stop/reset switch is included.
  - 1. Digits are red in color, 13" high with Uniview LED digit technology.
  - 2. Display color: Semi-gloss black.
  - 3. Construction: Light weight aluminum Tuff Sport cabinet withstands high-velocity impact from air-filled sports balls without the need for protective screens.
  - 4. Product safety approval: ETL-listed and tested to CSA standards for indoor use only.
  - 5. Operating temperatures: Display: 22 degrees to 122 degrees Fahrenheit (-30 degrees to 50 degrees Celsius). Console: 32 degrees to 130 degrees Fahrenheit (0 degrees to 54 degrees Celsius).
- C. Examination and Installation: Follow same procedures as noted above for installation of Scoreboard.

## 2.07 FLOOR-MOUNTED EQUIPMENT

- A. Volley Ball Nets and Posts: three court system of adjustable posts, net, and tensioning winch meeting requirements for FIVB, USA Volleyball, NCAA and NFHS competition requirements.



1. Posts: 3-1/2 inch O.D. schedule 80 aluminum tube with 1 inch height adjustments between 42 and 96 inches.
  2. Net: 4 inch square #36 nylon cord with vinyl coated polyester hem, double stitched around the perimeter.
    - a. Size: Regulation size.
  3. Tensioning Winch: Manual crank heavy duty, self-locking worm gear mechanism.
  4. Protective Pads: Polyethylene foam covered with polyester reinforced vinyl fabric.
  5. Manufacturers:
    - a. Basis of Design: Draper, Inc; Power Volleyball System (PVS): [www.draperinc.com/#sle](http://www.draperinc.com/#sle).
- B. Floor Anchors for Portable Gymnasium Equipment: Steel plate bolted into wood flooring, with center screw-down button for securing tensioned elements; installed flush with finish floor surface.
1. Screw Size: 1/2 inch diameter, with 13 threads per inch.
  2. Manufacturers:
    - a. Basis of Design: ADP Lemco, Inc: [www.adplemco.com/#sle](http://www.adplemco.com/#sle).
    - b. Substitutions: See Section 01 6000 - Product Requirements.
- C. Floor Sleeves for Posts: Metal sleeve, with latch cover, cast into concrete subfloor to hold poles for nets and goals; installed flush with finish floor surface.
1. Latch Cover: Brass, round; tamper resistant lock with key.
  2. Sleeve: Aluminum.
  3. Round Pole Diameter: 3-1/2 inches.
  4. Depth of Sleeve: 9 inches from floor surface to bottom, including latch cover.

## **2.08 WALL PADDING**

- A. Wall Padding: Foam filling bonded to backing board, wrapped in covering; each panel fabricated in one piece.
1. Surface Burning Characteristics: Flame spread index (FSI) of 25 or less, smoke developed index (SDI) of 450 or less, Class A, when tested in accordance with ASTM E84 as a complete panel.
  2. Flammability: Comply with NFPA 286.
  3. Covering: Vinyl-coated polyester fabric, mildew and rot resistant; stapled to back of board.
    - a. Color: As selected from manufacturer's standard range.
    - b. Texture: Embossed leather-look.
    - c. Fabric Weight: 14 oz/sq yd, minimum.
  4. Foam, Fire-Rated: Open cell polychloroprene (Neoprene), with 5.5 pcf nominal density.
  5. Foam Thickness: 1-1/2 inches.
  6. Backing Board: Plywood.
    - a. Thickness: 7/16 inch, minimum.
  7. Mounting: Permanent; using screws.
  8. Manufacturers:
    - a. Draper, Inc; EcoVision Wall Pad: [www.draperinc.com/#sle](http://www.draperinc.com/#sle).

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Take field measurements to ensure proper fitting of work. If taking field measurements before fabrication will delay work, allow for adjustments within recommended tolerances.
- B. Inspect areas and conditions before installation, and notify Architect in writing of unsatisfactory or detrimental conditions.
- C. Do not proceed with this work until conditions have been corrected; commencing installation constitutes acceptance of work site conditions.
- D. Verify that electrical services are correctly located and have proper characteristics.

### **3.02 INSTALLATION**

- A. Install in accordance with Contract Documents and manufacturer's instructions.
- B. Coordinate installation of inserts and anchors that must be built in to flooring or subflooring.
- C. Install equipment rigid, straight, plumb, and level.
- D. Secure equipment with manufacturer's recommended anchoring devices.
- E. Install wall padding securely, with edges tight to wall and without wrinkles in fabric covering.
- F. Separate dissimilar metals to prevent electrolytic corrosion.

### **3.03 ADJUSTING**

- A. Verify proper placement of equipment.
- B. Verify proper placement of equipment anchors and sleeves, and use actual movable equipment to be anchored if available.
- C. Adjust operating equipment for proper operation; remove and replace equipment causing noise or vibration; lubricate equipment as recommended by manufacturer.

### **3.04 CLEANING**

- A. Remove masking or protective covering from finished surfaces.
- B. Clean equipment in accordance with manufacturer's recommendations.

### **3.05 PROTECTION**

- A. Protect installed products until Date of Substantial Completion.
- B. Replace damaged products before Date of Substantial Completion.

**END OF SECTION**

## **SECTION 12 2400 WINDOW SHADES**

### **PART 1 GENERAL**

#### **1.01 SECTION INCLUDES**

- A. Interior manual roller shades.

#### **1.02 RELATED REQUIREMENTS**

- A. Section 06 1000 - Rough Carpentry: Concealed wood blocking for attachment of headrail brackets.

#### **1.03 REFERENCE STANDARDS**

- A. NFPA 701 - Standard Methods of Fire Tests for Flame Propagation of Textiles and Films 2019.

#### **1.04 ADMINISTRATIVE REQUIREMENTS**

- A. Sequencing:
  - 1. Do not fabricate shades until field dimensions for each opening have been taken with field conditions in place.
  - 2. Do not install shades until final surface finishes and painting are complete.

#### **1.05 SUBMITTALS**

- A. Product Data: Provide manufacturer's standard catalog pages and data sheets, including materials, finishes, fabrication details, dimensions, profiles, mounting requirements, and accessories.
- B. Shop Drawings: Include shade schedule indicating size, location and keys to details, head, jamb and sill details, mounting dimension requirements for each product and condition, and operation direction.
- C. Selection Samples: Include fabric samples in full range of available colors and patterns.
- D. Operation and Maintenance Data: List of all components with part numbers, sources of supply, and operation and maintenance instructions; include copy of shop drawings.
- E. Warranty: Submit sample of manufacturer's warranty and documentation of final executed warranty completed in Owner's name and registered with manufacturer.

#### **1.06 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than five years of documented experience.
- B. Installer Qualifications: Company specializing in performing work of this type with minimum 5 years of documented experience with shading systems of similar size and type.
  - 1. Factory training and demonstrated experience.

#### **1.07 MOCK-UP**

- A. Mock-Up: Provide full size mock-up of window shade system complete with selected shade fabric including example of seams and batten pockets when applicable.
  - 1. Obtain Architect's approval of light and privacy characteristics of fabric prior to fabrication.
  - 2. Full-sized mock-up may become part of the final installation.

#### **1.08 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver shades in manufacturer's unopened packaging, labeled to identify each shade for each opening.
- B. Handle and store shades in accordance with manufacturer's recommendations.

#### **1.09 FIELD CONDITIONS**

#### **1.10 WARRANTY**

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.
- B. Provide manufacturer's warranty from Date of Substantial Completion, covering the following:

1. Shade Hardware: One year.
2. Fabric: One year.
3. Aluminum and Steel Coatings: One year.

## **PART 2 PRODUCTS**

### **2.01 MANUFACTURERS**

- A. Interior Manually Operated Roller Shades:
  1. Draper, Inc; Clutch Operated FlexShade: [www.draperinc.com/#sle](http://www.draperinc.com/#sle).
  2. Substitutions: See Section 01 6000 - Product Requirements.

### **2.02 ROLLER SHADES**

- A. General:
  1. Provide shade system components that are easy to remove or adjust without removal of mounted shade brackets.
  2. Provide shade system that operates smoothly when shades are raised or lowered.
- B. Interior Roller Shades - Basis of Design: Draper, Inc.- Clutch Operated "Techmatic" Window Shade: [www.draperinc.com/#sle](http://www.draperinc.com/#sle).
  1. Description: Double roller, manually operated fabric window shade system complete with mounting brackets, roller tubes, hembars, hardware, and other components necessary for complete installation.
    - a. Drop Position: Regular roll.
    - b. Mounting: Wall mounted.
    - c. Size: To cover entire window opening wxh as indicated on drawings.
  2. Mounting Hardware: As recommended by manufacturer for mounting indicated and to accommodate shade fabric roll-up size and weight.
    - a. Double Roller Mounting: Configured for light-filtering and room-darkening shades in one opening.
  3. Roller Tubes: As required for type of shade operation; designed for removal without removing mounting hardware.
    - a. Material: Extruded aluminum or steel, with wall thickness and material selected by manufacturer.
    - b. Size: As recommended by manufacturer; selected for suitability for installation conditions, span, and weight of shades.
  4. Hembars: Designed to maintain bottom of shade straight and flat, selected from manufacturer's standard options.
  5. Manual Operation:
    - a. Clutch Operator: Manufacturer's standard material and design, permanently lubricated.
    - b. Drive Chain: Continuous loop stainless steel beaded ball chain, 95 pounds minimum breaking strength. Provide upper and lower limit stops.
  6. Accessories:
    - a. Fascia: Extruded aluminum, size as required to conceal shade mounting, attachable to mounting end caps, without exposed fasteners; clear anodized finish.
    - b. End Cap Covers: Match fascia or headbox finish.
    - c. Fasteners: Noncorrosive, and as recommended by shade manufacturer.

### **2.03 SHADE FABRIC**

- A. Fabric - Type A: Nonflammable, color-fast, impervious to heat and moisture, and able to retain its shape under normal operation.
  1. Manufacturers:
    - a. Phifer, Inc; Style 2410 3%: [www.phifer.com/#sle](http://www.phifer.com/#sle).
    - b. Substitutions: See Section 01 6000 - Product Requirements.
- B. Fabric Type B: Nonflammable, color-fast, impervious to heat and moisture, and able to retain its shape under normal operation.
  1. Material: Vinyl coated polyester.

2. Performance Requirements:
  - a. Flammability: Pass NFPA 701 large and small tests.
  - b. Visible Light Transmittance (Tv): 1%.
3. Color: As selected by Architect from manufacturer's full range of colors.
4. Manufacturers:
  - a. Draper Opaque SunBloc Series- SB9000.

#### **2.04 ROLLER SHADE FABRICATION**

- A. Field measure finished openings prior to ordering or fabrication.
- B. Dimensional Tolerances: Fabricate shades to fit openings within specified tolerances.
  1. Vertical Dimensions: Fill openings from head to sill with 1/2 inch space between bottom bar and window stool.
  2. Horizontal Dimensions - Outside Mounting: Cover window frames, trim, and casings completely.
- C. Dimensional Tolerances: As recommended in writing by manufacturer.
- D. At openings requiring continuous multiple shade units with separate rollers, locate roller joints at window mullion centers; butt rollers end-to-end.

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

- A. Examine finished openings for deficiencies that may preclude satisfactory installation.
- B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
- C. Start of installation shall be considered acceptance of substrates.

#### **3.02 PREPARATION**

- A. Prepare surfaces using methods recommended by manufacturer for achieving best result for substrate under the project conditions.
- B. Coordinate with window installation and placement of concealed blocking to support shades.

#### **3.03 INSTALLATION**

- A. Install in accordance with manufacturer's instructions and approved shop drawings, using mounting devices as indicated.
- B. Adjust level, projection, and shade centering from mounting bracket. Verify there is no telescoping of shade fabric. Ensure smooth shade operation.

#### **3.04 CLEANING**

- A. Clean soiled shades and exposed components as recommended by manufacturer.
- B. Replace shades that cannot be cleaned to "like new" condition.
- C. See Section 01 7419 - Construction Waste Management and Disposal for additional requirements.

#### **3.05 CLOSEOUT ACTIVITIES**

- A. See Section 01 7800 - Closeout Submittals, for closeout submittals.
- B. Demonstration: Demonstrate operation and maintenance of window shade system to Owner's personnel.
- C. Training: Train Owner's personnel on operation and maintenance of system.
  1. Use operation and maintenance manual as training reference, supplemented with additional training materials as required.
  2. Provide minimum of two hours training by manufacturer's authorized personnel at location designated by the Owner.

#### **3.06 PROTECTION**

- A. Protect installed products from subsequent construction operations.

B. Touch-up, repair, or replace damaged products before Substantial Completion.

**3.07 MAINTENANCE**

A. See Section 01 7000 - Execution and Closeout Requirements, for additional requirements relating to maintenance service.

**END OF SECTION**

**SECTION 12 3200  
MANUFACTURED WOOD CASEWORK**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Manufactured standard casework, with cabinet hardware.
- B. Special purpose units.

**1.02 RELATED REQUIREMENTS**

- A. Section 01 6000 - Product Requirements: Requirements for sustainably harvested wood.
- B. Section 01 6116 - Volatile Organic Compound (VOC) Content Restrictions: VOC limitations for adhesives and sealants.
- C. Section 12 3600 - Countertops: Additional requirements for countertops.

**1.03 DEFINITIONS**

- A. Exposed: Portions of casework visible when drawers and cabinet doors are closed, including end panels, bottoms of cases more than 42 inches above finished floor, tops of cases less than 72 inches above finished floor and all members visible in open cases or behind glass doors.
- B. Semi-Exposed: Portions of casework and surfaces behind solid doors, tops of cases more than 72 inches above finished floor and bottoms of cabinets more than 30 inches but less than 42 inches above finished floor.
- C. Concealed: Sleepers, web frames, dust panels and other surfaces not generally visible after installation and cabinets less than 30 inches above finished floor.

**1.04 REFERENCE STANDARDS**

- A. AWI (QCP) - Quality Certification Program Current Edition.
- B. AWI/AWMAC/WI (AWS) - Architectural Woodwork Standards, 2nd Edition 2014, with Errata (2016).
- C. AWMAC/WI (NAAWS) - North American Architectural Woodwork Standards 2021, with Errata.
- D. BHMA A156.9 - Cabinet Hardware 2020.
- E. ISFA 2-01 - Classification and Standards for Solid Surfacing Material 2013.
- F. NEMA LD 3 - High-Pressure Decorative Laminates 2005.

**1.05 ADMINISTRATIVE REQUIREMENTS**

- A. Preinstallation Meeting: Conduct a preinstallation meeting one week prior to the start of the work of this section; require attendance by all affected installers.
- B. Keying Conference: Conduct conference prior to ordering keys. Incorporate conference decisions into keying submittal.

**1.06 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Indicate casework types, sizes, and locations, using large scale plans, elevations, and cross sections. Include rough-in and anchors and reinforcements, placement dimensions and tolerances, clearances required, and keying information.
- C. Samples for Finish Selection: Fully finished, for color selection. Minimum sample size: 2 inches by 3 inches.
  - 1. Plastic laminate samples, for color, texture, and finish selection.
- D. Installer's Qualification Statement.
- E. Maintenance Data: Manufacturer's recommendations for care and cleaning.
- F. Finish touch-up kit for each type and color of materials provided.

### **1.07 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years of documented experience.
- B. Quality Certification: Comply with AWI (QCP) woodwork association quality certification service/program in accordance with requirements for work specified in this section.
  - 1. Provide labels or certificates indicating that the installed work complies with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS) requirements for grade or grades specified.
  - 2. This AWI (QCP) project is registered as project number [\_\_\_\_\_].
  - 3. Provide designated labels on shop drawings as required by certification program.
  - 4. Provide designated labels on installed products as required by certification program.
  - 5. Submit certifications upon completion of installation that verifies this work is in compliance with specified requirements.
  - 6. Replace, repair, or rework all work for which certification is refused.
- C. Installer Qualifications: Company specializing in performing work of the type specified in this section, with not less than three years of documented experience and approved by manufacturer.

### **1.08 DELIVERY, STORAGE, AND HANDLING**

- A. Protect items provided by this section, including finished surfaces and hardware items during handling and installation. For metal surfaces, use polyethylene film or other protective material standard with the manufacturer.
- B. Acceptance at Site:
  - 1. Do not deliver or install casework until the conditions specified under Part 3, Examination Article of this section have been met. Products delivered to sites that are not enclosed and/or improperly conditioned will not be accepted if warping or damage due to unsatisfactory conditions occurs.
- C. Storage:
  - 1. Store casework in the area of installation. If necessary, prior to installation, temporarily store in another area, meeting the environmental requirements specified under Part 3, "Site Verification of Conditions" Article of this section.

### **1.09 MOCK-UP**

- A. Provide full size base cabinet complete with drawers, door, adjustable shelf and countertop.
- B. See Section 01 4000 - Quality Requirements for additional requirements.
- C. Locate where directed.
- D. Mock-up may remain as part of the Work.

### **1.10 WARRANTY**

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.
- B. Correct defective Work within a five year period after Date of Substantial Completion, at no additional cost to Owner. Defects include, but are not limited to:
  - 1. Ruptured, cracked, or stained finish coating.
  - 2. Discoloration or lack of finish integrity.
  - 3. Cracking or peeling of finish.
  - 4. Delamination of components.
  - 5. Failure of adhesives.
  - 6. Failure of hardware.

## **PART 2 PRODUCTS**

### **2.01 MANUFACTURERS**

- A. Plastic Laminate Casework:
  - 1. Case Systems: [www.casesystems.com/#sle](http://www.casesystems.com/#sle).



2. Substitutions: See Section 01 6000 - Product Requirements.

## **2.02 CASEWORK, GENERAL**

- A. Quality Standard: AWI/AWMAC/WI (AWS), unless noted otherwise.
- B. Types: More than one type is required. See drawings for location of each type of casework.
- C. Plastic Laminate Faced Cabinets: Custom Grade.

## **2.03 FABRICATION**

- A. Assembly: Shop assemble casework items for delivery to site in units easily handled and to permit passage through building openings.
- B. Construction: As required for selected grade.
- C. Structural Performance: Safely support the following minimum loads:
  - 1. Base Units: 500 pounds per linear foot across the cabinet ends.
  - 2. Suspended Units: 300 pounds static load.
  - 3. Hanging Wall Cases: 300 pounds.
  - 4. Shelves: 100 pounds, minimum.
- D. Seismic Performance: Casework, including attachments to other work, able to withstand the effects of earthquake motions determined according to ASCE/SEI 7.
  - 1. Component Importance Factor: 1.0.
- E. Fittings and Fixture Locations: Cut and drill components for fittings and fixtures.
- F. Hardware Application: Factory-machine casework members for hardware that is not surface applied.
- G. Access Panels: Where indicated, for maintenance of utility service and mechanical and electrical components.
- H. Removable back panels on indicated base cabinets. Provide partial height back panels at sink cabinets.
- I. Fixed panels at backs of open spaces between base cabinets.
- J. Edging: Fit shelves, doors, and exposed edges with specified edging. Do not use more than one piece for any single length.
- K. Scribes and Fillers: Panels of matching construction and finish, for locations where cabinets do not fit tight to adjacent construction.
- L. Apron Frames: Construction similar to other cabinets, with modifications.
  - 1. Frames fabricated from panels standard with the manufacturer. Include front and back panels, with drawer suspension framing mechanically fastened to support channels spanning between them.
  - 2. Apron Drawers: Manufacturer's standard drawer construction and size for apron installation. Single drawer for aprons up to 48 inches wide, two drawers for wider aprons.
- M. Countertop Panel-Type Supports: Materials similar to adjacent casework, 1-1/2 inch in width, with front-to-back and toe space dimensions matching base cabinet. Designed to be secured in a concealed fashion to countertop material. Include two leveling devices per support panel.

## **2.04 PLASTIC-LAMINATE-CLAD CASEWORK**

- A. Plastic-Laminate-Clad Casework: Solid wood and wood panel construction; each unit self-contained and not dependent on adjacent units or building structure for rigidity; in sizes necessary to avoid field cutting except for scribes and filler panels. Include adjustable levelers for base cabinets.
  - 1. Style: Flush overlay. Ease doors and drawer fronts slightly at edges.
  - 2. Cabinet Nominal Dimensions: Unless otherwise indicated, provide cabinets of widths and heights indicated on drawings, and with following front-to-back dimensions:
    - a. Base Cabinets: 24 inches.
    - b. Tall Cabinets: 24", unless a particular cabinet type is required to be deeper by design- ie- Paper Storage Cabinet.

- c. Wall Cabinets: 13 inches.
- 3. Plastic Laminate: Apply plastic laminate finish in full uninterrupted sheets consistent with manufactured sizes. Fit corners and joints hairline.
  - a. Finish: Matte or suede, gloss rating of 5 to 20.
  - b. Surface Color and Pattern: As selected by Architect from manufacturer's full line.
  - c. Exposed Interior Surfaces: Thermally fused laminate.
    - 1) Color: White.
  - d. Apply laminate backing sheet to reverse side of plastic laminate finished surfaces.
  - e. Cap exposed plastic laminate finish edges with PVC trim for cabinets.

## 2.05 COUNTERTOPS

- A. Countertops: As specified in Section 12 3600.
- B. Fabricate in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), Section 11 - Countertops, Custom Grade, unless otherwise noted.
- C. Plastic Laminate Countertops: High pressure decorative laminate sheet bonded to substrate.
  - 1. Manufacturer's standard configuration for exposed edges, back and end splashes.
  - 2. Fabricate in accordance with manufacturer's standard requirements.
- D. Epoxy Resin Countertops: Filled epoxy resin molded into homogenous, non-porous sheets; no surface coating and color and pattern consistent throughout thickness; with integral or adhesively seamed components.
  - 1. Manufacturer's standard configuration for exposed edges, back and end splashes.
  - 2. Fabricate in accordance with manufacturer's standard requirements.
- E. Solid Surfacing Countertops: Solid surfacing sheet or plastic resin casting over continuous substrate.
  - 1. Solid Surfacing Sheet and Plastic Resin Castings: Complying with ISFA 2-01 and NEMA LD 3; acrylic or polyester resin, mineral filler, and pigments; homogenous, non-porous and capable of being worked and repaired using standard woodworking tools; no surface coating; color and pattern consistent throughout thickness.
  - 2. Manufacturer's standard configuration for exposed edges, back and end splashes.
  - 3. Fabricate in accordance with manufacturer's standard requirements.

## 2.06 SPECIAL PURPOSE UNITS

- A. Musical Instrument Storage Special Units.
  - 1. Basis of Design Manufacturer: Wenger.
  - 2. Style: UltraStor storage cabinets without doors . edges.
  - 3. Primary Construction: Wall panels are 3/4" industrial grade composite wood with no added formaldehyde and polyester laminate finish in Wenger standard colors. Shelves to be polyethylene with ventilation ridges for air flow and rounded front edges.
    - a. Design: Modular units with through-bolted fastening for reconfigurable assembly.
    - b. Cabinet Hardware: Manufacturer's standard, types as required for drawers, doors, shelves, levelers and similar items.
    - c. Finish, Surface Color and Pattern: As selected by Architect from manufacturer's standard line.
    - d. Standard 10-year warranty.
  - 4. Small Instrument Storage Units for Chorus Room: Manufacturer's standard; sizes and configurations indicated on drawings.
    - a. Basis of Design: Model Wenger Small Instrument Storage cabinets #166E001..
      - 1) Shelves: 9 adjustable.
      - 2) Cabinet construction: 3/4" industrial grade composite wood with no added formaldehyde and polyester laminate finish in standard color offerings.
      - 3) Doors: Double locking doors.
      - 4) Interior storage bins: includes (4) small bins; (5) medium bins; (2) large bins.
      - 5) Standard 10-year warranty.
- B. Mailroom Special Units.

1. Style: Flush overlay. Ease doors and drawer fronts slightly at edges.
2. Primary Construction: Plastic-laminate clad units, with manufacturer's standard material countertops.
3. Mail Slot Units: Manufacturer's standard units; sizes and configurations indicated on drawings.

## **2.07 CABINET HARDWARE**

- A. Manufacturer's standard types, styles and finishes.
- B. Comply with BHMA A156.9 requirements.
- C. Locks: Provide locks on casework drawers and doors in all locations where casework is shown. Lock with 5 pin cylinder and 2 keys per lock.
  1. Hinged Doors: Cam type lock, bright chromium plated over nickel on base material.
  2. Tall Hinged Doors: Three-point latching system.
  3. Keying: Key locks alike within a space; key each room separately.
  4. Master Key System: All locks operable by master key.
- D. Shelves in Cabinets:
  1. Shelf Standards and Rests: Vertical standards with rubber button fitted rests, satin chromium plated over nickel on base material.
- E. Swinging Doors: Hinges, pulls, and catches.
  1. Hinges: Visible, number as required by referenced standards for width, height, and weight of door.
    - a. Visible Hinges: Installed on framed cabinet face, and on door face, bright chromium plated over nickel on base material.
  2. Pulls: Chrome wire pulls, 4 inches wide.
  3. Catches: Magnetic.
- F. Drawers: Pulls and slides.
  1. Pulls: Chrome wire pulls, 4 inches wide.
  2. Slides: Steel, full extension arms, ball bearings; self-closing; capacity as recommended by manufacturer for drawer height and width.

## **2.08 MATERIALS**

- A. Adhesives Used for Assembly: Comply with VOC requirements for adhesives and sealants as specified in Section 01 6116.
- B. Wood-Based Materials:
  1. Certified as sustainably harvested as specified in Section 01 6000.
  2. Solid Wood: Air-dried to 4.5 percent moisture content, then tempered to 6 percent moisture content before use.
  3. Composite Wood Panels: Containing no urea-formaldehyde resin binders.
- C. Concealed Solid Wood or Plywood: Any species and without defects affecting strength or utility.
- D. High Pressure Decorative Laminate (HPDL): NEMA LD 3, types as recommended for specific applications. complying with Grade requirements, and standard with the manufacturer.
- E. Thermally Fused Laminate (TFL): Melamine resin, NEMA LD 3, Type VGL laminate panels.

## **2.09 ACCESSORIES**

- A. Plastic Edge Banding: Extruded PVC, flat shaped; smooth finish; self locking serrated tongue; of width to match component thickness.
  1. Color: As selected by Architect from manufacturer's standard range.
  2. Use at exposed edges.
  3. Use at exposed shelf edges.
- B. Bolts, Nuts, Washers, Lags, Pins, and Screws: Of size and type to suit application; galvanized or chrome-plated finish in concealed locations and stainless steel or chrome-plated finish in exposed locations.

- C. Concealed Joint Fasteners: Corrosion-resistant, standard with manufacturer.
- D. Grommets: Standard plastic, painted metal, or rubber grommets for cut-outs, in color to match adjacent surface.
- E. Sealant for Use in Casework Installation:
  - 1. Manufacturer's recommended type.

## **PART 3 EXECUTION**

### **3.01 PREPARATION**

- A. Large Components: Ensure that large components can be moved into final position without damage to other construction.

### **3.02 EXAMINATION**

- A. Site Verification of Environmental Conditions:
  - 1. Do not deliver casework until the following conditions have been met:
    - a. Building has been enclosed (windows and doors sealed and weather-tight).
    - b. An operational HVAC system that maintains temperature and humidity at occupancy levels has been put in place.
    - c. Ceiling, overhead ductwork, piping, and lighting have been installed.
    - d. Installation areas do not require further "wet work" construction.
- B. For Base Cabinets Installation: Examine floor levelness and flatness of installation space. Do not proceed with installation if encountered floor conditions required more than 1/2 inch leveling adjustment. When installation conditions are acceptable, for each space, establish the high point of the floor. Set and make level and plumb first cabinet in relation to this high point.
- C. For Wall Cabinets Installation: Examine wall surfaces in installation space. Do not proceed with installation if the following conditions are encountered:
  - 1. Maximum variation from plane of masonry wall exceeds 1/4 inch in 10 ft and 1/2 inch in 20 ft or more, and/or maximum variation from plumb exceeds 1/4 inch per story.
  - 2. Maximum Variation of finished gypsum board surface from true flatness: 1/8 inch in 10 feet in any direction.
- D. Verify adequacy of support framing and anchors.
- E. Verify that service connections are correctly located and of proper characteristics.

### **3.03 INSTALLATION**

- A. Perform installation in accordance with manufacturer's instructions.
- B. Use anchoring devices to suit conditions and substrate materials encountered. Use concealed fasteners to the greatest degree possible. Use exposed fasteners only where allowed by approved shop drawings, or where concealed fasteners are impracticable.
- C. Set casework items plumb and square, securely anchored to building structure.
- D. Align cabinets to adjoining components, install filler and/or scribe panels where necessary to close gaps.
- E. Fasten together cabinets in continuous runs, with joints flush, uniform and tight. Misalignment of adjacent units not to exceed 1/16 inch. In addition, do not exceed the following tolerances:
  - 1. Variation of Tops of Base Cabinets from Level: 1/16 inch in 10 feet.
  - 2. Variation of Faces of Cabinets from a True Plane: 1/8 inch in 10 feet.
  - 3. Variation of Adjacent Surfaces from a True Plane (Lippage): 1/32 inch.
  - 4. Variation in Alignment of Adjacent Door and Drawer Edges: 1/16 inch.
- F. Base Cabinets: Fasten cabinets to service space framing and/or wall substrates, with fasteners spaced not more than 16 inches on center. Bolt adjacent cabinets together with joints flush, tight, and uniform.
- G. Install hardware uniformly and precisely.

- H. Countertops: Install countertops intended and furnished for field installation in one true plane, with ends abutting at hairline joints, and no raised edges.
- I. Replace units that are damaged, including those that have damaged finishes.

#### **3.04 ADJUSTING**

- A. Adjust operating parts, including doors, drawers, hardware, and fixtures to function smoothly.

#### **3.05 CLEANING**

- A. Clean casework and other installed surfaces thoroughly.

#### **3.06 PROTECTION**

- A. Do not permit finished casework to be exposed to continued construction activity.
- B. Protect casework and countertops from ongoing construction activities. Prevent workmen from standing on, or storing tools and materials on casework or countertops.
- C. Repair damage, including to finishes, that occurs prior to Date of Substantial Completion, using methods prescribed by manufacturer; replace units that cannot be repaired to like-new condition.

#### **3.07 SCHEDULES**

- A. See sheet A910: .

**END OF SECTION**

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## **SECTION 12 3600 COUNTERTOPS**

### **PART 1 GENERAL**

#### **1.01 SECTION INCLUDES**

- A. Countertops for architectural cabinet work.
- B. Countertops for plastic laminate manufactured casework.
- C. Wall-hung counters and vanity tops.
- D. Window Sills

#### **1.02 RELATED REQUIREMENTS**

- A. Section 06 4100 - Architectural Wood Casework.
- B. Section 123200 - Manufactured Wood Casework.

#### **1.03 REFERENCE STANDARDS**

- A. ANSI A208.1 - American National Standard for Particleboard 2016.
- B. ASTM D635 - Standard Test Method for Rate of Burning and/or Extent and Time of Burning of Plastics in a Horizontal Position 2018.
- C. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2021a.
- D. AWI (QCP) - Quality Certification Program Current Edition.
- E. ISFA 2-01 - Classification and Standards for Solid Surfacing Material 2013.
- F. NEMA LD 3 - High-Pressure Decorative Laminates 2005.

#### **1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Complete details of materials and installation ; combine with shop drawings of cabinets and casework specified in other sections.
- C. Selection Samples: For each finish product specified, color chips representing manufacturer's full range of available colors and patterns.
- D. Test Reports: Chemical resistance testing, showing compliance with specified requirements.
- E. Certificate: Submit labels and certificates required by quality assurance and quality control programs.

#### **1.05 QUALITY ASSURANCE**

- A. Fabricator Qualifications: Natural Stone Institute (NSI) Accredited Natural Stone Fabricator; [www.naturalstoneinstitute.org/#sle](http://www.naturalstoneinstitute.org/#sle).
- B. Installer Qualifications: Company specializing in performing work of the type specified in this section, with not less than three years of documented experience.
- C. Quality Certification:
  - 1. Comply with AWI (QCP) woodwork association quality certification service/program in accordance with requirements for work specified in this section: [www.awiqcp.org/#sle](http://www.awiqcp.org/#sle).
  - 2. Provide designated labels on shop drawings as required by certification program.
  - 3. Provide designated labels on installed products as required by certification program.
  - 4. Submit certifications upon completion of installation that verifies this work is in compliance with specified requirements.

#### **1.06 DELIVERY, STORAGE, AND HANDLING**

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Store and dispose of solvent-based materials, and materials used with solvent-based materials, in accordance with requirements of local authorities having jurisdiction.

## 1.07 FIELD CONDITIONS

- A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

## PART 2 PRODUCTS

### 2.01 COUNTERTOPS

- A. Quality Standard: Custom Grade, in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), unless noted otherwise.
- B. Plastic Laminate Countertops: High-pressure decorative laminate (HPDL) sheet bonded to substrate.
  - 1. Laminate Sheet, Type HPL: NEMA LD 3, Grade HGS, 0.048 inch nominal thickness.
    - a. Manufacturers:
      - 1) Formica Corporation: [www.formica.com/#sle](http://www.formica.com/#sle).
      - 2) Panolam Industries International, Inc; Nevamar Hi-Wear: [www.panolam.com/#sle](http://www.panolam.com/#sle).
      - 3) Wilsonart: [www.wilsonart.com/#sle](http://www.wilsonart.com/#sle).
      - 4) Substitutions: See Section 01 6000 - Product Requirements.
    - b. Surface Burning Characteristics: Flame spread index of 25, maximum; smoke developed index of 450, maximum; when tested in accordance with ASTM E84.
    - c. Finish: Matte or suede, gloss rating of 5 to 20.
    - d. Surface Color and Pattern: As selected by Architect from the manufacturer's full line.
  - 2. Exposed Edge Treatment: Molded PVC edge with T-spline, sized to completely cover edge of panel.
    - a. Color: As selected by Architect from the manufacturer's full line.
  - 3. Back and End Splashes: Same material, same construction.
  - 4. Fabricate in accordance with AWI/AWMAC/WI (AWS) or AWMAC/WI (NAAWS), Section 11 - Countertops, Custom Grade.
  - 5. Location: All countertops to be Plastic Laminate unless otherwise indicated.
- C. Epoxy Resin Countertops: Filled epoxy resin molded into homogenous, non-porous sheets; no surface coating and color and pattern consistent throughout thickness; with integral or adhesively seamed components.
  - 1. Manufacturers:
    - a. Durcon, Inc: [www.durcon.com/#sle](http://www.durcon.com/#sle).
    - b. Prime Industries, Inc: [www.piilab.com/#sle](http://www.piilab.com/#sle).
    - c. Substitutions: See Section 01 6000 - Product Requirements.
  - 2. Flat Surface Thickness: 1 inch, nominal.
  - 3. Flammability: Self-extinguishing, when tested in accordance with ASTM D635.
  - 4. Surface Finish: Smooth, non-glare.
  - 5. Color: Black.
  - 6. Exposed Edge Shape: 1/8 inch bevel chamfer.
  - 7. Back and End Splashes: Same material, same thickness; separate for field attachment.
  - 8. Located in ART Rm. only, on all horizontal surfaces.
- D. Solid Surfacing Countertops and Window Sills: Solid surfacing sheet or plastic resin casting over continuous substrate.
  - 1. Flat Sheet Thickness: 1/2 inch, minimum.
  - 2. Solid Surfacing Sheet and Plastic Resin Castings: Complying with ISFA 2-01 and NEMA LD 3; acrylic or polyester resin, mineral filler, and pigments; homogenous, non-porous and capable of being worked and repaired using standard woodworking tools; no surface coating; color and pattern consistent throughout thickness.
    - a. Manufacturers:
      - 1) Avonite Surfaces; Aristech Surfaces: [www.avonitesurfaces.com/#sle](http://www.avonitesurfaces.com/#sle).
      - 2) Dupont; Corian: [www.corian.com/#sle](http://www.corian.com/#sle).



- 3) LG Hausys America, Inc; HI-MACS 12mm: [www.lghausysusa.com/#sle](http://www.lghausysusa.com/#sle).
- 4) Substitutions: See Section 01 6000 - Product Requirements.
- b. Finish on Exposed Surfaces: Matte, gloss rating of 5 to 20.
- c. Color/Pattern Family: Fine-grained "salt-and-pepper" look, low contrast.
- 3. Other Components Thickness: 1/2 inch, minimum.
- 4. Exposed Edge Treatment: Built up to minimum 1-1/4 inch thick; square edge; use marine edge at sinks.
- 5. Back and End Splashes: Same sheet material, square top; minimum 4 inches high.
- 6. Located in Administration (Reception Desk and back counter) and at Nurse's Office- (all horizontal surfaces).

## **2.02 MATERIALS**

- A. Wood-Based Components:
  - 1. Wood fabricated from old growth timber is not permitted.
- B. Particleboard for Supporting Substrate: ANSI A208.1 Grade 2-M-2, 45 pcf minimum density; minimum 3/4 inch thick; join lengths using metal splines.
- C. Adhesives: Chemical resistant waterproof adhesive as recommended by manufacturer of materials being joined.
- D. Joint Sealant: Mildew-resistant silicone sealant.

## **2.03 FABRICATION**

- A. Fabricate tops and splashes in the largest sections practicable, with top surface of joints flush.
  - 1. Join lengths of tops using best method recommended by manufacturer.
  - 2. Fabricate to overhang fronts and ends of cabinets 1 inch except where top butts against cabinet or wall.
  - 3. Prepare all cutouts accurately to size; replace tops having improperly dimensioned or unnecessary cutouts or fixture holes.
- B. Provide back/end splash wherever counter edge abuts vertical surface unless otherwise indicated.
  - 1. Secure to countertop with concealed fasteners and with contact surfaces set in waterproof glue.
  - 2. Height: 4 inches, unless otherwise indicated.
- C. Solid Surfacing: Fabricate tops and wall panels up to 144 inches long in one piece; join pieces with adhesive sealant in accordance with manufacturer's recommendations and instructions.
- D. Wall-Mounted Counters: Provide skirts, aprons, brackets, and braces as indicated on drawings, finished to match.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Do not begin installation until substrates have been properly prepared.
- B. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.
- C. Verify that wall surfaces have been finished and mechanical and electrical services and outlets are installed in proper locations.

### **3.02 PREPARATION**

- A. Clean surfaces thoroughly prior to installation.
- B. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.

### **3.03 INSTALLATION**

- A. Securely attach countertops to cabinets using concealed fasteners. Make flat surfaces level; shim where required.

- B. Attach plastic laminate countertops using screws with minimum penetration into substrate board of 5/8 inch.
- C. Attach epoxy resin countertops using compatible adhesive.
- D. Seal joint between back/end splashes and vertical surfaces.

#### **3.04 TOLERANCES**

- A. Variation From Horizontal: 1/8 inch in 10 feet, maximum.
- B. Offset From Wall, Countertops: 1/8 inch maximum; 1/16 inch minimum.
- C. Field Joints: 1/8 inch wide, maximum.

#### **3.05 CLEANING**

- A. Clean countertops surfaces thoroughly.

#### **3.06 PROTECTION**

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Date of Substantial Completion.

**END OF SECTION**

**SECTION 12 4813  
ENTRANCE FLOOR MATS AND FRAMES**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Extruded aluminum entrance floor grilles.
- B. Recessed mat frames.

**1.02 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data indicating properties of walk-off surface, component dimensions and recessed frame characteristics.
- C. Shop Drawings: Indicate dimensions and details for recessed frame.
- D. Samples: Submit two samples, [ ] by [ ] inch in size illustrating pattern, color, finish, and edging.
- E. Maintenance Data: Include cleaning instructions and stain removal procedures.

**PART 2 PRODUCTS**

**2.01 MANUFACTURERS**

- A. Entrance Floor Grilles and Gratings: Basis of Design: Mats, Inc. "Dual Track" system with AD frame.
  - 1. Mats, Inc. ; [www.matsinc.com/#sle..](http://www.matsinc.com/#sle..)
  - 2. Substitutions: See Section 01 6000 - Product Requirements.

**2.02 ENTRANCE FLOOR GRILLES AND GRATINGS**

- A. Entrance Floor Grilles: Recessed extruded aluminum grille assembly with nominal 1 inch wide tread strips running perpendicular to traffic flow, slots between treads, and perimeter frame forming sides of recess; grille hinged for access to recess.
  - 1. Recess Depth: 1-5/8".
  - 2. Tread Surfaces: Alternating serrated anodized aluminum and nylon carpet.
  - 3. Colors: To be selected by Architect from manufacturer's standard selection.
  - 4. Length in Direction of Traffic Flow: 72 inches.
  - 5. Width Perpendicular to Traffic Flow: Full width of entrance door opening.
  - 6. Frame: Anodized aluminum for embedding in concrete; minimal exposed trim; stud or hook concrete anchors.
- B. Mounting: Top of non-resilient members level with adjacent floor.
- C. Structural Capacity: Capable of supporting a rolling load of 500 pounds without permanent deformation or noticeable deflection.
- D. Vibration Resistant Fabrication: All members welded, riveted, or bolted; no snap or friction connections.

**2.03 FABRICATION**

- A. Construct recessed mat frames square, tight joints at corners, rigid. Coat surfaces with protective coating where in contact with cementitious materials.
- B. Fabricate mats in single unit sizes; fabricate multiple mats where indicated on drawings.

**PART 3 EXECUTION**

**3.01 EXAMINATION**

- A. Verify that floor opening for mats are ready to receive work.

**3.02 PREPARATION**

- A. Mats: Verify size of floor recess before fabricating mats.
- B. Vacuum clean floor recess.

### **3.03 INSTALLATION**

- A. Install walk-off surface in floor recess flush with finish floor after cleaning of finish flooring.

### **3.04 TOLERANCES**

- A. Maximum Gap Formed at Recessed Frame From Mat Size: 1/4 inch.

**END OF SECTION**

**SECTION 12 6613  
TELESCOPING BLEACHERS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Telescoping bleachers.
- B. Electric motor operators, controls, and internal wiring.

**1.02 RELATED REQUIREMENTS**

- A. Section 26 0583 - Wiring Connections: Connection of electric motors and controls.

**1.03 REFERENCE STANDARDS**

- A. ADA Standards - Americans with Disabilities Act (ADA) Standards for Accessible Design 2010.
- B. ASTM D635 - Standard Test Method for Rate of Burning and/or Extent and Time of Burning of Plastics in a Horizontal Position 2018.
- C. ASTM D1929 - Standard Test Method for Determining Ignition Temperature of Plastics 2020.
- D. ASTM D2843 - Standard Test Method for Density of Smoke from the Burning or Decomposition of Plastics 2019.
- E. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2021a.
- F. AWS D1.1/D1.1M - Structural Welding Code - Steel 2020, with Errata (2021).
- G. AWS D1.3/D1.3M - Structural Welding Code - Sheet Steel 2018.
- H. NFPA 102 - Standard for Grandstands, Folding and Telescopic Seating, Tents, and Membrane Structures 2021.
- I. PS 1 - Structural Plywood 2009 (Revised 2019).

**1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
  - 1. Preparation instructions and recommendations.
  - 2. Storage handling and requirements.
  - 3. Installation methods.
- C. Shop Drawings: Complete layout with dimensions, seat heights, row spacing and rise, aisle widths and locations, points of connection to substrate, assembly dimensions, and material types and finishes.
  - 1. Provide drawings customized to this project.
  - 2. Include Professional Engineer certification.
  - 3. Wiring Diagrams: Show locations of motors, electrical wiring, and rough-in connections.
- D. Selection Samples: For each material for which color selection is required, submit samples, 2 by 2 inches in size, illustrating colors and finishes available.
- E. Operation and Maintenance Data: Manufacturer's operation and maintenance instructions, including annual inspection and maintenance and bi-annual inspection by a Professional Engineer or manufacturer factory service personnel.
- F. Warranty: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.

**1.05 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than ten years of documented experience.
- B. Installer Qualifications: Manufacturer's installation crew.

- C. Welder Qualifications: Welding processes and welding operators qualified in accordance with AWS D1.1/D1.1M, AWS D1.3/D1.3M, and no more than 12 months before the start of scheduled welding work.

#### **1.06 DELIVERY, STORAGE, AND HANDLING**

- A. Store, in original packaging, under cover and elevated above grade.

#### **1.07 WARRANTY**

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.
- B. Correct defective Work within a five year period after Date of Substantial Completion. Replace parts that fail under normal use at no extra charge to Owner.

### **PART 2 PRODUCTS**

#### **2.01 MANUFACTURERS**

- A. Telescoping Bleachers:
  - 1. Hussey Seating Company; Maxam Series: [www.husseyseating.com/#sle](http://www.husseyseating.com/#sle).

#### **2.02 TELESCOPING BLEACHERS**

- A. Telescoping Bleachers: Factory assembled tiered benches that retract horizontally into depth approximately the same as a single row depth, with fixed seats mounted on leading edge of platforms.
  - 1. Provide a design certified by a licensed Professional Engineer licensed in the State in which the Project is located.
  - 2. Design to comply with applicable requirements of NFPA 102 and requirements of code authorities having jurisdiction; where conflicts between requirements occur, comply with whichever is more stringent.
  - 3. Design with solid fascia (riser) or seat fronts that conceal interior mechanisms when fully retracted, fitting tightly enough to prevent climbing up face; at front row provide key locked, hinged fascia (skirt) to cover gap between seat riser/fascia and floor.
  - 4. Configurations: As indicated on drawings.
  - 5. Wheelchair Spaces: Allow portions of first row, as indicated, to be manually retracted without affecting other rows; provide removable railings at row two behind wheelchair spaces in compliance with ADA Standards.
  - 6. Operation: Motor operated.
- B. Design Loads: Design to withstand the following loading conditions:
  - 1. Live Load on Structural Supports: 100 psf, minimum, of gross horizontal projection.
  - 2. Live Load on Seats and Walking Surfaces: 120 pounds per linear foot.
  - 3. Lateral Sway Stress on Structural Supports: 24 pounds per linear foot of seat plank.
  - 4. Perpendicular Sway Stress on Structural Supports: 10 pounds per linear foot of seat plank.
- C. Dimensions:
  - 1. See drawings for overall dimensions.
  - 2. Rows: 4.
  - 3. Rise Per Row: 11-5/8 inches.
  - 4. Row Depth: 24 inches.
  - 5. Seat Height Above Tread: 6 inches.
- D. Structural Supports: Steel or aluminum; manufacturer's standard wheeled carriages supporting each tier separately, with moving parts permanently lubricated and metal parts cushioned to prevent metal-to-metal contact during operation.
  - 1. Design so that each row carriage so that it will individually support the design loads and is self supporting when fully assembled without dependence on platform panels or boards, seats, or fascia.
  - 2. Welding: In accordance with AWS D1.1/D1.1M and AWS D1.3/D1.3M.
  - 3. Bolting: Use lock-washers or locknuts.

4. Wheels: Minimum 5 inch diameter by 1-1/8 inch wide, with non-marring rubber tires; ball, roller, or oil-impregnated metal bearings; minimum of 2 wheels at each floor support.
  5. Finish: Manufacturer's standard enamel or powder coating.
  6. Row Locking: Automatically mechanically lock each carriage to adjacent carriages when fully extended.
  7. Unlocking: Automatically unlock all rows before engaging retraction mechanism.
- E. Motor Operation: Manufacturer's standard drive mechanism, using motor adequately sized for the purpose.
1. Provide UL listed electrical components and wiring.
  2. Controls: Start, Stop, Forward, and Reverse in a single control unit.
  3. Control Station: Removable plug-in low-voltage pendant station, with first-row plug-in location for each motor.
  4. Limit Switches: Automatically stop operation when unit has reached fully open or fully closed position.
  5. Provide all wiring internal to bleacher units, to junction box located where indicated; ensure that wiring is not energized except during operation.
  6. Electrical Characteristics: 120V, single phase, 60 Hz.
  7. Provide access to motor from front side of bleachers; a hinged front skirt or hinged section at least 30 inches wide is acceptable.

### **2.03 SEAT AND PLATFORM COMPONENTS**

- A. Seat/Fascia Assembly: Continuous, molded UV-stabilized high-density polyethylene plastic, seat minimum 1 inch thick, textured finish, homogeneous color throughout, color as selected from manufacturer's standard selection; approximately 18 inch long sections independently removable with tongue-and-groove or rabbeted interlock at end joints.
1. Shape: Ergonomically contoured, with internal ribs spaced for natural flexibility; rear edge cantilevered to provide toe room of not less than 3 inches; no openings to trap debris.
  2. Fire Retardance: Self-ignition temperature of 650 degrees F or greater when tested in accordance with ASTM D1929; smoke developed index of 450 or less, when tested in accordance with ASTM E84, or 75 or less when tested in thickness intended for use in accordance with ASTM D2843; and burning extent of 1 inch or less when tested in thickness intended for use in accordance with ASTM D635.
  3. Provide end caps of same material and finish on each exposed end.
  4. Supports: Internal steel reinforcement of each seat segment bolted to platform nose member; minimum two bolts per segment.
- B. Platform, Tread, and Step Structure: Plywood continuously supported on front and rear with side joints tongue-and-grooved.
1. Plywood: PS 1, 5-ply southern pine or polyethylene-overlaid douglas fir or southern pine, Grade A-C.
  2. Plywood Thickness: 5/8 inch, minimum.
  3. Front (Nose), Rear, and Intermediate Supports: Steel channel or tube, hot-dipped galvanized.
  4. Provide end caps of same material and finish on each exposed end.
  5. Finish: High gloss clear urethane, both sides, unless polyethylene finished.
  6. Nosings: Formed steel, minimum, G60/Z275 hot-dipped galvanized.
  7. At aisles provide permanently attached intermediate steps of same construction and finish.
  8. At bottom of aisles provide step in front of first riser, hinged to first platform to fold for storage.

### **2.04 HANDRAILS AND RAILINGS**

- A. Provide the following railings:
1. Aisle Handrails: Single post folding railing segment mounted in center of aisle at every other row beginning at row 2.
  2. End of Row Guardrails: Self-storing, at open ends of sections beginning at row 2.

3. Height: 42 inches above adjacent platform or tread.
- B. Design handrails and railings to withstand the following loads:
  1. Concentrated Load on Handrails: 200 pounds in any direction.
  2. Concentrated Load on Guardrails: 200 pounds in any direction along top rail.
  3. Live Load on Handrails: 50 pounds per linear foot, applied in any direction.
  4. Live Load on Guardrails:
    - a. Horizontal: 50 pounds per linear foot, applied at the guardrail height.
    - b. Vertical: 100 pounds per linear foot, applied vertically to top of guardrail.
- C. Railing Construction: Round steel or aluminum pipe or tube, with formed elbows at corners and caps at ends of straight runs.
  1. Aluminum: 1.66 inches minimum outside diameter; natural anodized finish.
  2. Steel: 1-1/2 inch minimum outside diameter, with 11 gauge, 0.12 inch minimum wall thickness; textured powder coat epoxy finish.

## **2.05 ACCESSORIES**

- A. Fillers and Closures:
  1. Sides of Extended Units: Vinyl curtains.
  2. Vinyl Curtains: 18 ounce vinyl with grommets; color as selected from manufacturer's standard palette.
- B. Motion Monitor: Strobe light and warning horn rated at 150 dB, both of which operate continuously during movement of any section of bleachers; mount strobe light where it is clearly visible to entire bleacher installation.
- C. Scorer's Table: 8 feet wide by 15 inches deep; relocatable to any row of any section without mounting brackets.
- D. Fasteners: Provide hardware and fasteners in accordance with manufacturer's recommendations.
- E. Anchorage: As indicated on drawings; provide hardware in accordance with manufacturer's recommendations.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that field measurements are consistent with those on the shop drawings.
- B. Verify that electrical rough-ins have been installed and are accessible.
- C. Do not begin installation until substrates have been properly prepared and area has been cleared of obstructions.
- D. If substrate preparation is the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

### **3.02 INSTALLATION**

- A. Install in accordance with manufacturer's instructions.
- B. Do not field cut or alter seats, fascia, or structural members without approval.
- C. Provide manufacturer's field representative to inspect completed installation.

### **3.03 ADJUSTING**

- A. Lubricate, test, and adjust each moving assembly to ensure proper operation in compliance with manufacturer's recommendations.

### **3.04 CLEANING**

- A. Clean exposed and semi-exposed assembly surfaces.
- B. Touch up finishes on damaged or soiled areas.



### **3.05 CLOSEOUT ACTIVITIES**

- A. Demonstration and Training: Provide manufacturer's field representative to demonstrate to and train Owner's operating personnel in proper operation of equipment.
  - 1. Location: On site using installed equipment.
  - 2. Time: As agreed between Owner and Contractor.

### **3.06 PROTECTION**

- A. Protect installed products until completion of project.
- B. Touch-up, repair, or replace damaged products before Date of Substantial Completion.

**END OF SECTION**

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**SECTION 14 2100  
ELECTRIC TRACTION ELEVATORS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Complete electric traction elevator systems.
  - 1. Passenger type.
- B. Elevator Maintenance Contract.

**1.02 RELATED REQUIREMENTS**

- A. Section 04 2000 - Unit Masonry: Masonry hoistway enclosure; building-in and grouting hoistway door frames.
- B. Section 09 6500 - Resilient Flooring: Floor finish in car.
- C. Section 26 0533.13 - Conduit for Electrical Systems:
  - 1. Conduit to elevator equipment devices remote from elevator machine room or hoistway.
- D. Section 26 0583 - Wiring Connections:
  - 1. Electrical service to main disconnect located in elevator machine room.
- E. Section 28 4600 - Fire Detection and Alarm:
  - 1. Fire and smoke detectors and interconnecting devices.
  - 2. Fire alarm signal lines to elevator controller cabinet.

**1.03 REFERENCE STANDARDS**

- A. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum 2020.
- B. ADA Standards - Americans with Disabilities Act (ADA) Standards for Accessible Design 2010.
- C. AISC 360 - Specification for Structural Steel Buildings 2016 (Revised 2021).
- D. ASME A17.1 - Safety Code for Elevators and Escalators Includes Requirements for Elevators, Escalators, Dumbwaiters, Moving Walks, Material Lifts, and Dumbwaiters with Automatic Transfer Devices 2019, with Errata (2021).
- E. ASTM B221 - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes 2021.
- F. ASTM B221M - Standard Specification for Aluminum and Aluminum-Alloy Extruded Bars, Rods, Wire, Profiles, and Tubes (Metric) 2021.
- G. AWS D1.1/D1.1M - Structural Welding Code - Steel 2020, with Errata (2021).
- H. ITS (DIR) - Directory of Listed Products current edition.
- I. NEMA LD 3 - High-Pressure Decorative Laminates 2005.
- J. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- K. NFPA 80 - Standard for Fire Doors and Other Opening Protectives 2022.
- L. UL (DIR) - Online Certifications Directory Current Edition.

**1.04 ADMINISTRATIVE REQUIREMENTS**

- A. Coordination:
  - 1. Coordinate work with other installers to provide necessary conduits for proper installation of wiring, including but not limited to, the following:
    - a. Elevator equipment devices remote from elevator machine room or hoistway.
    - b. Remote group automatic panel in lobby from controller cabinet.
    - c. Telephone service for machine room.
    - d. Elevator pit for lighting and sump pump.
    - e. Fire alarm panel from controller cabinet.

2. Coordinate work with other installers for equipment provisions necessary for proper elevator operation, including but not limited to, the following:
  - a. Automatic transfer switches with auxiliary contacts for emergency power transfer status indication.
  - b. Shunt trip devices for automatic disconnection of elevator power prior to fire suppression system activation; include provisions for shunt trip power monitoring.
- B. Preinstallation Meeting: Convene meeting at least one week prior to start of this work.
  1. Review schedule of installation, proper procedures and conditions, and coordination with related work.
- C. Construction Use of Elevator: Not permitted.

#### **1.05 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Submit data on following items:
  1. Signal and operating fixtures, operating panels, and indicators.
  2. Car design, dimensions, layout, and components.
  3. Car and hoistway door and frame details.
  4. Electrical characteristics and connection requirements.
- C. Shop Drawings: Include appropriate plans, elevations, sections, diagrams, and details on following items:
  1. Elevator Equipment and Machines: Size and location of driving machines, power units, controllers, governors, and other components.
  2. Hoistway Components: Size and location of car machine beams, guide rails, buffers, ropes, and other components.
  3. Rail bracket spacing; maximum loads imposed on guide rails requiring load transfer to building structural framing.
  4. Clearances and over-travel of car and counterweight.
  5. Locations in hoistway and machine room of traveling cables and connections for car lighting, telephone, and [\_\_\_\_\_].
  6. Location and sizes of hoistway and car doors and frames.
  7. Electrical characteristics and connection requirements.
  8. Indicate arrangement of elevator equipment and allow for clear passage of equipment through access openings.
- D. Samples: Submit samples illustrating car floor material, car interior finishes, car and hoistway door and frame finishes, and handrail material and finish in the form of cut sheets or finish color selection brochures.
- E. Warranty Documentation: Submit manufacturer warranty and ensure that forms have been completed in Owner's name and registered with manufacturer.
- F. Initial Maintenance Contract.
- G. Maintenance Contract: Submit proposal to Owner for standard one year continuing maintenance contract agreement in accordance with ASME A17.1 and requirements as indicated, starting on date initial maintenance contract is scheduled to expire.
  1. Indicate in proposal the services, obligations, conditions, and terms for agreement period and for renewal options.
- H. Operation and Maintenance Data:
  1. Parts catalog with complete list of equipment replacement parts; identify each entry with equipment description and identifying code.
  2. Operation and maintenance manual.
  3. Schematic drawings of equipment, and wiring diagrams of installed electrical equipment with list of corresponding symbols to identify markings on machine room and hoistway apparatus.

## **1.06 QUALITY ASSURANCE**

- A. Maintain one copy of each quality standard document on site.
- B. Designer Qualifications: Design guide rails under direct supervision of a licensed Professional Structural Engineer experienced in design of this type of work and licensed in the State in which the Project is located.
- C. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with minimum ten years documented experience.
- D. Installer Qualifications: Company specializing in performing work of the type specified and with at least five years of documented experience.
- E. Welder Qualifications: Welding processes and welding operators qualified in accordance with AWS D1.1/D1.1M and no more than 12 months before start of scheduled welding work.
- F. Testing Agency Qualifications: Independent firm specializing in performing testing and inspections of type specified in this section.
- G. Products Requiring Fire Resistance Rating: Listed and classified by ITS (DIR), UL (DIR), or testing agency acceptable to authorities having jurisdiction.
- H. Products Requiring Electrical Connection: Listed and classified by UL (DIR) or testing agency acceptable to authorities having jurisdiction as suitable for the purpose indicated in construction documents.

## **1.07 WARRANTY**

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.
- B. Provide manufacturer's warranty for elevator operating equipment and devices for one year from Date of Substantial Completion.

## **PART 2 PRODUCTS**

### **2.01 MANUFACTURERS**

- A. Basis of Design - Electric Traction Elevators: Otis Elevator Company; Gen2 series..
- B. Other Acceptable Manufacturers - Electric Traction Elevators:
  - 1. Schindler Elevator Corporation; Schindler 3100: [www.us.schindler.com/#sle](http://www.us.schindler.com/#sle).
- C. Substitutions: See Section 01 6000 - Product Requirements.
- D. Products other than Basis of Design are subject to compliance with specified requirements and prior approval of Architect. By using products other than Basis of Design, the Contractor accepts responsibility for costs associated with any necessary modifications to related work, including any design fees.
- E. Source Limitations: Provide elevator and associated equipment and components produced by the same manufacturer as the other elevator equipment used for this project and obtained from a single supplier.

### **2.02 ELECTRIC TRACTION ELEVATORS**

- A. Electric Traction Passenger Elevator:
  - 1. Electric Traction Elevator Equipment:
    - a. Gearless Traction Machine: Single wrapped traction driving sheave, with dual brake.
  - 2. Drive System:
  - 3. Operation Control Type:
  - 4. Service Control Type:
    - a. Standard service control only.
  - 5. Interior Car Height: 93 inch.
  - 6. Electrical Power: 480 volts; alternating current (AC); three phase; 60 Hz.
  - 7. Rated Net Capacity: 2100 pounds.
  - 8. Rated Speed: 100 feet per minute.
  - 9. Hoistway Size: As indicated on drawings.

10. Interior Car Platform Size: As indicated on drawings.
11. Elevator Pit Depth: 60 inch.
12. Overhead Clearance at Top Floor: 151 inch.
13. Travel Distance: As indicated on drawings.
14. Number of Stops: As indicated on drawings.
15. Number of Openings: [ ] Front; [ ] Rear.
16. Traction Machine Location: Top of hoistway shaft.

### **2.03 COMPONENTS**

### **2.04 PERFORMANCE REQUIREMENTS**

- A. Regulatory Requirements: Comply with ASME A17.1, applicable local codes, and authorities having jurisdiction (AHJ).
- B. Accessibility Requirements: Comply with ADA Standards.
- C. Perform structural steel design, fabrication, and installation in accordance with AISC 360.
- D. Perform welding of steel in accordance with AWS D1.1/D1.1M.
- E. Fabricate and install door and frame assemblies in accordance with NFPA 80 and complying with requirements of authorities having jurisdiction (AHJ).
- F. Perform electrical work in accordance with NFPA 70.

### **2.05 OPERATION CONTROLS**

- A. Elevator Controls: Provide landing operating panels, landing indicator panels, and [ ].
  1. Landing Operating Panels: Metallic type, one for originating "Up" and one for originating "Down" calls, one button only at terminating landings; with illuminating indicators.
  2. Landing Indicator Panels: Illuminating.
  3. Comply with ADA Standards for elevator controls.
- B. Interconnect elevator control system with building security, fire alarm, card access, smoke alarm, building management control, and [ ] systems.
- C. Door Operation Controls:
  1. Program door control to open doors automatically when car arrives at floor landing.
  2. Render "Door Close" button inoperative when car is standing at dispatch landing with doors open.
  3. Door Safety Devices: Moveable, retractable safety edges, quiet in operation; equipped with photo-electric light rays.

### **2.06 OPERATION CONTROL TYPE**

### **2.07 MATERIALS**

- A. Extruded Aluminum: ASTM B221 (ASTM B221M), natural anodized finish unless otherwise indicated.
- B. Plastic Laminate: NEMA LD 3, Type HGS, color as selected by Architect from manufacturer's standard line of colors.

### **2.08 CAR AND HOISTWAY ENTRANCES**

- A. Elevator, No. [ ]:
  1. Car and Hoistway Entrances, Main Elevator Lobby:
    - a. Framed Opening Finish and Material: Alkyd enamel on steel.
    - b. Car Door Material: Powder coat on steel, with rigid sandwich panel construction.
    - c. Hoistway Door Material: Powder coat on steel, with rigid sandwich panel construction.

### **2.09 CAR EQUIPMENT AND MATERIALS**

- A. Elevator Car, No. [ ]:
  1. Car Operating Panel: Provide main and auxiliary; flush-mounted applied face plate, with illuminated call buttons corresponding to floors served with "Door Open/Door Close"

buttons, "Door Open" button, "Door Close" button, alarm button, and [\_\_\_\_\_].

- a. Panel Material: Integral with front return; one per car.
  - b. Car Floor Position Indicator: Above door with illuminating position indicators.
  - c. Locate alarm button where it is unlikely to be accidentally actuated; not more than 54 inch above car finished floor.
2. Flooring: Carpeting.
  3. Front Return Panel: Match material of car door.
  4. Door Wall: Plastic laminate on plywood.
  5. Hand Rail: Aluminum, at three side walls. Provide open clearance space 1-1/2 inch (38 mm) wide to face of wall.
    - a. Aluminum Finish: Clear anodized.
  6. Ceiling:

## **2.10 FINISHES**

- A. Powder Coat on Steel: Clean and degrease metal surface; apply one coat of primer; two coats of powder coat.
- B. Finish Paint for Metal Surfaces: Alkyd enamel, semi-gloss, color as selected, comply with VOC limitations of authorities having jurisdiction (AHJ).
- C. Clear Anodized Finish: Class I, AAMA 611 AA-M12C22A41 Clear anodic coating with electrolytically deposited organic seal; not less than 0.7 mils, 0.0007 inch thick.

**END OF SECTION**

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**SECTION 31 1000  
SITE CLEARING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Clearing and protection of vegetation.
- B. Removal of existing debris.

**1.02 RELATED REQUIREMENTS**

- A. Section 01 1000 - Summary: Limitations on Contractor's use of site and premises.
- B. Section 01 5000 - Temporary Facilities and Controls: Site fences, security, protective barriers, and waste removal.
- C. Section 01 5713 - Erosion and Sediment Control.
- D. Section 01 7000 - Execution and Closeout Requirements: Project conditions; protection of bench marks, survey control points, and existing construction to remain; reinstallation of removed products.
- E. Section 31 2200 - Grading: Fill material for filling holes, pits, and excavations generated as a result of removal operations.
- F. Section 31 2323 - Fill: Fill material for filling holes, pits, and excavations generated as a result of removal operations.

**PART 2 PRODUCTS -- NOT USED**

**PART 3 EXECUTION**

**3.01 SITE CLEARING**

- A. Comply with other requirements specified in Section 01 7000.
- B. Minimize production of dust due to clearing operations; do not use water if that will result in ice, flooding, sedimentation of public waterways or storm sewers, or other pollution.

**3.02 EXISTING UTILITIES AND BUILT ELEMENTS**

- A. Coordinate work with utility companies; notify before starting work and comply with their requirements; obtain required permits.
- B. Protect existing utilities to remain from damage.
- C. Do not disrupt public utilities without permit from authority having jurisdiction.
- D. Protect existing structures and other elements that are not to be removed.

**3.03 VEGETATION**

- A. Scope: Remove trees, shrubs, brush, and stumps in areas to be covered by building structure, paving, playing fields, lawns, and planting beds.
- B. Do not remove or damage vegetation beyond the limits indicated on drawings.
- C. Install substantial, highly visible fences at least 3 feet high to prevent inadvertent damage to vegetation to remain:
  - 1. At vegetation removal limits.
- D. In areas where vegetation must be removed but no construction will occur other than pervious paving, remove vegetation with minimum disturbance of the subsoil.
- E. Vegetation Removed: Do not burn, bury, landfill, or leave on site, except as indicated.
  - 1. Chip, grind, crush, or shred vegetation for mulching, composting, or other purposes; preference should be given to on-site uses.
  - 2. Trees: Sell if marketable; if not, treat as specified for other vegetation removed; remove stumps and roots to depth of 18 inches.
  - 3. Sod: Re-use on site if possible; otherwise sell if marketable, and if not, treat as specified for other vegetation removed.

- F. Restoration: If vegetation outside removal limits or within specified protective fences is damaged or destroyed due to subsequent construction operations, replace at no cost to Owner.

**3.04 DEBRIS**

- A. Remove debris, junk, and trash from site.
- B. Leave site in clean condition, ready for subsequent work.
- C. Clean up spillage and wind-blown debris from public and private lands.

**END OF SECTION**

## **SECTION 31 2200 GRADING**

### **PART 1 GENERAL**

#### **1.01 SECTION INCLUDES**

- A. Removal of topsoil.
- B. Rough grading the site for site structures.
- C. Finish grading.

#### **1.02 RELATED REQUIREMENTS**

- A. Section 31 1000 - Site Clearing.
- B. Section 31 2316 - Excavation.
- C. Section 31 2316.13 - Trenching: Trenching and backfilling for utilities.
- D. Section 31 2323 - Fill: Filling and compaction.
- E. Section 32 9219 - Seeding: Finish ground cover.

### **PART 2 PRODUCTS**

#### **2.01 MATERIALS**

- A. Topsoil: See Section 31 2323.
- B. Other Fill Materials: See Section 31 2323.

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

- A. Verify that survey bench mark and intended elevations for the Work are as indicated.
- B. Verify the absence of standing or ponding water.

#### **3.02 PREPARATION**

- A. Identify required lines, levels, contours, and datum.
- B. Stake and flag locations of known utilities.
- C. Provide temporary means and methods to remove all standing or ponding water from areas prior to grading.
- D. Protect site features to remain, including but not limited to bench marks, survey control points, existing structures, fences, sidewalks, paving, and curbs, from damage by grading equipment and vehicular traffic.
- E. Protect trees to remain by providing substantial fencing around entire tree at the outer tips of its branches; no grading is to be performed inside this line.

#### **3.03 ROUGH GRADING**

- A. Remove topsoil from areas to be further excavated, re-landscaped, or re-graded, without mixing with foreign materials.
- B. Do not remove topsoil when wet.
- C. Remove subsoil from areas to be further excavated, re-landscaped, or re-graded.
- D. Do not remove wet subsoil , unless it is subsequently processed to obtain optimum moisture content.
- E. When excavating through roots, perform work by hand and cut roots with sharp axe.
- F. Stability: Replace damaged or displaced subsoil to same requirements as for specified fill.
- G. Remove and replace soils deemed unsuitable by classification and which are excessively moist due to lack surface water control.

### **3.04 SOIL REMOVAL**

- A. Stockpile topsoil to be re-used on site; remove remainder from site.
- B. Stockpile subsoil to be re-used on site; remove remainder from site.
- C. Stockpiles: Use areas designated on site; pile depth not to exceed 8 feet; protect from erosion.

### **3.05 FINISH GRADING**

- A. Before Finish Grading:
  - 1. Verify building and trench backfilling have been inspected.
  - 2. Verify subgrade has been contoured and compacted.
- B. Remove debris, roots, branches, stones, in excess of 1/2 inch in size. Remove soil contaminated with petroleum products.
- C. Where topsoil is to be placed, scarify surface to depth of 3 inches.
- D. In areas where vehicles or equipment have compacted soil, scarify surface to depth of 3 inches.
- E. Place topsoil to nominal depth of 6 inches.
- F. Place topsoil during dry weather.
- G. Remove roots, weeds, rocks, and foreign material while spreading.
- H. Fine grade topsoil to eliminate uneven areas and low spots. Maintain profiles and contour of subgrade.
- I. Lightly compact placed topsoil.
- J. Maintain stability of topsoil during inclement weather. Replace topsoil in areas where surface water has eroded thickness below specifications.

### **3.06 TOLERANCES**

- A. Top Surface of Subgrade: Plus or minus 0.10 foot (1-3/16 inches) from required elevation.
- B. Top Surface of Finish Grade: Plus or minus 0.04 foot (1/2 inch).

### **3.07 REPAIR AND RESTORATION**

- A. Existing Facilities, Utilities, and Site Features to Remain: If damaged due to this work, repair or replace to original condition.
- B. Trees to Remain: If damaged due to this work, trim broken branches and repair bark wounds; if root damage has occurred, obtain instructions from Architect as to remedy.
- C. Other Existing Vegetation to Remain: If damaged due to this work, replace with vegetation of equivalent species and size.

### **3.08 FIELD QUALITY CONTROL**

- A. See Section 31 2323 for compaction density testing.

### **3.09 CLEANING**

- A. Remove unused stockpiled topsoil and subsoil. Grade stockpile area to prevent standing water.
- B. Leave site clean and raked, ready to receive landscaping.

**END OF SECTION**

## **SECTION 31 2316 EXCAVATION**

### **PART 1 GENERAL**

#### **1.01 SECTION INCLUDES**

- A. Excavating for building volume below grade, footings, pile caps, slabs-on-grade, paving, site structures, and utilities within the building.
- B. Trenching for utilities outside the building to utility main connections.
- C. Temporary excavation support and protection systems.

#### **1.02 RELATED REQUIREMENTS**

- A. Section 01 5713 - Erosion and Sediment Control: Slope protection and erosion control.
- B. Section 01 7000 - Execution and Closeout Requirements: Project conditions; protection of bench marks, survey control points, and existing construction to remain; reinstallation of removed products; temporary bracing and shoring. General requirements for dewatering of excavations and water control.
- C. Section 02 4100 - Demolition: Shoring and underpinning existing structures.
- D. Section 31 1000 - Site Clearing: Vegetation and existing debris removal.
- E. Section 31 2200 - Grading: Grading.
- F. Section 31 2316.13 - Trenching: Excavating for utility trenches outside the building to utility main connections.
- G. Section 31 2323 - Fill: Fill materials, backfilling, and compacting.

#### **1.03 REFERENCE STANDARDS**

- A. 29 CFR 1926 - Safety and Health Regulations for Construction Current Edition.

#### **1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Field Quality Control Submittals: Document visual inspection of load-bearing excavated surfaces.

### **PART 2 PRODUCTS**

#### **2.01 MATERIALS**

- A. Bedding and Fill to Correct Over-Excavation:
  - 1. See Section 31 2323 for bedding and corrective fill materials at general excavations.
  - 2. See Section 31 2316.13 for bedding and corrective fill materials at utility trenches.

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

- A. Verify that survey bench mark and intended elevations for the work are as indicated.
- B. Survey existing adjacent structures and improvements and establish exact elevations at fixed points to act as benchmarks.
  - 1. Resurvey benchmarks during installation of excavation support and protection systems and notify Owner if any changes in elevations or positions occur or if cracks, sags, or other damage is evident in adjacent construction.

#### **3.02 PREPARATION**

- A. Identify required lines, levels, contours, and datum locations.
- B. See Section 31 1000 for clearing, grubbing, and removal of existing debris.
- C. Locate, identify, and protect utilities that remain and protect from damage.
- D. Protect bench marks, survey control points, existing structures, fences, sidewalks, paving, and curbs from excavating equipment and vehicular traffic.

- E. Grade top perimeter of excavation to prevent surface water from draining into excavation. Provide temporary means and methods, as required, to maintain surface water diversion until no longer needed, or as directed by Architect.
- F. See Sections 01 7000 and 02 4100 for underpinning and shoring of adjacent structures that could be damaged by excavating work.

### **3.03 TEMPORARY EXCAVATION SUPPORT AND PROTECTION**

- A. Excavation Safety: Comply with OSHA's Excavation Standard, 29 CFR 1926, Subpart P.

### **3.04 EXCAVATING**

- A. Excavate to accommodate new structures and construction operations.
  - 1. Excavate to the specified elevations.
  - 2. Excavate to the length and width required to safely install, adjust, and remove any forms, bracing, or supports necessary for the installation of the work.
  - 3. Cut utility trenches wide enough to allow inspection of installed utilities.
  - 4. See Section 31 2316.26 for required excavation clearances for pipes in utility trenches.
  - 5. Hand trim excavations. Remove loose matter.
- B. Notify Architect of unexpected subsurface conditions and discontinue affected Work in area until notified to resume work.
- C. Do not interfere with 45 degree bearing splay of foundations.
- D. Remove lumped subsoil, boulders, and rock up to 1/3 cubic yard measured by volume.
- E. Provide temporary means and methods, as required, to remove all water from excavations until directed by Architect. Remove and replace soils deemed suitable by classification and which are excessively moist due to lack of dewatering or surface water control.

### **3.05 SUBGRADE PREPARATION**

- A. See Section 31 2323 for subgrade preparation at general excavations.
- B. See Section 31 2316.13 for subgrade preparation at utility trenches.

### **3.06 FILLING AND BACKFILLING**

- A. Do not fill or backfill until all debris, water, unsatisfactory soil materials, obstructions, and deleterious materials have been removed from excavation.
- B. See Section 31 2323 for fill, backfill, and compaction requirements at general excavations.
- C. See Section 31 2316.13 for fill, backfill, and compaction requirements at utility trenches.

### **3.07 REPAIR**

- A. Correct areas that are over-excavated and load-bearing surfaces that are disturbed; see Section 31 2323.

### **3.08 FIELD QUALITY CONTROL**

- A. See Section 01 4000 - Quality Requirements, for general requirements for field inspection and testing.
- B. Provide for visual inspection of load-bearing excavated surfaces by Architect before placement of foundations.

### **3.09 CLEANING**

- A. Stockpile excavated material to be re-used in area designated on site in accordance with Section 31 2200.
- B. Remove excavated material that is unsuitable for re-use from site.
- C. Remove excess excavated material from site.

### **3.10 PROTECTION**

- A. Divert surface flow from rains or water discharges from the excavation.

- B. Prevent displacement of banks and keep loose soil from falling into excavation; maintain soil stability.
- C. Protect open excavations from rainfall, runoff, freezing groundwater, or excessive drying so as to maintain foundation subgrade in satisfactory, undisturbed condition.
- D. Protect bottom of excavations and soil adjacent to and beneath foundation from freezing.
- E. Keep excavations free of standing water and completely free of water during concrete placement.

**END OF SECTION**

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**SECTION 31 2316.13  
TRENCHING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Trenching, backfilling and compacting for sewer mains, water mains, and laterals to mains.

**1.02 RELATED REQUIREMENTS**

- A. Section 31 2323 - Fill and Backfill.

**1.03 REFERENCE STANDARDS**

- A. ASTM D698 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Standard Effort (12,400 ft-lbf/ft<sup>3</sup> (600 kN-m/m<sup>3</sup>)) 2012 (Reapproved 2021).
- B. ASTM D1556/D1556M - Standard Test Method for Density and Unit Weight of Soil in Place by Sand-Cone Method 2015, with Editorial Revision (2016).
- C. ASTM D2167 - Standard Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method 2015.
- D. ASTM D2321-05 - Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications.
- E. ASTM D3017 - Standard Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth); 2005.

**1.04 SUBMITTALS**

- A. See Section 01 3300 for submittal procedures.
- B. Samples: 10 lb sample of each type of fill; submit in air-tight containers to testing laboratory.
- C. Materials Sources: Submit name of imported materials source.
- D. Fill Composition Test Reports: Results of laboratory tests on proposed and actual materials used.
- E. Compaction Density Test Reports.
- F. Proposed backfill and compaction plan.

**1.05 DELIVERY, STORAGE, AND HANDLING**

- A. When necessary, store materials on site in advance of need.
- B. When fill materials need to be stored on site, locate stockpiles where designated by Owner.
  - 1. Separate differing materials with dividers or stockpile separately to prevent intermixing.
  - 2. Prevent contamination.
  - 3. Protect stockpiles from erosion and deterioration of materials.

**PART 2 PRODUCTS**

**2.01 FILL MATERIALS**

- A. Use fill materials as described in Section 31 2323 - Fill and Backfill.

**PART 3 EXECUTION**

**3.01 EXAMINATION**

- A. Verify that survey bench marks and intended elevations for the work are as indicated.

**3.02 TRENCHING**

- A. Topsoil Removal and Storage: All topsoil, loam, or other designated materials covering the areas to be excavated shall be removed and stockpiled, unless stated otherwise. Stockpiles shall be established only at approved locations, and they shall be properly maintained until reused.
- B. Pavement Cutting and Breaking: Pavement covering those areas to be excavated shall be broken up, removed and then disposed of in accordance with applicable regulations. All paved

areas shall be first cut or scored continuously along a straight line, parallel to and on each side of the centerline of the trench, at a width sufficient for the trench excavation.

- C. Pavement cuts in concrete pavement or pavement with a concrete base shall be made by scoring or cutting the concrete with a concrete saw. The depth of the saw cut shall be a minimum of one-third the concrete pavement thickness. The concrete pavement shall then be broken up with hand operated, pneumatic paving breakers, before excavation. Drop hammers or "headache balls" will not be permitted for breaking up concrete pavement.
- D. Pavement cuts in blacktop pavement shall be made by scoring or cutting the pavement with a concrete saw, pneumatic paving breaker or drop-hammer-type pavement cutter. The pavement cut must be continuous, and made for the full depth of the pavement.
- E. Excavation within paved areas and street pavement shall be preceded by cutting the pavement with power tools as described in these Specifications.
- F. Notify Construction Manager of unexpected subsurface conditions and discontinue affected Work in area until notified to resume work.
- G. Slope banks of excavations in accordance with OSHA requirements. Where sloping of banks can not be accomplished due to onsite restrictions trench walls shall be shored and braced utilizing sheeting methods or other appropriate methods of trench wall stabilization. The Contractor shall maintain all trenches and excavations in a safe condition.
- H. Cut trenches as shown on drawings and/or wide enough to allow inspection of installed utilities.
- I. Trench excavations shall be carried to the lines and subgrades shown on the drawings, or ordered by the Construction Manager. The Contractor shall excavate all material encountered, and trench widths for pipes shall be held within the minimum and maximum limits shown on the drawings. Excavation shall be such that a flat bottom trench of allowable width is established at the required subgrade elevation for subsequent installation of pipe foundation material.
- J. When ordered by the Construction Manager, as a result of unsuitable soil conditions, trench excavation shall be carried below the required subgrade and a special pipe foundation installed in conformance with the Contract Documents. The Contractor will be paid for special pipe foundation, when ordered by the Construction Manager, under the appropriate bid items. However, if special pipe foundation is required as a result of the Contractor's method of operation, no payment for special pipe foundation will be made. In any event, the Contractor's operations shall result in a stable base free from standing water, consistent with trench width requirements. The contractor shall provide appropriate means and methods to maintain trench width requirements.
- K. Rock shall be trimmed back on each side of the trench so that no rock protrudes within 6" of the installed pipe. Rock shall also be trimmed back across the bottom of the trench so that no rock protrudes within 6" of the installed pipe.
- L. Trenches shall not be opened for more than 200' in advance of installed pipe, nor left unfilled for more than 100' in the rear thereof. Excavation of the trench shall be fully completed at least 20' in advance of pipe laying operations.
- M. Hand trim excavations. Remove loose matter.
- N. Remove large stones and other hard matter that could damage piping or impede consistent backfilling or compaction.
- O. Provide temporary means and methods, as required, to remove all water from trenching until directed by the Construction Manager. Remove and replace soils deemed unsuitable by classification and which are excessively moist due to lack of dewatering or surface water control.
- P. Determine the prevailing groundwater level prior to trenching. If the proposed trench extends less than 1 foot into the prevailing groundwater, control groundwater intrusion with perimeter drains routed to sump pumps, or as directed by the Construction Manager.

### **3.03 SURPLUS MATERIAL**

- A. On-site disposal of surplus materials from excavation, if permitted, shall be ordered by the Construction Manager . If required that surplus material be hauled from the site, the Contractor shall make all arrangement for disposal sites, unless the Owner has designated special locations. All expenses for disposal shall be borne by the Contractor. Bidders shall carefully investigate all aspects of surplus material disposing operations. Pavement rubble, tree stumps, trash and debris shall be disposed of off-site.
- B. When it is necessary to haul soft or wet material over streets or pavements, the Contractor shall provide suitable watertight vehicles to prevent deposits on the streets or pavements. In all cases where any materials are dropped from the vehicles of the Contractor, he shall clean up the same as often as directed, and keep the crosswalks, street and pavements clean and free from debris.
- C. Prior to depositing surplus material at any off-site location, the Contractor shall obtain a written agreement between himself and the owner of the property on which the disposal of the material is proposed. The agreement shall state that the owner of the property gives permission for the Contractor to enter and deposit material of a particular classification on the owner's property at no expense to the project Owner, and shall include any other conditions pertinent to the situation as agreed upon by each party. A copy of said agreement shall be furnished to the Construction Manager .

### **3.04 MAINTENANCE OF EXCAVATIONS**

- A. All excavations shall be properly maintained while they are open and exposed. Sufficient and suitable barricades, warning lights, flood lights, signs, etc., to protect life and property shall be installed and maintained at all times until the excavation has been backfilled and graded to a safe and satisfactory condition.
- B. The Contractor shall tightly enclose all open trenches and pits overnight and during non-work periods with snow fencing or similar type fencing, adequately supported so as to form a tight barricade. This work is in addition to that required under the Standard Requirements of this clause.

### **3.05 REMOVAL OF WATER**

- A. All excavations shall be maintained in a dry condition. The Contractor shall build all drains and do all ditching, pumping, bailing, and all other work necessary to keep the excavation clear of groundwater, sewage, or storm water during the progress of the work and until the finished work is completed to ensure that the work is safe from damage.
- B. Where suitable construction conditions cannot be obtained by other methods, the Contractor shall install and operate a wellpoint dewatering system to drain the site effectively. Wellpoint systems shall be sufficient in size to dewater excavations 2' below subgrade and shall be capable of maintaining the water table at such elevation until the work required to be constructed in the dry is completed, and until all structures are safe from flotation due to high groundwater. To this end the wellpoint system shall be operated continuously on a 24-hour day, 7-day week schedule. Wellpoint systems shall be designed and supervised by a reputable dewatering equipment supplier or contractor.
- C. The wellpoint system shall have standby pumping units which must be operated for at least 10 minutes each day. All water pumped or drained from the work shall be disposed of in a manner satisfactory to the Construction Manager . Necessary precautions shall be taken to protect all construction against flooding. Cost of wellpointing shall be included in the prices bid for trenching.
- D. The Contractor's methods shall result in an excavated trench having a stable base free of any standing water. Cost of removal of water, irrespective of methods used, shall be including the unit bid prices. No separate payment shall be made for this work.
- E. Backfilling shall be started as soon as structures or pipe installation has been completed and concrete has acquired a suitable degree of strength, and proceed expeditiously thereafter. Backfill shall be started at the lowest section of the area to be backfilled. Natural drainage

shall not be obstructed at any time.

- F. Backfill material shall be inspected prior to placement and all visible roots, vegetation, organic matter, or other foreign debris shall be removed. Stones shall not be placed in clusters which will create voids.
- G. Where excavated rock fragments are of such size that they cannot be used for backfilling, and/or Contractor elects to dispose of all excavated rock at off-site locations, but in any event the quantity of on-site material is insufficient to complete the backfilling of the excavated area and Special Backfill has not been specified or ordered by the Construction Manager, then the Contractor shall borrow suitable material and complete the backfilling requirements at no additional cost to the Owner.
- H. Backfill material shall not be placed when moisture content is too high to allow proper compaction. When material is too dry for adequate compaction, water shall be added to the extent necessary.
- I. No backfill material shall be placed on frozen ground nor shall the material itself be frozen when placed. No calcium chloride or other chemicals shall be added to prevent freezing. Material incorporated in the backfilling operation which is not in satisfactory condition shall be subject to rejection and removal at the Contractor's expense.
- J. Backfill to contours and elevations indicated using unfrozen materials.
- K. Fill up to subgrade elevations unless otherwise indicated.
- L. Employ a placement method that does not disturb or damage other work.
- M. Systematically fill to allow maximum time for natural settlement. Do not fill over porous, wet, frozen or spongy subgrade surfaces.
- N. Maintain optimum moisture content of fill materials to attain required compaction density.
- O. Place and compact pipe bedding materials in equal continuous layers not exceeding 6 inches compacted depth.
- P. Pipe Bedding Material: Pipe foundations and pipe sidefills to a depth of 1' above the pipe shall be placed in 6" layers and thoroughly compacted by approved mechanical methods to insure firm bedding and side support. Pipe bedding material is specified in Section 31 2323. The entire surface of the pipe bedding material shall be compacted by approved mechanical means.
- Q. The Contractor shall submit his proposed backfill compaction method plan for approval prior to the start of this work.
- R. Trench and Backfill: The remainder of the trench shall be backfilled and consolidated in accordance with one of the following procedures, depending on the location of the trench and adjacent land use.
  - 1. Procedure I: For pipelines through unimproved areas where subsequent settlement of the backfill above the pipe bedding material can be tolerated:
    - a. Backfill material shall be placed in layers not exceeding 12" thick in the trench and each layer compacted by mechanical means. The top layers shall be compacted mechanically and mounded to allow for subsequent settlement. Maintain trench surface until completion of contract and repair as necessary within guarantee period.
  - 2. Procedure II: For streets and paved areas where permanent pavement is not to be placed immediately after backfilling and for lawns and areas where minimum subsequent settlement of the backfill above the pipe bedding material is required:
    - a. Same as for Procedure I, except surface of backfill shall be compacted by mechanical means before placement of temporary paving or pavement subbase.
    - b. For lawn areas and similar locations, top of backfill shall be compacted by mechanical means and surface maintained prior to topsoil installation, fine grading, and seeding.
  - 3. Procedure III: For highways, streets, or pavement where permanent pavement is to be placed immediately or soon after completion of backfill:
    - a. Backfill material shall be placed in layers not exceeding 6" thick and each layer thoroughly compacted by mechanical means.

4. Under pipe bedding, pipe bedding, pipe bedding, and pipe bedding: 95 percent of maximum dry density.
  5. Trenches under lawns or gardens; around structures, above footings; embankment and rough site grading: 90 percent of maximum dry density
  6. At other locations: 85 percent of maximum dry density.
  7. The Construction Manager reserves the right to order additional "In-Place Density" tests over and above those required under 3.10 to ascertain consistent conformance with the above compaction requirements for each situation.
- S. Reshape and re-compact fills subjected to vehicular traffic.
- T. Refer to Section 31 2323 for materials and use.

### **3.06 TOLERANCES**

- A. Top Surface of General Backfilling: Plus or minus 1 inch from required elevations.
- B. Top Surface of Backfilling Under Paved Areas: Plus or minus 1 inch from required elevations.

### **3.07 FIELD QUALITY CONTROL**

- A. See Section 01 4000 - Quality Requirements, for general requirements for field inspection and testing.
- B. Perform compaction density testing on compacted fill in accordance with ASTM D1556, ASTM D1556, ASTM D1556, or ASTM D1556.
- C. Evaluate results in relation to compaction curve determined by testing uncompacted material in accordance with ASTM D 698 ("standard Proctor").
- D. If tests indicate work does not meet specified requirements, remove work, replace and retest.
- E. Frequency of Tests: one every 100 LF of trench until Backfill and Compaction Method Plan is approved. The Backfill and Compaction Method Plan shall consist of a written description of the materials, methods, and equipment proposed, and test data demonstrating the proposed materials, methods, and equipment provide the levels of compaction required in these documents. Compaction tests shall be conducted at random intervals over the entire trench depth. One compaction test shall be provided every 500 LF of trench after approval of Backfill and Compaction Method Plan. Any change in material or method will result in testing at the 100 LF interval until revised Method is approved..

### **3.08 EXISTING FACILITIES**

- A. General: The Drawings indicate existing subsurface facilities likely to be encountered during construction of the work, or located in such close proximity to the work to be done under the Contract as to require special precautions and methods for their protection. These facilities include sewers, drains, water mains, conduits and their appurtenances. However, all sizes, locations and heights or depths indicated are only approximately correct and the Contractor shall conduct his operations with caution and satisfy himself as to the accuracy of the information given. He shall not claim nor shall he be entitled to receive compensation for damages sustained by reason of the inaccuracy of the information given or by reason of his failure to properly maintain and support such structures.
  1. There may be other subsurface facilities, the existence and/or location of which are not known, such as individual water and gas services, electrical conduits, telephone, unknown storm drains, etc. The Contractor shall consult with the owners of these facilities and shall determine, prior to construction, the location and depth of any such facilities which may exist in the area to be excavated. The contractor shall follow all requirements of the Safe Dig protocols.
- B. Notification and Protection Procedures: Except where superseded by State or local regulations, or in the absence of any applicable regulations, the Contractor shall observe and comply with the following steps:
  1. Prior to excavating or blasting, determine correct field locations of all nearby underground facilities or arrange for the owner thereof to locate same.

2. Prior to excavating or blasting, notify owners of nearby underground facilities when excavating or blasting is to take place, allowing them reasonable time to institute precautionary procedures or preventive measures which they deem necessary for protection of their facilities.
  3. Prior to excavating or blasting, in cooperation with said owners, provide temporary support and protection of those underground facilities which may be especially vulnerable to damage by virtue of their location or those which could create hazardous conditions in the area if damaged (i.e., gas mains, electrical cable, etc.).
- C. In the event of damage to any underground facility from the Contractor's operations, immediately notify the owner thereof. No backfilling shall begin at such facility until repairs have been made by the contractor.
  - D. In case of an electrical short, or escape of gas or hazardous fluids (resulting from damage to an underground facility), immediately notify all persons who might be endangered and assist in their evacuation from the area.
  - E. Support of Existing Facilities: Existing facilities encountered within an excavated area shall be adequately supported, blocked and/or braced in a manner approved by the owner of the facility. Such supports shall be left in place, if required by said owner, and to the extent so required. Backfilling and compaction under and around the facilities shall be accomplished with extreme caution so as not to disturb or damage the facility or any supports thereof, and so as to prevent future settlement and possible rupture of the facilities.
  - F. Relocation of Existing Facilities: Should the location or position of any gas or water pipe, public or private sewer or drain, conduit or other structure be such as, in the opinion of the Construction Manager, to require its removal, realignment or change, such alteration shall be without cost to the Contractor for the work of removal, realignment or change only; however, such structure shall be uncovered and supported or sustained by the Contractor at his own cost and expense, before such removal or before and after such realignment or change, as constituting part of his Contract. The Contractor shall not become entitled to claim any damages or extra compensation for or on account of the presence of such structures or on account of any delay due to removal or rearrangement of the same, but the Contractor shall be entitled to such an extension of time for the completion of the work as the Construction Manager shall decide that the work has been delayed by the removal, realignment or change of any such obstruction.
  - G. Specific Protection of Water Mains: Where a minimum 10' horizontal separation or a minimum 18" vertical separation (bottom of water pipe to top of sewer pipe) cannot be maintained between a water main and sewer line, one or more of the following remedies shall be incorporated in the work as directed by the Construction Manager.
    1. Encase pipe being installed in a watertight steel casing for 10'-0" each side of crossing.
    2. Sewer line to be AWWA Water Works Grade 150 psi pressure rated pipe, pressure tested to ensure water tightness.
    3. One full length of water main shall be centered over the sewer line, so that both joints will be as far from the sewer as possible.
    4. Relocate water main to obtain minimum vertical separation.
    5. The Contractor shall, prior to start of work, stake out or have staked out, all existing utilities that exist within his work area.
    6. Any water services damaged, temporarily relocated or repaired shall be reconstructed using HDPE piping up to and including 2" diameter. Above 2" diameter materials utilized shall be as determined by the Owner.

### **3.09 CLEANING**

- A. Finish grading of all areas disturbed by trenching operations shall be completed within 14 days of pipe installation unless otherwise approved.
- B. Leave unused materials in a neat, compact stockpile.
- C. Remove unused stockpiled materials, leave area in a clean and neat condition. Grade stockpile area to prevent standing surface water.

D. Leave borrow areas in a clean and neat condition. Grade to prevent standing surface water.

**END OF SECTION**

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**SECTION 31 2323  
FILL**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Filling, backfilling, and compacting for building volume below grade.
- B. Backfilling and compacting for utilities outside the building to utility main connections.
- C. Filling holes, pits, and excavations generated as a result of removal (demolition) operations.

**1.02 RELATED REQUIREMENTS**

- A. Section 31 2200 - Grading: Site grading.
- B. Section 31 2316 - Excavation: Removal and handling of soil to be re-used.
- C. Section 31 2316.13 - Trenching: Excavating for utility trenches outside the building to utility main connections.

**1.03 REFERENCE STANDARDS**

- A. ASTM C136/C136M - Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates 2019.
- B. ASTM D2487 - Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System) 2017, with Editorial Revision (2020).

**1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Soil Samples: 10 pounds sample of each type of fill; submit in air-tight containers to testing laboratory.
- C. Materials Sources: Submit name of imported materials source.
- D. Fill Composition Test Reports: Results of laboratory tests on proposed and actual materials used, including manufactured fill.
- E. Compaction Density Test Reports.
- F. Testing Agency Qualification Statement.

**1.05 DELIVERY, STORAGE, AND HANDLING**

- A. When necessary, store materials on site in advance of need.
- B. When fill materials need to be stored on site, locate stockpiles where agreed upon during the pre construction meeting.
  - 1. Separate differing materials with dividers or stockpile separately to prevent intermixing.
  - 2. Prevent contamination.
  - 3. Protect stockpiles from erosion and deterioration of materials.

**PART 2 PRODUCTS**

**2.01 FILL MATERIALS**

- A. General Fill: Subsoil excavated on-site.
  - 1. Graded.
  - 2. Free of lumps larger than 3 inches, rocks larger than 2 inches, and debris.
  - 3. Complying with ASTM D2487 Group Symbol CL.
- B. Granular Fill : Pit run crushed and washed stone; free of shale, clay, friable material and debris.
  - 1. Graded in accordance with ASTM C136/C136M, within the following limits:
    - a. 2 inch sieve: 100 percent passing.
    - b. 1 inch sieve: 95 percent passing.
    - c. 3/8 inch sieve: 55 to 85 percent passing.
    - d. No. 4 sieve: 35 to 60 percent passing.

- e. No. 16 sieve: 15 to 35 percent passing.
  - f. No. 40: 10 to 25 percent passing.
  - g. No. 200: 5 to 10 percent passing.
- C. Select Granular Fill: Select Granular Fill shall meet all of the material and additional requirements as set forth for granular fill except that no more than 3 percent by weight be finer than 0.02 mm or roughly 8 percent by weight finer than the number 200 sieve. Select Granular Fill shall be used below floor slabs, in pavement areas and below exterior finished concrete such as sidewalks.
- D. Topsoil: Topsoil excavated on-site.
- 1. Select.
  - 2. Graded.
  - 3. Free of roots, rocks larger than 1/2 inch, subsoil, debris, large weeds and foreign matter.
  - 4. Acidity range (pH) of 5.5 to 7.5.
  - 5. Containing a minimum of 4 percent and a maximum of 25 percent inorganic matter.
  - 6. Complying with ASTM D2487 Group Symbol OH.
- E. Pipe Bedding (for PVC, ductile iron, copper mains/laterals): Crushed Stone, Pit run washed stone, sand and gravel or blends of these materials; free of shale, clay, friable material and debris.
- 1. Pipe Bedding material shall be used to bed pipe within utility trenches as shown on the Drawings. The pipe bedding material shall be composed of sound durable material that does not contain deleterious materials, topsoil, organics, construction debris etc. The material shall have a Plasticity Index (PI) of 5 or less for the fraction passing the No. 40 sieve.
  - 2. The material shall have less than 20 percent loss based on the Magnesium Sulfate Soundness Test (ASTM C-88) after 4 cycles.
  - 3. Shall meet the following gradation:
    - a. 1-1/2 inch sieve: 100 percent passing.
    - b. 1/4 inch sieve: 30 to 65 percent passing.
    - c. No. 40: 5 to 40 percent passing.
    - d. No. 200: 0 to 10 percent passing.
  - 4. Not more than 30 percent, by weight, of the particles retained on the 3/4 inch sieve shall consist of flat or elongated particles having a length more than 3 times the width. The material shall be uniformly graded with the limits specified, gap graded material being unsuitable.
- F. Pipe Bedding (for HDPE mains/laterals): Class I and Class II gravels and sands.
- 1. Class I - Manufactured angular, granular material with little or no fines. Angular crushed stone, particle size 1/4 inch to 1 1/2 inch.
  - 2. Class II - Coarse-grained soils with little or no fines.
  - 3. Maximum particle sizes based on pipe sizes:
    - a. Up to and including 4-inch diameter pipe: 1/2 inch
    - b. 6-inch to 8-inch diameter pipe: 3/4 inch
    - c. 10-inch to 16-inch diameter pipe: 1 inch
    - d. Pipes larger than 16-inch diameter: 1 1/2 inch
- G. Coarse Aggregate: Crushed rock, free of shale, clay, friable material and debris.
- 1. Graded as follows:
    - a. No. 1A Stone:
      - 1) 1/2 inch: 100 percent passing.
      - 2) 1/4 inch: 90 - 100 percent passing.
      - 3) 1/8 inch: 0 - 15 percent passing.
      - 4) No. 200: 0 - 1.0 percent passing.
    - b. No. 1B Stone:
      - 1) 1/4 inch: 100 percent passing.
      - 2) 1/8 inch: 90 - 100 percent passing.

- 3) No. 80: 0 - 15 percent passing.
- 4) No. 200: 0 - 1.0 percent passing.
- c. No. 1 Stone:
  - 1) 1 inch: 100 percent passing.
  - 2) 1/2 inch: 90 - 100 percent passing.
  - 3) 1/4 inch: 0 - 15 percent passing.
  - 4) No. 200: 0 - 1.0 percent passing.
- d. No. 2 Stone:
  - 1) 1-1/2 inch: 100 percent passing.
  - 2) 1 inch: 90 - 100 percent passing.
  - 3) 1/2 inch: 0 - 15 percent passing.
  - 4) No. 200: 0 - 1.0 percent passing.
- e. No. 3A Stone:
  - 1) 2 inch: 100 percent passing.
  - 2) 1-1/2 inch: 90 - 100 percent passing.
  - 3) 1 inch: 0 - 15 percent passing.
  - 4) No. 200: 0 - 1.0 percent passing.
- f. No. 3 Stone:
  - 1) 2-1/2 inch: 100 percent passing.
  - 2) 2 inch: 90 - 100 percent passing.
  - 3) 1-1/2 inch: 35 - 70 percent passing.
  - 4) 1 inch: 0 - 15 percent passing.
  - 5) No. 200: 0 - 1.0 percent passing.
- g. No. 5 Stone:
  - 1) 4 inch: 90 - 100 percent passing.
  - 2) 3 inch: 0 - 15 percent passing.
  - 3) No. 200: 0 - 0.7 percent passing.
- h. 50-50 Mix No. 1 and No. 2 Stone (ASTM No. 57 Stone):
  - 1) 1-1/2 inch: 100 percent passing.
  - 2) 1 inch: 95 - 100 percent passing.
  - 3) 1/2 inch: 25 - 60 percent passing.
  - 4) No. 4: 0 - 10 percent passing.
  - 5) No. 200: 0 - 1 percent passing.

## **2.02 ACCESSORIES**

- A. Geotextile Fabric: Non-biodegradable, woven , 500X ; non woven, 140N manufactured by Mirafi.

## **2.03 SOURCE QUALITY CONTROL**

- A. See Section 01 4000 - Quality Requirements, for general requirements for testing and analysis of soil material.
- B. Where fill materials are specified by reference to a specific standard, test and analyze samples for compliance before delivery to site.
- C. If tests indicate materials do not meet specified requirements, change material and retest.
- D. Provide materials of each type from same source throughout the Work.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that survey bench marks and intended elevations for the Work are as indicated.
- B. Identify required lines, levels, contours, and datum locations.
- C. Verify areas to be filled are not compromised with surface or ground water.

### **3.02 PREPARATION**

- A. Scarify and proof roll subgrade surface to a depth of 6 inches to identify soft spots.

- B. Cut out soft areas of subgrade not capable of compaction in place. Backfill with general fill.
- C. Compact subgrade to density equal to or greater than requirements for subsequent fill material.
- D. Until ready to fill, maintain excavations and prevent loose soil from falling into excavation.

### **3.03 FILLING**

- A. Fill up to subgrade elevations unless otherwise indicated.
- B. Employ a placement method that does not disturb or damage other work.
- C. Systematically fill to allow maximum time for natural settlement. Do not fill over porous, wet, frozen or spongy subgrade surfaces.
- D. Maintain optimum moisture content of fill materials to attain required compaction density.
- E. Granular Fill: Place and compact materials in equal continuous layers not exceeding 6 inches compacted depth.
- F. Soil Fill: Place and compact material in equal continuous layers not exceeding 8 inches compacted depth.
- G. Slope grade away from building minimum 2 inches in 10 feet, unless noted otherwise. Make gradual grade changes. Blend slope into level areas.
- H. Correct areas that are over-excavated.
  - 1. Load-bearing foundation surfaces: Use structural fill, flush to required elevation, compacted to 100 percent of maximum dry density.
  - 2. Other areas: Use general fill, flush to required elevation, compacted to minimum 97 percent of maximum dry density.
- I. Compaction Density Unless Otherwise Specified or Indicated:
  - 1. Under paving, slabs-on-grade, and similar construction: 97 percent of maximum dry density.
  - 2. At other locations: 95 percent of maximum dry density.
- J. Reshape and re-compact fills subjected to vehicular traffic.
- K. Maintain temporary means and methods, as required, to remove all water while fill is being placed as required, or until directed by the Architect. Remove and replace soils deemed unsuitable by classification and which are excessively moist due to lack of dewatering or surface water control.

### **3.04 TOLERANCES**

- A. Top Surface of General Filling: Plus or minus 1 inch from required elevations.
- B. Top Surface of Filling Under Paved Areas: Plus or minus 1 inch from required elevations.

### **3.05 FIELD QUALITY CONTROL**

- A. See Section 01 4000 - Quality Requirements, for general requirements for field inspection and testing.

### **3.06 CLEANING**

- A. See Section 01 7419 - Construction Waste Management and Disposal, for additional requirements.
- B. Remove unused stockpiled materials, leave area in a clean and neat condition. Grade stockpile area to prevent standing surface water.

**END OF SECTION**

**SECTION 31 6615  
HELICAL FOUNDATIONS PILES**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Helical piles used to support compression loads.

**1.02 RELATED REQUIREMENTS**

- A. Section 31 2316 - Excavation.

**1.03 PRICE AND PAYMENT PROCEDURES**

- A. See Section 01 2200 - Unit Prices, for additional unit price requirements.
- B. Base bids on anchor/pile quantity and lengths as determined by the helical pile contractor to support the service load indicated in the drawings.
- C. No additional payment will be made for withdrawn, damaged, rejected, or misplaced piles; for any portion of a pile remaining above the cut-off elevation; for backdriving; for cutting off piles, or for any cut off length of piles.

**1.04 DEFINITIONS**

- A. Specific terms used in this section are defined below. Terms not defined below are defined in DFI TM-GLOS-1 first and then by common usage.
- B. Extension Section: Helical foundation component installed between lead section and load transfer device.
- C. Effective Torsional Resistance: Average installation torque typically taken over a distance equal to last three diameters of penetration of largest helix plate.
- D. Geotechnical Capacity (or, Ultimate Soil Capacity): Maximum load resisted.
- E. Lead Section: First helical foundation component installed in soil.
- F. Limit State: Condition beyond which a helical foundation component is unfit for service.
  - 1. Serviceability Limit State: Foundation no longer useful for its intended function.
  - 2. Strength Limit State: Foundation is unsafe.
- G. Loads: Forces or other actions that result from weight of all building materials, occupants and their possessions, environmental effects, differential movement, and restrained dimensional changes. Permanent loads are those loads in which variations over time are rare or of small magnitude. All other loads are variable loads (see also Service Load below).
- H. Load Test: Procedure to test capacity and relation of load to movement.
- I. Mechanical Strength: Maximum tension load resisted by structural elements of helical foundation.
- J. Service Load: Magnitude of loads determined by Architect, including dead load, live load and other imposed by building code requirements
- K. Reveal: Distance along longitudinal axis from ground surface to end of last installed extension of a foundation.
- L. Safety Factor: Ratio of ultimate load capacity to service.
- M. Ultimate Capacity: Limit state based on lesser of mechanical strength or geotechnical capacity and defined as point at which helical foundation can resist no additional load.

**1.05 REFERENCE STANDARDS**

- A. AISC 360 - Specification for Structural Steel Buildings 2016 (Revised 2021).
- B. ASTM A29/A29M - Standard Specification for General Requirements for Steel Bars, Carbon and Alloy, Hot-Wrought 2020.
- C. ASTM A36/A36M - Standard Specification for Carbon Structural Steel 2019.

- D. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products 2017.
- E. ASTM A500/A500M - Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes 2021a.
- F. ASTM A572/A572M - Standard Specification for High-Strength Low-Alloy Columbium-Vanadium Structural Steel 2021, with Editorial Revision.
- G. ASTM D1143/D1143M - Standard Test Methods for Deep Foundation Elements Under Static Axial Compressive Load 2020.
- H. DFI TM-GLOS-1 - Deep Foundation Institute Technical Manual; Glossary of Foundation Terms 1981.
- I. RCSC (HSBOLT) - Specification for Structural Joints Using High-Strength Bolts; Research Council on Structural Connections 2014, with Errata (2015).
- J. SAE J429 - Mechanical and Material Requirements for Externally Threaded Fasteners 2014.

#### **1.06 ADMINISTRATIVE REQUIREMENTS**

- A. Preinstallation meeting: Conduct a preinstallation meeting one week prior to start of work of this section; require attendance by all affected installers.
- B. Scheduling: Schedule pile driving to occur between hours of 9 AM and 5 PM.

#### **1.07 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Product list, with manufacturer's model designations; published capacities for installed assemblies, including load transfer devices.
- C. Design Data: Submit documentation of foundation design, signed and certified by a licensed NY State Professional Engineer; include:
  - 1. Statement that proposed helical piles meet specified design criteria.
  - 2. Service load on each foundation element.
  - 3. Maximum allowable installation torque of each selected product.
  - 4. Calculated theoretical geotechnical capacity.
  - 5. Minimum effective torsional resistance requirements.
  - 6. Minimum embedment lengths and such other site specific embedment depth requirements.
  - 7. Inclination angle and location tolerance requirements.
  - 8. Pre-tensioning requirements, if any.
  - 9. Submit not less than four weeks prior to start of foundation installation.
  - 10. Note that minimum safety factor = 2.0.
- D. Calibration Reports for Testing Equipment: Submit certified copies of calibration of torque measuring equipment and load test measuring equipment to be used on project, performed within one year of starting date of installation.
- E. Designer's Qualification Statement.
- F. Installer's Qualification Statement.
- G. Surveyor's Qualification Statement.
- H. Installation Logs:
  - 1. Submit a copy of the log of each individual foundation element within 24 hours after installation is completed.
  - 2. Submit final copy of all installation logs within two weeks after completing all helical foundation work.
- I. Field Test Reports.
- J. Project Record Documents: After work is complete, submit certification from surveyor that installed foundation locations are as shown on drawings.

## **1.08 QUALITY ASSURANCE**

- A. Designer Qualifications: Experienced in design of helical foundations of the type involved on this project, as evidenced by:
  - 1. State registration/licensure as a professional engineer.
  - 2. Recognition by local authority having jurisdiction.
  - 3. List of three or more similar projects designed within the previous three years and names of project representatives who can verify such participation.
  - 4. Manufacturer's written recommendation.
- B. Installer Qualifications: Experienced in installation of helical foundations of the type involved on this project, as evidenced by:
  - 1. Manufacturer's certificate of competency in installing helical piles.
  - 2. List of three or more similar projects completed within the previous three years and names of representatives who can verify such participation.
  - 3. Letter from manufacturer stating ability and intent to provide on-site supervision.
  - 4. List of all safety violations lodged against installer within previous three years and current status/final resolutions thereof.
- C. Surveyor Qualifications: Engineer or land surveyor licensed in the State in which the Project is located.

## **PART 2 PRODUCTS**

### **2.01 MANUFACTURERS**

- A. Helical Piles and Anchors:
  - 1. Foundation Supportworks, Inc: [www.foundationssupportworks.com/#sle](http://www.foundationssupportworks.com/#sle).
  - 2. CMI Structural Solutions, Inc; 6348 Furnace Road, Ontario, NY; [www.cmistructural.com](http://www.cmistructural.com).
  - 3. Substitutions: See Section 01 6000 - Product Requirements.

### **2.02 HELICAL FOUNDATION DESIGN CRITERIA**

- A. It is Contractor's responsibility to design, or obtain qualified design, of the helical foundations as indicated in Contract Documents.
  - 1. Information necessary for design that is contained in Contract Documents includes:
    - a. Locations of foundation elements.
    - b. Service design load for each foundation element, including dead load, live load and other loads required by building codes.
  - 2. Subsurface geotechnical data is included in this project manual.
- B. Helical Foundation Elements: One or more helical deformed plates (helix plates) attached to a central shaft with a load transfer device for attachment to a structure; entire element resisting applied loads by soil pressure.
  - 1. Design foundations to support/resist the nominal design loads shown on drawings in accordance with AISC 360 Allowable Stress Design method.
  - 2. Select foundation elements based on allowable installation torque and calculated minimum embedment length; maximum embedment length, if any; and minimum effective torsional resistance.
  - 3. Corrosion Service Life: 100 years, minimum.
  - 4. Use solid square shaft helical anchors where subject to tension alone.
  - 5. Use hollow, round shaft helical foundations where subject to compression only or to alternating tension and compression.
- C. Helical Piles:
  - 1. Design with pile shaft sections in direct contact with couplings and no coupling bolts or welds in load path.
  - 2. Safety Factor: 2 times ultimate bearing resistance, minimum.
  - 3. Deflection: As indicated on drawings.
  - 4. Fit Up Tolerance: 1/16 inch, maximum.

## **2.03 MATERIALS**

- A. All Components: Hot-dipped galvanized in accordance with ASTM A123/A123M.
- B. Helical Piles: Hollow, round shaft of structural steel tube or pipe (rolled) complying with ASTM A572/A572M.
  - 1. Size: 3-1/2 inches O.D. by 0.313 inch wall thickness.
  - 2. Torque Strength: 16,000 foot-pounds.
  - 3. Minimum Yield Strength: 65 kips per square inch.
- C. Helix Plates: Round steel plates formed into helical spiral on matching metal dies to true helical shape and uniform pitch; welded to central shaft with all plates tracking the same path as leading helix.
  - 1. Material: Hot rolled carbon steel sheet, strip, or plate complying with ASTM A36/A36M or ASTM A572/A572M, Grade 50.
  - 2. Thickness: 3/8 inch
  - 3. Profile: True helix-shaped plates, normal to shaft, leading and trailing edges within 1/4 inch of parallel.
  - 4. Pitch: 3 inches plus or minus 1/4 inch. All helix plates shall have uniform pitch.
  - 5. Edge Profile: Circular edge.
  - 6. Spacing: Between 2.4 and 3.6 times helix diameter.
- D. Bolts: SAE J429, Grade 8, bolts with nut.
- E. Couplings: Integral to shaft.
- F. Pile Cap Plates : Load-transfer assembly welded from structural steel complying with ASTM A36/A36M.

## **PART 3 EXECUTION**

### **3.01 PREPARATION**

- A. Protect structures near the work and underground utilities from damage.
- B. Mark underground utilities as required by authority having jurisdiction. Avoid contact with all marked underground facilities.
- C. Locate the starting point of installation in relation to existing site elevation.
- D. Notify Owner at least 24 hours prior starting to installation.

### **3.02 INSTALLATION**

- A. Install helical foundations as shown on drawings and approved design documentation. In event of conflict between drawings and approved anchorage design documentation, do not begin construction on any affected items until such conflict has been resolved.
- B. Comply with manufacturer's written installation requirements and recommendations for specific project site and conditions.
- C. Use installation methods that will not cause damage to existing adjacent or nearby structures.
- D. Keep and submit a log of helical foundation installations, including the following data:
  - 1. Date and time of installation.
  - 2. Location of foundation element.
  - 3. Installed foundation type and configuration.
  - 4. Foundation reveal.
  - 5. Total length of installed foundation element.
  - 6. Installed inclination of foundation element.
  - 7. For compression piles, installation torque measurements taken in one to three foot increments of total length.
  - 8. Actual effective torsional resistance.
  - 9. Calculated geotechnical capacity based on actual torsional resistance and soil parameters appropriate for subsurface conditions within three helix diameters above helix depth.
  - 10. Comments pertaining to interruptions, obstructions, or other relevant information.



- E. If required, position inclined helical anchors perpendicular in order to assist in advancement into soil before establishing required batter angle; after initial penetration, establish required angle of inclination
- F. Engage helical sections into soil and advance in a smooth, continuous manner at a rate of rotation of 5 to 25 RPM.
- G. Apply sufficient down pressure to uniformly advance helical sections a distance per revolution approximately equal to pitch of helix plates.
- H. Adjust rate of rotation and magnitude of down pressure for specific soil conditions and depths.
- I. Provide extension sections as required to achieve required results.
- J. Achieve both minimum embedment length and minimum effective torsional resistance prior to terminating foundation installation.
- K. Location Tolerances:
  - 1. Pile Head Horizontal Tolerance: Within 3 inches of location shown on drawings.
  - 2. Pile Shaft Angular Tolerance: Within 2 degrees of inclination angle shown on drawings.
  - 3. Employ surveyor to document actual locations of foundation elements.

### **3.03 ACHIEVEMENT OF EFFECTIVE INSTALLATIONS**

- A. In the event that the initial installation of a foundation element does not achieve both minimum embedment length and minimum effective torsional resistance, adjust, repair, or replace that foundation element so that it does achieve both requirements.
  - 1. The following procedures are considered acceptable and do not require prior approval unless otherwise indicated.
  - 2. All other proposed remedies must be approved by Owner prior to implementation.
- B. Minimum Embedment Length Achieved Before Achieving Minimum Effective Torsional Resistance: Use one of the following procedures:
  - 1. Continue installation to greater depths until minimum effective torsional resistance is achieved, provided that, if maximum length constraint is applicable, continued installation does not exceed said maximum length.
  - 2. Demonstrate acceptable foundation performance through testing.
  - 3. Replace foundation with one having a different helix configuration, as follows:
    - a. Embed replacement to a length placing last helix at least three times its own diameter beyond position of first helix of replaced foundation.
    - b. Achieve minimum effective torsional resistance.
    - c. Do not exceed any applicable maximum embedment length.
    - d. Test replacement.
- C. Allowable Torque Rating Reached Before Achieving Minimum Embedment Length: Use one of the following procedures:
  - 1. If permitted by Owner, terminate installation at length achieved.
  - 2. Replace foundation with one having either a higher torsional strength rating or a different helix configuration, as follows:
    - a. Achieve minimum embedment length and minimum effective torsional resistance.
    - b. Embed replacement to length that places last helix at least three times helix diameter beyond position of first helix of replaced foundation.
    - c. Do not exceed any applicable maximum embedment length limit.
  - 3. If allowed by location tolerance or approved by Owner, remove foundation section and reinstall as follows:
    - a. Position reinstalled foundation at least three times diameter of largest helix away from initial location.
    - b. Achieve original embedment length and torsional resistance criteria.
    - c. If repositioning requires installation of additional helical foundations, adjust nominal loads for spacing changes.

- D. Maximum Embedment Length Reached Before Achieving Minimum Effective Torsional Resistance: Use one of the following procedures:
1. If allowed by location tolerance or approved by Owner, remove and reinstall foundation as follows:
    - a. Position reinstalled foundation at least three times diameter of largest helix away from initial location.
    - b. Achieve original minimum embedment length and minimum effective torsional resistance.
    - c. If repositioning requires installation of additional helical foundations, adjust nominal loads for spacing changes.
  2. Demonstrate acceptable foundation performance through testing.
  3. De-rate load capacity of helical foundation and install additional foundations as necessary; de-rated capacity and additional foundation location shall be subject to approval of Owner.
  4. Replace foundation with one having a different helix configuration; achieve minimum embedment length and minimum effective torsional resistance.
- E. Failure of Field Quality Control Test: Use one of the following procedures:
1. Install foundation to a greater depth and installation torque and re-test provided that, if a maximum embedment length constraint is applicable, continued installation will not exceed said maximum length constraint.
  2. Replace foundation with one having a different helix configuration. Embed last helix at least three times its own diameter beyond position of first helix of replaced foundation without exceeding any applicable maximum embedment length requirements. Re-test replacement.
  3. If approved by Owner, de-rate load capacity of helical foundation and install additional foundations at positions that are at least three times diameter of largest helix away from any other foundation locations; space anchors in cohesive soils not closer than four helix diameters.

### **3.04 FIELD QUALITY CONTROL**

- A. See Section 01 4000 - Quality Requirements, for additional requirements.
- B. Owner will employ independent testing agency to witness field testing by the helical pile contractor.
- C. Cooperate with testing agency and provide full access to installed foundations.
- D. Test installed helical foundations indicated per ASTM D1143/D1143M
- E. Failure of Tests: Replace or re-drive, and re-test, helical foundations that any fail test and cannot be remedied using any of the procedures described above in "ACHIEVEMENT OF EFFECTIVE INSTALLATIONS" article.

**END OF SECTION**

**SECTION 32 1123  
AGGREGATE BASE COURSES**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Aggregate base course.

**1.02 RELATED REQUIREMENTS**

- A. Section 31 2200 - Grading: Preparation of site for base course.
- B. Section 31 2316.13 - Trenching: Compacted fill over utility trenches under base course.
- C. Section 31 2323 - Fill: Compacted fill under base course.
- D. Section 32 1216 - Asphalt Paving: Finish and binder asphalt courses.
- E. Section 32 1313 - Concrete Paving: Finish concrete surface course.

**1.03 REFERENCE STANDARDS**

- A. ASTM C136/C136M - Standard Test Method for Sieve Analysis of Fine and Coarse Aggregates 2019.
- B. ASTM D2487 - Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System) 2017, with Editorial Revision (2020).

**1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Samples: 10 lb sample of each type of aggregate; submit in air-tight containers to testing laboratory.
- C. Materials Sources: Submit name of imported materials source.
- D. Aggregate Composition Test Reports: Results of laboratory tests on proposed and actual materials used.
- E. Compaction Density Test Reports.

**1.05 DELIVERY, STORAGE, AND HANDLING**

- A. When necessary, store materials on site in advance of need.
- B. When aggregate materials need to be stored on site, locate where agreed upon at the pre construction meeting.
- C. Aggregate Storage, General:
  - 1. Separate differing materials with dividers or stockpile separately to prevent intermixing.
  - 2. Prevent contamination.
  - 3. Protect stockpiles from erosion and deterioration of materials.

**PART 2 PRODUCTS**

**2.01 MATERIALS**

- A. Select Granular Fill: Angular crushed washed limestone; free of shale, clay, friable material and debris complying with State of NY Highway Department Standards for Type 2 Fill.
  - 1. Graded in accordance with ASTM C136/C136M, within the following limits:
    - a. 2 inch sieve: 100 percent passing.
    - b. No. 4 sieve: 25 to 60 percent passing.
    - c. No. 40: 5 to 40 percent passing.
    - d. No. 200: 0 to 7 percent passing.
- B. Woven Geotextile - As recommended by Geotechnical Report.

**2.02 SOURCE QUALITY CONTROL**

- A. See Section 01 4000 - Quality Requirements, for general requirements for testing and analysis of aggregate materials.

- B. Where aggregate materials are specified using ASTM D2487 classification, test and analyze samples for compliance before delivery to site.
- C. If tests indicate materials do not meet specified requirements, change material and retest.
- D. Provide materials of each type from same source throughout the Work.

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

- A. Verify that survey bench marks and intended elevations for the work are as indicated.
- B. Verify substrate has been inspected, gradients and elevations are correct, and is dry.

#### **3.02 PREPARATION**

- A. Correct irregularities in substrate gradient and elevation by scarifying, reshaping, and re-compacting.
- B. Do not place aggregate on soft, muddy, or frozen surfaces.

#### **3.03 INSTALLATION**

- A. Place aggregate in maximum 4 inch layers and roller compact to specified density.
- B. Level and contour surfaces to elevations and gradients indicated.
- C. Add small quantities of fine aggregate to coarse aggregate as appropriate to assist compaction.
- D. Add water to assist compaction. If excess water is apparent, remove aggregate and aerate to reduce moisture content.
- E. Use mechanical tamping equipment in areas inaccessible to compaction equipment.

#### **3.04 TOLERANCES**

- A. Flatness: Maximum variation of 1/4 inch measured with 10 foot straight edge.
- B. Scheduled Compacted Thickness: Within 1/4 inch.
- C. Variation From Design Elevation: Within 1/2 inch.

#### **3.05 FIELD QUALITY CONTROL**

- A. See Section 01 4000 - Quality Requirements, for general requirements for field inspection and testing.

#### **3.06 CLEANING**

- A. Remove unused stockpiled materials, leave area in a clean and neat condition. Grade stockpile area to prevent standing surface water.

**END OF SECTION**

**SECTION 32 1216  
ASPHALT PAVING**

**PART 1 - GENERAL**

**1.01 SECTION INCLUDES**

- A. Aggregate base for asphalt paving
- B. Asphalt paving installation over aggregate base
- C. Installation of asphalt topcourse over existing paving
- D. Joining new asphalt pavement to adjacent construction
- E. Traffic marking of asphalt pavement
- F. Field quality control

**1.02 RELATED SECTIONS**

- A. Section 31 2316 - Excavation
- B. Section 31 2323 - Fill
- C. Section 32 1123 - Aggregate Base Courses

**1.03 SUBMITTALS**

- A. Comply with the requirements of Section 01 3300 and as modified below.
- B. Product Data: Submit manufacturer's name, specifications and installation instructions for each item specified.
- C. Job Mix Formulas: Submit job mix formulas for asphalt paving indicating compliance with the requirements of each asphalt type specified including the name and location of the supplier.
- D. Quality Control Submittals
  - 1. Certificates: Submit one copy of all permits obtained from local regulatory agencies and the New York State Department of Transportation.
  - 2. Qualifications Certification: Submit written certification or similar documentation signed by the applicable subcontractor, prime contractor and/or manufacturer (where applicable) indicating compliance with the requirements specified below in the "Quality Assurance" section of this specification.
  - 3. Experience Listing: Submit a list of completed projects using the products proposed for this project, including owner's contact information and telephone number for each project, demonstrating compliance with applicable requirements specified in the "Quality Assurance" section of this specification.
- E. Closeout Procedures: Comply with the requirements of Section 01 7700.

**1.04 QUALITY ASSURANCE**

- A. Asphalt Producer Qualifications: Use only materials furnished by bulk asphalt producer regularly engaged in the production of hot-mix, hot laid asphalt.
- B. Regulatory Requirements
  - 1. Conform to the requirements of local regulatory agencies, or if applicable, the New York State Department of Transportation, which ever is more stringent for methods and materials in work areas subject to applicable agency's review and approval. Provide materials complying with referenced New York State Department of Transportation Standard Specifications where indicated.
  - 2. Obtain written permission from applicable agencies prior to the start of construction. Submit one copy of the permit as specified in "Submittals-Quality Control Submittals" above.

**1.05 PROJECT CONDITIONS**

- A. Environmental Requirements:
  - 1. Do not apply tack coats when ambient temperature is below 50 degrees F., and when the temperature has not been above 35 degrees for 12 hours immediately prior to the

application. Do not apply a tack coat when an asphalt base is wet or contains an excess of moisture.

2. Do not construct asphalt surface courses when the atmospheric temperature is below 40 degrees F., and when base material is not dry. Asphalt may only be placed when air temperatures are a minimum of 40 degrees F. and rising.

B. Field Measurements: Establish and maintain required lines and elevations for grade control.

## PART 2 PRODUCTS

### 2.01 MATERIALS

A. Asphalt Pavement: Paving materials shall comply with the New York State Department of Transportation Standard Specification, Section 400 for the materials indicated.

1. Binder Course: Hot plant mixed asphalt, complying with the New York State Department of Transportation Standard Specification, Section 401 and 403 for Asphalt - Type 3 Binder.

| Sieve Size    | Sieve Size (mm) | General Limits | Job Limit Tol. % |
|---------------|-----------------|----------------|------------------|
| 1 1/2"        | 37.5            | 100            | -                |
| 1"            | 25.0            | 95 – 100       | -                |
| 1/2"          | 12.5            | 70 – 90        | +/-6             |
| 1/4"          | 6.3             | 48 – 74        | +/-7             |
| No. 6 Sieve   | 3.2             | 32 – 62        | +/-7             |
| No. 20 Sieve  | .850            | 15 – 39        | +/-7             |
| No. 40 Sieve  | .425            | 8 – 27         | +/-7             |
| No. 80 Sieve  | .180            | 4 – 16         | +/-4             |
| No. 200 Sieve | .075            | 2 – 8          | +/-2             |

- a. The PGB content shall be 4.5 - 6.5%, +/-0.4%.
- b. The mixing and placement temperature range shall be 120 - 165 degrees C.

2. Topcourse: Hot plant mixed asphalt, complying with the New York State Department of Transportation Standard Specification, Section 401 and 403 for Asphalt - Type 6 Topcourse.

| Sieve Size    | Sieve Size (mm) | General Limits | Job Limit Tol. % |
|---------------|-----------------|----------------|------------------|
| 1"            | 25.0            | 100            | -                |
| 1/2"          | 12.5            | 95 - 100       | -                |
| 1/4"          | 6.3             | 65 - 85        | +/-7             |
| No. 6 Sieve   | 3.2             | 36 - 65        | +/-7             |
| No. 20 Sieve  | .850            | 15 – 39        | +/-7             |
| No. 40 Sieve  | .425            | 8 – 27         | +/-7             |
| No. 80 Sieve  | .180            | 4 – 16         | +/-4             |
| No. 200 Sieve | .075            | 2 – 6          | +/-2             |

- a. The PGB content shall be 5.4 - 7.0%.
- b. The mixing and placement temperature range shall be 120 - 165 degrees C.

B. Coatings: Comply with the New York State Department of Transportation Standard Specification, Section 702 for material designations indicated.

1. Tack Coat: Emulsified asphalt, slow setting type, New York State Department of Transportation designation 702-3601 (SS-1h) or 702-4501 (CSS-1h).
2. Asphalt Cement Filler: New York State Department of Transportation Designation 702-05.

C. Pavement Marking Paint: Utilize pavement marking paint complying with the New York State Department of Transportation Standard Specification for White, or Yellow, and Blue Marking Paints.

1. Manufacturer: For convenience, specifications have been based on "Setfast Acrylic Latex Traffic Paint" by Sherwin Williams, Co., Cleveland, OH (Tel. #216-566-2902).

## **2.02 EQUIPMENT**

- A. Paving Equipment: Spreading, self propelled asphalt paving machines capable of maintaining the line, grade and minimum surface thickness specified. Spreader boxes may be used in areas where specifically approved by the Project Designer.
- B. Compacting Equipment: Self-propelled tandem roller with a minimum 10 ton weight. Hand held vibrator compactor may be used in areas not accessible to rollers when specifically approved by the Project Designer.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Installer Verification of Conditions: Examine conditions under which pavement is to be constructed with the materials and components specified in this section. Affected Prime Contractors, the Owner's Representative and the Project Designer shall be notified in writing of any conditions detrimental to the proper and timely installation of the work.
  - 1. When the installer confirms conditions as being acceptable to ensure proper and timely installation of the work and to ensure requirements of applicable warranties or guarantees can be satisfied, submit written confirmation to the Project Designer. Failure to submit written confirmation and subsequent installation will be assumed to indicate conditions are acceptable to the installer.

### **3.02 PREPARATION**

- A. Final Preparation of Subgrades: Upon completion of preparation of subgrades as specified in Section 31 0000, thoroughly scarify the entire area to be paved and compact by rolling to smooth, hard, even surface. Finish to required grades with allowance for pavement courses above.

### **3.03 INSTALLATION**

- A. Asphalt Paving: Pave finished surface free from depressions that may collect water. The Contractor shall remove any depressions at their own expense over 1/8" deep when tested with a six foot straight edge without evidence of patching.
  - 1. Pave over aggregate base in two courses, topcourse over binder course. Comply with the New York State Department of Transportation Standard Specification, paragraph 401-3 and paragraph 403-3 for asphalt types specified.
- B. Installation of Topcourse over Existing Paving
  - 1. Surface Preparation: Condition existing paving in accordance with the New York State Department of Transportation Standard Specification, Section 633, prior to applying tack coat.
    - a. Tack Coat: Spray tack coat to the surface of the existing paving in accordance with the New York State Department of Transportation Standard Specification, paragraph 407-3. Apply tack coat ahead of paving equipment to allow for proper "breaking" of the material prior to the application of the new asphalt topcourse. Spray only the amount of tack coat that can be paved over in one day.
  - 2. Paving Topcourse: Pave topcourse graded to existing drainage basins. The thickness of the topcourse may vary to 3" to provide a smooth, evenly graded surface, but shall never be less than minimum thicknesses stated on plans. Topcourse paving shall comply with the New York State Department of Transportation Standard Specification, paragraph 401-3 and paragraph 403-3 for the asphalt type specified.
- C. Joining New Asphalt Pavement to Adjacent Construction
  - 1. Carefully construct joints between old and new pavements, or between successive days work to ensure continuous bond between adjoining paving. Construct joints with the same texture, density and smoothness as adjacent sections of asphalt courses. Clean sand, dirt and other deleterious material from contact surfaces and apply tack coat.
  - 2. Offset traverse joints a minimum of 24" between succeeding courses. Cut back pavement to the edge of previously placed courses to expose an even, vertical surface for the full course thickness.

3. Offset longitudinal joints a minimum of 6" between succeeding courses. When edges of longitudinal joints are irregular, honeycombed or inadequately compacted, cut back all unsatisfactory sections to expose an even, vertical surface for the full course thickness.
  4. In horizontal joints between the binder and the topcourse, clean all contact surfaces and spray a tack coat prior to the installation of the topcourse if the binder has been in place for longer than seven days or if the pavement is determined to be excessively dirty by the Project Designer.
  5. Seal joints with the application of asphalt cement filler, a minimum of 2" to each side of the joint.
- D. Traffic Marking: Apply pavement marking paint in accordance with the manufacturer's recommended procedures and in accordance with the New York State Department of Transportation Standard Specification, paragraph 640-3.

#### **3.04 FIELD QUALITY CONTROL**

- A. Flood Tests: Perform a flood test in the presence of the Owner's Representative or the Project Designer utilizing a water tank truck. If a depression ponding water more than 1/8" in depth is found, provide corrective measures to provide proper drainage.

**END OF SECTION**



**SECTION 32 1726  
TACTILE WARNING SURFACING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Tactile and detectable warning tiles for pedestrian walking surfaces.

**1.02 RELATED REQUIREMENTS**

- A. Section 03 3001-Concrete Sidewalks, Curbs and Exterior Concrete Flatwork

**1.03 REFERENCE STANDARDS**

- A. 49 CFR 37 - Transportation Services for Individuals with Disabilities (ADA) current edition.
- B. ADA Standards - Americans with Disabilities Act (ADA) Standards for Accessible Design 2010.
- C. ASTM A48/A48M - Standard Specification for Gray Iron Castings 2003 (Reapproved 2021).
- D. ATBCB PROWAG - Proposed Accessibility Guidelines for Pedestrian Facilities in the Public Right-of-Way 2011.

**1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Submit manufacturer's product data, standard details, details specific to this project; written installation and maintenance instructions.
- C. Warranty: Submit manufacturer warranty; complete forms in Owner's name and register with manufacturer.

**1.05 QUALITY ASSURANCE**

- A. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than five years documented experience.
- B. Installer Qualifications: Company certified in writing by product manufacturer as having successfully completed work substantially similar to the work of this section.

**1.06 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver to project site in manufacturer's protective wrapping and in manufacturer's unopened packaging.
- B. Store covered and elevated above grade and in manufacturer's unopened packaging until ready for installation. Maintain at ambient temperature between 40 and 90 degrees F.

**1.07 WARRANTY**

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.
- B. Cast Iron Tiles: Provide manufacturer's standard ten year warranty against manufacturing defects, breakage or deformation.

**PART 2 PRODUCTS**

**2.01 MANUFACTURERS**

- A. Cast Iron Detectable Warning Plates:
  - 1. EJ; DURALAST: [www.ejco.com/#sle](http://www.ejco.com/#sle).

**2.02 TACTILE AND DETECTABLE WARNING DEVICES**

- A. Cast Iron Detectable Warning Plates:
  - 1. Material: Cast gray iron; ASTM A48/A48M, Class 30 A (minimum).
  - 2. Installation Method: Cast in place.
  - 3. Shape: Rectangular.
  - 4. Square Dimensions: 24 inches square.
  - 5. Pattern: Truncated cones in compliance with ADA Standards.
  - 6. Joint: Manufacturer standard, bolted connection.
  - 7. Finish: Manufacturer's factory-applied powder coat.

8. Color: As selected by Architect from manufacturer's standard range.

### **PART 3 EXECUTION**

#### **3.01 INSTALLATION, GENERAL**

- A. Install in accordance with manufacturer's written instructions.
  - 1. Do not install damaged, warped, bowed, dented, abraded, or otherwise defective units.
  - 2. Do not install when ambient or substrate temperature has been below 40 degrees F during the preceding 8 daylight hours.
- B. Field Adjustment:
  - 1. Locate relative to curb line in compliance with ATBCB PROWAG, Sections 304 and 305.
  - 2. Orient so dome pattern is aligned with the direction of ramp.
- C. Install units fully seated to substrate, square to straight edges and flat to required slope.

#### **3.02 INSTALLATION - CAST IN PLACE, CAST IRON PLATES**

- A. Install by method described in manufacturer's written instructions.
- B. Place units into wet concrete.
- C. Press assembly into concrete to achieve final elevation.
- D. Finish concrete adjacent to plate. Remove wet concrete spilled onto plate surface.

#### **3.03 PROTECTION**

- A. Protect installed units from traffic, subsequent construction operations or other imposed loads until concrete is fully cured.
- B. Touch-up, repair or replace damaged products prior to Date of Substantial Completion.

**END OF SECTION**

**SECTION 32 1825  
INFIELD SKINNED AREA**

**PART 1 - GENERAL**

**1.01 SECTION INCLUDES**

- A. Construction of infield surfacing using approved, imported clay mixes blended with water absorbing additives as indicated on the Contract Documents.

**1.02 RELATED SECTIONS**

- A. Section 31 2200 - Grading
- B. Section 31 2316 - Excavation
- C. Section 31 2323 - Fill
- D. Section 32 9219 - Seeding

**1.03 SUBMITTALS**

- A. Comply with the requirements of Section 01 3300 - Submittal Procedures and as modified below.
- B. Product Data: Submit manufacturer's name, specifications and installation instructions for each item specified.
- C. Quality Control Submittals
  - 1. Qualifications Certification: Submit written certification or similar documentation signed by the applicable subcontractor, prime contractor and/or manufacturer (where applicable) indicating compliance with the "Qualifications" requirements specified below in the "Quality Assurance" section of this specification.
  - 2. Experience Listing: Submit a list of completed projects using the products proposed for this project, including owner's contact information and telephone number for each project, demonstrating compliance with applicable "Qualifications" requirements specified in the "Quality Assurance" section of this specification.
- D. Closeout Procedures: Comply with the requirements of Section 01 7800.

**1.04 QUALITY ASSURANCE**

- A. Qualifications: The person's installing the infield work and their direct supervisor shall be personally experienced in the construction playfield areas. On site supervisory personnel shall have been employed by the company engaged in the installation for a minimum of five years. All other individuals on the installation crew must have a minimum of six months experience in the playfield contracting industry.
- B. Regulatory Requirements: Obtain written permission from applicable agencies prior to the start of construction. Submit one copy of the permit as specified in "Submittals-Quality Control Submittals" above.

**1.05 PROJECT CONDITIONS**

- A. Field Measurements: Establish and maintain required lines and elevations for grade control.

**1.06 SEQUENCING AND SCHEDULING**

- A. Proceed with and complete infield construction as rapidly as portions of the site become available, working within seasonal limitations for the work required.

**PART 2 PRODUCTS**

**2.01 MATERIALS**

- A. For convenience purposes specifications have been based on Mar-Co Clay Products, Inc., Bright, Ontario, Canada (Tel # 800-950-2555).
  - 1. Equivalents include Premium Diamond-Tex Products, 74 Kurtz Road, Denver, PA 17517 (Tel#800-823-7866)

- B. Standard Infield Clay Mix: Engineered blend of baked clay, sand, and virgin clay below 3/16" in size. For convenience, specifications have been based on "Infield Clay 20 Series Standard" by Mar-Co Clay Products, Inc., Bright, Ontario, Canada (Tel # 800-950-2555).

1. Color: Orange-red.
2. Weight: Approximately 2,300 pounds per cubic yard.
3. Particle Size Analysis: 65-75% sand, 10-20% silt, and 10-20% clay.
4. Sieve Analysis: Complying with the following:

| Sieve      |                   | Percent Passing |
|------------|-------------------|-----------------|
| Sieve Size | Size opening (mm) |                 |
| No. 4      | 4.76              | 95-100          |
| No. 7      | 2.83              | 65-75           |
| No. 20     | 0.84              | 55-65           |
| No. 60     | 0.25              | 50-60           |
| No. 100    | 0.15              | 40-50           |
| No. 200    | 0.075             | 35-45           |

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

- A. Installer Verification of Conditions: Examine conditions under which baseball and softball fields are to be constructed with the materials and components specified in this section. Affected Prime Contractors, the Owner's Representative and the Project Designer shall be notified in writing of any conditions detrimental to the proper and timely installation of the work.
1. When the installer confirms conditions as being acceptable to ensure proper and timely installation of the work and to ensure requirements of applicable warranties or guarantees can be satisfied, submit written confirmation to the Project Designer. Failure to submit written confirmation and subsequent installation will be assumed to indicate conditions are acceptable to the installer.

#### **3.02 PREPARATION**

- A. Upon completion of playfield rough grading, trenching and drainage work, completely scarify the infield subsurface thoroughly to a depth of at least 2 inches.

#### **3.03 INSTALLATION**

- A. Place a minimum of 6" of standard clay mix on infield areas unless specifically indicated otherwise on the Contract Documents.
- B. Moisten and compact all infield areas to 90% of maximum density by mechanically dragging and rolling to the spot elevations indicated on the Drawings.
- C. Regrade high areas or topdress low areas with additional clay mix materials as required to eliminate bumps, ridges, or depressions to allow for positive drainage off of infield areas.

#### **3.04 ADJUSTING AND CLEANING**

- A. Repairs and Protection of Infields
1. Repair defective infield areas as directed by the Project Designer.
  2. Protect infields from damage until acceptance of playfield construction.

**END OF SECTION**

**SECTION 32 3113  
CHAIN LINK FENCES AND GATES**

**PART 1 - GENERAL**

**1.01 SECTION INCLUDES**

- A. Excavation for fence post bases
- B. Concrete anchorage for posts
- C. Installation of chain link fences
- D. Installation of chain link gates

**1.02 RELATED SECTIONS**

- A. Section 32 1216 - Asphalt Paving
- B. Section 32 9219 - Seeding

**1.03 REFERENCES**

- A. Comply with ASTM A 53 for requirements of Schedule 40 piping.

**1.04 DEFINITIONS**

- A. Height of Fence: Distance measured from the top of the concrete footing to the top of the fabric.

**1.05 SUBMITTALS**

- A. Comply with the requirements of Section 01 3300 - Submittal Procedures and as modified below.
- B. Product Data: Submit manufacturer's name, specifications and installation instructions for each item specified.
- C. Shop Drawings: Complete detailed drawings for each height and style of fence and gate required. Include separate schedule for each, listing all materials required and technical data such as size, weight and finish to ensure conformance to the specifications.
- D. Quality Control Submittals
  - 1. Qualifications Certification: Submit written certification or similar documentation signed by the applicable subcontractor, prime contractor and/or manufacturer (where applicable) indicating compliance with the "Qualifications" requirements specified below in the "Quality Assurance" section of this specification.
  - 2. Experience Listing: Submit a list of completed projects using the products proposed for this project, including owner's contact information and telephone number for each project, demonstrating compliance with applicable "Qualifications" requirements specified in the "Quality Assurance" section of this specification.
- E. Closeout Procedures: Comply with the requirements of Section 01 7800.

**1.06 QUALITY ASSURANCE**

- A. Comply with the standards of the Chain Link Fence manufacturer's Institute, including (unless otherwise indicated):
  - 1. Specification for Metallic Coated Steel Chain Link Fence Fabric
  - 2. Industrial Steel Specification for Fence Rails, Posts, Gates and Accessories
  - 3. ASTM F-567 - Standard Practice for Installation of Chain Link Fence for installation unless otherwise indicated on the Contract Documents.
- B. Qualifications
  - 1. Provide metal fences and gates as a complete unit produced by a single manufacturer, including necessary erection accessories, fitting and fasteners. Products shall be provided by a company specializing in commercial quality chain link fencing with at least five years experience.
- C. Regulatory Requirements

1. Obtain written permission from applicable agencies prior to the start of construction. Submit one copy of the permit as specified in "Submittals-Quality Control Submittals" above.

## **1.07 PROJECT CONDITIONS**

- A. Field Measurements: Establish and maintain required lines and elevations for grade control.

## **1.08 SEQUENCING AND SCHEDULING**

- A. Proceed with and complete chain link fence and gate installation as rapidly as portions of the site become available, working within seasonal limitations for the work required.

## **PART 2 PRODUCTS**

### **2.01 MATERIALS**

- A. Framework Standards
  1. Steel Pipe: Cold rolled steel pipe meeting the requirements of ASTM F 1043 with a minimum yield strength of 50,000 psi.
  2. Interior Coating: In line applied zinc rich coating with zinc powder loading of a minimum 90% by weight applied after fabrication conforming to ASTM B 6 high grade and Special High Grade Zinc.
  3. Exterior Coatings
    - a. Base Coat: Minimum .9 ounces zinc per square foot.
    - b. Intermediate Coat: Minimum 15 microgram chromate conversion per square inch.
    - c. Top Coat: Minimum 0.3 mil cross link polyurethane acrylic exterior coating.
    - d. PVC exterior coating: Fusion bonded polyvinyl chloride similar to Brighton Colorbond Fence System by Merchant Metals, Brighton, Michigan. Color to be black unless specifically noted otherwise on the Contract Documents.
  4. Size of Pipe: As indicated.
  5. Similar to SS-40 Pipe with Flo-Coat by Allied Tube and Conduit Corporation, Harvey, Illinois.
- B. Framework and Footings for Fences Up To 8'-0" High
  1. End Posts, Corner Posts and Pull Posts.
    - a. Pipe: 3.00" O.D.
    - b. Set pull posts at the midway point of all lines 500 feet or longer and at all changes of direction or grade of 15 degrees or more. Place pull posts at each radius point within the curved line where the internal angle is 30 degrees or more.
    - c. Footing Size: 12" O.D. by 5'-0" deep.
  2. Line Posts
    - a. Pipe: 2.50" O.D.
    - b. Space line posts at a maximum of 10 feet on center unless specifically noted otherwise on the contract documents.
    - c. Footing Size: 12" O.D. by 5'-0" deep.
- C. Framework and Footings for Fences Over 12'-0" High
  1. End Posts, Corner Posts and Pull Posts.
    - a. Pipe: 4.00" O.D. unless specifically noted otherwise on the Contract Documents.
    - b. Set pull posts at the midway point of all lines 500 feet or longer and at all changes of direction or grade of 15 degrees or more. Place pull posts at each radius point within the curved line where the internal angle is 30 degrees or more.
    - c. Footing Size: 24" O.D. by 6'-0" deep.
  2. Line Posts
    - a. Pipe: 4.00" O.D.
    - b. Space line posts at a maximum of 10 feet on center unless specifically noted otherwise on the contract documents.
    - c. Footing Size: 24" O.D. by 6'-0" deep.
- D. Post Brace: Provide manufacturer's standard adjustable brace at gate posts and at both sides of corner and pull posts, with a horizontal brace located at the mid-height of the fabric.

1. Unless otherwise specified, provide PVC coating to match color of adjacent fence components.
- E. Top, Intermediate, and Bottom Rails: 1.66" O.D. pipe, weighing 1.84 pounds per linear foot. Install rails in the manufacturer's longest lengths utilizing expansion couplings, approximately 6" long at each joint. Provide means for attaching the top rail securely to each gate post, corner post, pull post and end post.
  1. Unless otherwise specified, provide PVC coating to match color of adjacent fence components.
- F. Swing Gate Posts
  1. Single leaf of gate up to 6' wide and less than 10' in height: 2.875" O.D. pipe, 5.79 pounds per linear foot.
- G. Swing Gate Framework
  1. 2.50" O.D. pipe, 2.72 pounds per linear foot.
  2. Assemble gate frames by welding. Install mid-height horizontal rails on gates over 10'-0" in height. When the width of a gate leaf exceeds 10'-0", install mid-distance vertical bracing of the same size and weight as frame members. When either horizontal or vertical bracing is not required, provide truss rods as cross bracing to prevent sag or twist.
- H. Swing Gate Hardware
  1. Hinges: Non-lift type, offset to permit 180 degree swing and of a suitable size and weight to support the gate. Provide 1½ pair of hinges for each leaf over 6' high.
  2. Latch: Forked type for single gates 10 feet wide or less. Drop bar type with keeper for double gates and single gates over 10 feet wide complete with flush plate set in concrete. Drop bar length shall be 2/3 the height of the gate. A padlock eye shall be an integral part of the latch construction.
  3. Unless otherwise specified, provide PVC coating to match color of adjacent fence components.
- I. Chain Link Fabric
  1. PVC Coated Fabric: Unless otherwise specified, provide 2" mesh, 9 gauge steel wires, with one piece fabric widths for fencing up to 12 feet high. The PVC coating is to be fused and adhered to galvanized wire in accordance with Federal Specification RR-F-191 H/ID, ASTM F-668 Class 2B, and ASTM F934. Coating thickness to be 7 mils.
    - a. Manufacturer: Brighton Colorbond Fence System by Merchant Metals, Brighton, Michigan or similar.
    - b. Color to be black unless specifically noted otherwise on the Contract Documents.
  2. Selvages: Top and bottom selvages to be knuckled unless specifically noted otherwise on the Contract Documents.
    - a. Unless otherwise specified, provide PVC coating to match color of adjacent fence components.
- J. Post Caps:
  1. Weather tight closure cap, one cap per post.
  2. Furnish caps with openings to permit passage of rail.
  3. Fasteners: Tamper resistant cadmium plated steel screws.
  4. PVC Coated: Complying with the requirements of Brighton Colorbond Fence System by Merchant Metals, Brighton, Michigan.
- K. Stretcher Bars: One piece equal to the full length of the fabric, minimum cross section 3/16" by 3/4".
- L. Metal Bands (for securing stretcher bars): Steel, wrought iron or malleable iron.
- M. Hardware: Self locking bands, tie wires and similar accessories. All hardware ends to pipe rails and other fence components must be of solid construction that prevents access to wasps and similar insects.
  1. PVC Coated Hardware: Complying with the requirements of Brighton Colorbond Fence System by Merchant Metals, Brighton, Michigan to match color of adjacent fence components.

- N. Tension Wire: Manufacturer's standard 7 gauge coiled spring steel wire.
- O. Wire Ties:
  - 1. For tying fabric to line posts, rails, and braces: 9 gauge steel wire installed at 12" O.C.
  - 2. For tying tension wire to fabric: 11 gauge steel hog rings at 24" O.C.
- P. Truss Rods: 3/8" diameter.
- Q. Bolts and Nuts: ASTM A 307, Grade A.
- R. Concrete: Portland cement concrete having a minimum compressive strength of 3000 psi at 28 days.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Installer Verification of Conditions: Examine conditions under which chain link fences and gates are to be constructed with the materials and components specified in this section. Affected Prime Contractors, the Owner's Representative and the Project Designer shall be notified in writing of any conditions detrimental to the proper and timely installation of the work.
  - 1. When the installer confirms conditions as being acceptable to ensure proper and timely installation of the work and to ensure requirements of applicable warranties or guarantees can be satisfied, submit written confirmation to the Project Designer. Failure to submit written confirmation and subsequent installation will be assumed to indicate conditions are acceptable to the installer.

### **3.02 PREPARATION**

- A. Clear and grub plant material along the fence line as required to eliminate growth interfering with the fence alignment. Remove all debris from the project property.
- B. Do not begin installation of the fence until finish grading in area has been completed.

### **3.03 INSTALLATION**

- A. Space posts equidistant in the fence line at a maximum of 10 feet on center unless specifically noted otherwise on the Contract Documents.
- B. Setting Post in Earth: Drill holes for fence footings. Set posts in the center of the hole and fill the hole with concrete. Plumb and align posts, vibrate or tamp concrete for consolidation. Finish concrete in a dome shape above the finish grade elevation to shed water. Do not attach fabric to posts until the concrete has cured a minimum of seven days.
- C. Located corner posts at corners and at changes in direction. Use pull posts at all abrupt changes in grade and at intervals no greater than 500 feet. On runs over 500 feet, space pull posts evenly between corner or end posts. On long curves, space pull posts so that the strain of the fence will not bend line posts.
- D. Install top rail continuously through post tops or extension arms, bending to radius for curved runs. Install expansion couplings as recommended by the fencing manufacturer.
- E. Install bottom and intermediate rails in one piece between posts and flush with the post on the fabric side using special offset fittings where necessary.
- F. Brace corner posts, pull posts, end posts and gate posts to adjacent line posts with horizontal rails.
- G. Diagonally brace corner posts, pull posts, end posts and gate posts to adjacent line posts with truss rods and turnbuckles.
- H. Attach the fabric to the active playfield or security side of the fence. Maintain a 1 inch clearance above the finished grade except where indicated otherwise. Thread stretcher bars through the fabric using one bar for each gate and end post and two for each corner and pull post. Pull fabric tight so that the maximum deflection of the fabric is 2 inches when a 30 pound pull is exerted perpendicular to the center of a panel.
  - 1. Maintain tension by securing stretcher bars to posts with metal bands spaced at 15" O.C.



2. Fasten fabric to steel framework with wire ties spaced 12" O.C. for line posts and 24" O.C. for rails and braces. Bend back wire ends to prevent injury.
  3. Tighten stretcher bar bands, wire ties and other fasteners securely.
  4. When the fabric height exceeds 12', overlap horizontal splices 6" at the intermediate rail and secure with wire ties spaced at 12" O.C.
- I. Position bolts for securing metal bands and hardware so nuts are located opposite the fabric side of the fence. Tighten nuts and cut off excess threads so no more than 1/8" is exposed. Peen ends to prevent loosening or removal of nuts. Secure post tops and extension arms with tamper resistant screws.
  - J. Install gates plumb and level and adjust for full opening without interference. Install ground set items in concrete for anchorage as recommended by the fence manufacturer. Adjust hardware for smooth operation and lubricate where necessary.
  - K. Wire brush and repair welded and abraded areas with one coat of cold galvanizing compound.
  - L. Restore disturbed ground areas to their original condition. Topsoil and seed to match adjacent areas.

### **3.04 ADJUSTING AND CLEANING**

- A. Repairs and Protection of chain link fences and gates.
  1. Repair or replace broken or defective chain link fences and gates as directed by the Project Designer.
  2. Protect chain link fences and gates from damage until acceptance of the fencing construction.

**END OF SECTION**

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**SECTION 32 9219  
SEEDING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Preparation of subsoil.
- B. Placing topsoil.
- C. Hydroseeding, mulching and fertilizer.
- D. Maintenance.

**1.02 RELATED REQUIREMENTS**

- A. Section 31 2200 - Grading: Preparation of subsoil and placement of topsoil in preparation for the work of this section.
- B. Section 31 2323 - Fill: Topsoil material.

**1.03 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Certificate: Certify seed mixture approval by authority having jurisdiction.
- C. Maintenance Contract.

**1.04 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver grass seed mixture in sealed containers. Seed in damaged packaging is not acceptable. Deliver seed mixture in containers showing percentage of seed mix, year of production, net weight, date of packaging, and location of packaging.
- B. Deliver fertilizer in waterproof bags showing weight, chemical analysis, and name of manufacturer.

**PART 2 PRODUCTS**

**2.01 SEED MIXTURE**

- A. Seed Mixture:
  - 1. Merion Blue Grass: 40 percent.
  - 2. Kentucky Blue Grass: 40 percent.
  - 3. Norlea Perennial Rye: 20 percent.

**2.02 ACCESSORIES**

- A. Mulching Material: Oat or wheat straw, free from weeds, foreign matter detrimental to plant life, and dry. Hay or chopped cornstalks are not acceptable.
- B. Fertilizer: recommended for grass, with fifty percent of the elements derived from organic sources; of proportion necessary to eliminate any deficiencies of topsoil, as indicated by analysis.
- C. Water: Clean, fresh and free of substances or matter that could inhibit vigorous growth of grass.

**2.03 TESTS**

- A. Analyze to ascertain percentage of nitrogen, phosphorus, potash, soluble salt content, organic matter content, and pH value.
- B. Submit minimum 10 oz sample of topsoil proposed. Forward sample to approved testing laboratory in sealed containers to prevent contamination.
- C. Testing is not required if recent tests are available for imported topsoil. Submit these test results to the testing laboratory for approval. Indicate, by test results, information necessary to determine suitability.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that prepared soil base is ready to receive the work of this Section.

### **3.02 PREPARATION**

- A. Prepare subgrade in accordance with Section 31 2200.
- B. Place topsoil in accordance with Section 31 2200.

### **3.03 FERTILIZING**

- A. Apply fertilizer in accordance with manufacturer's instructions.
- B. Apply after smooth raking of topsoil and prior to roller compaction.
- C. Do not apply fertilizer at same time or with same machine as will be used to apply seed.
- D. Mix thoroughly into upper 2 inches of topsoil.
- E. Lightly water to aid the dissipation of fertilizer.

### **3.04 HYDROSEEDING**

- A. Apply seeded slurry with a hydraulic seeder at a rate of 6 lbs per 1000 sq ft evenly in two intersecting directions.
- B. Do not hydroseed area in excess of that which can be mulched on same day.
- C. Immediately following seeding, apply mulch to a thickness of 1/8 inches. Maintain clear of shrubs and trees.
- D. Apply water with a fine spray immediately after each area has been mulched. Saturate to 4 inches of soil.
- E. Following germination, immediately re-seed areas without germinated seeds that are larger than 4 by 4 inches.

### **3.05 MAINTENANCE**

- A. Provide maintenance at no extra cost to Owner; Owner will pay for water.
- B. See Section 01 7000 - Execution Requirements, for additional requirements relating to maintenance service.
- C. Maintain seeded areas immediately after placement until grass is well established and exhibits a vigorous growing condition.
- D. Mow grass at regular intervals to maintain at a maximum height of 2-1/2 inches. Do not cut more than 1/3 of grass blade at any one mowing.
- E. Neatly trim edges and hand clip where necessary.
- F. Immediately remove clippings after mowing and trimming.
- G. Water to prevent grass and soil from drying out.
- H. Roll surface to remove minor depressions or irregularities.
- I. Control growth of weeds. Apply herbicides in accordance with manufacturer's instructions. Remedy damage resulting from improper use of herbicides.
- J. Immediately reseed areas that show bare spots.
- K. Protect seeded areas with warning signs during maintenance period.

**END OF SECTION**

**SECTION 32 9300  
EXTERIOR PLANTS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Inspection of plant material
- B. Preparation for planting
- C. Installation of plants
- D. Follow-up inspections and replacements of plants

**1.02 RELATED SECTIONS**

- A. Section 31 2323 - Fill
- B. Section 32 9219 - Seeding

**1.03 REFERENCES**

- A. Plant Nomenclature: Conform to the latest edition of "Standardized Plant Names" as adopted by the American Joint Committee of Horticultural Nomenclature.
- B. Size and Grading Standards: Conform to the current edition of "American Standard for Nursery Stock" by the American Association of Nurserymen, Inc., unless otherwise specified.

**1.04 DEFINITIONS**

- A. Weeds: Vegetative species other than specified species to be established in given area.
- B. Plants: Living trees, shrubs, perennials, ground cover, and other plant material specified in this section.

**1.05 SUBMITTALS**

- A. Comply with the requirements of Section 01 3300 - Submittal Procedures and as modified below.
- B. List of plants: Before plant material is shipped to the project site, submit a complete itemized list of all plants including the source of supply.
- C. Product Data: Furnish the following with each planting material delivery:
  - 1. Invoice indicating sizes and varieties of plant material.
  - 2. Certificates of inspection required by State and Federal agencies.
  - 3. Labels for each plant or bundles of plants indicating name and size.
- D. Quality Control Submittals
  - 1. Experience Listing: Submit a list of completed projects including owner's contact information and telephone number for each project, demonstrating compliance with applicable "Qualifications" requirements specified in the "Quality Assurance" section of this specification.
  - 2. Planting Soil Analysis Report: Submit planting soil analysis report for on-site stockpiled or imported planting soil. Do not mix or utilize planting soil until a soil analysis report is approved by the Project Designer.
    - a. Provide required representative samples of planting soil materials proposed for use in the project to an independent testing agency for analysis and recommended treatment. Contractor shall pay for all costs incurred for testing and analysis of the soil material.
    - b. Ensure test reports include specific recommendations regarding exact types, times and rates of application of soil additives and fertilizers based upon soil test results and type of material to be planted. Follow soil additive recommendations during all planting operations. Include the following in the planting soil analysis:
      - 1) pH factor
      - 2) Percent organic matter
      - 3) Soluble salts

- 4) Available macro and micro nutrients
  - 5) Percent clay, sand and silt particles
  - c. Include in recommendations the type, rate and means of application of soil amendments and fertilizer necessary to establish the required pH factor, organic matter content and supply of nutrients satisfactory for planting.
  - d. All materials and procedures regarding soil amendments and fertilizers specified in this section are approximate; adjust all soil amendments to comply with the test reports.
- E. Contract Closeout Submittals: Comply with the requirements of Section 01 7800.

#### **1.06 QUALITY ASSURANCE**

- A. Worker's Qualifications: The person's performing the planting and their direct supervisor shall be personally experienced in the planting and caring of plant material. On site supervisory personnel shall have been employed by the company engaged in the planting and caring for a minimum of two years. All other individuals on the landscape crew must have a minimum of six months experience in the landscape contracting industry.
- B. Tree Caliper
  - 1. Trees up to four inches in caliper shall be sized at a point six inches above the top of the root ball.
  - 2. Trees over four inches in caliper shall be sized at a point 12 inches above the top of the root ball.
- C. Inspection: The Project Designer reserves the right to inspect plant material either at the nursery or on the project site before planting for compliance with the requirements for name, variety, size and quality.

#### **1.07 DELIVERY, STORAGE AND HANDLING**

- A. Notify the Owner's Representative a minimum of 48 hours in advance of delivery of plant material.
- B. Do not make substitutions. If specified plant material is not obtainable, submit to the Project Designer proof of non-availability and a proposal for use of equivalent material. When authorized, adjustment of the contract amount will be made.
- C. Protect plant material against climatic and mechanical injury.
- D. Acceptance of Plant Material at the Project Site
  - 1. Provide freshly dug trees and shrubs. Do not prune prior to delivery. Do not bend or bind tie trees or shrubs in such a manner as to damage bark, break or destroy the natural shape of the plant material. Provide protective covering during delivery.
  - 2. Deliver trees and shrubs after preparations for planting have been completed and plant immediately. If planting is delayed more than six hours after delivery, set trees and shrubs in the shade, protect from weather and mechanical damage and keep roots moist.
  - 3. Label at least one tree and shrub of each variety with a securely attached waterproof tag bearing a legible description of the botanical and common name of the plant material.
  - 4. Reject plants when the ball of earth surrounding the roots has cracked or broken prior to or during the planting process.
  - 5. Reject plants when burlap, staves, and ropes required in connection with transplanting have been displaced prior to acceptance.
- E. Deliver fertilizer in the manufacturer's standard sized bags showing the weight, analysis, and manufacturer's name. Store all fertilizer under a waterproof cover or in a dry place.

#### **1.08 PROJECT CONDITIONS**

- A. Water: If available on the site, water will be supplied for the purpose of watering newly planted material at no cost to the contractor. If water is not available on site, the contractor shall supply water at their own cost as required for to maintain the health of the newly planted material.
- B. Utilities: Determine the location of underground utilities and perform work in a manner avoiding possible damage, including required hand excavation. Maintain grade stakes set by others

until removal is mutually agreed upon by all parties concerned.

- C. Excavation: When conditions detrimental to plant growth are encountered, such as rubble fill, adverse drainage conditions, or obstructions, notify Owner's Representative before planting.

#### **1.09 PESTICIDE APPLICATIONS**

- A. Any contractor applying pesticides must notify the Owner's designated pesticide representative and all property neighbors not less than 48 hours in advance of any pesticide application including herbicides, insecticides and fungicides in accordance State Regulations and the School Pesticide Neighbor Notification Law, Section 409-H of the New York State Education Law and Commissioner's Regulation 155.24.

#### **1.10 PLANTING GUARANTEE**

- A. The plant guarantee shall extend for a period of one full year from the date of substantial completion of the work. Substantial completion for the work of this section is the date when all planting operations or seasonal portions of the planting operations or replacement operations have been completed and are accepted by the Owner's Representative or the Project Designer.
  - 1. The Contractor shall arrange for and conduct a final inspection with the Owner or the Owner's Representative at the end of the one year guarantee period.
  - 2. Replace plant materials found dead or in an unhealthy or unsightly growing condition and that have lost their natural shape due to dead branches or other causes due to the Contractor's negligence at the Contractor's expense.
  - 3. Replace with plant materials of the same size and species and with a new guarantee period commencing on the date of replacement.
  - 4. Provide maintenance and additional watering for an additional 12 month period.

### **PART 2 PRODUCTS**

#### **2.01 PLANT MATERIALS**

- A. Shrubs and Trees: The Contractor shall provide plant material complying with the following:
  - 1. Nursery grown stock as indicated in the itemized plant list or on the Contract Documents complying with the recommendations and requirements of ANSI Z60.1 "Standard for Nursery Stock" and as specified.
  - 2. Acclimated plants true to genus and species grown in recognized nurseries in accordance with good horticultural practices.
  - 3. Well developed root and branch systems. Do not prune branches before delivery.
  - 4. Free of disease, insect eggs, bark abrasions, frost cracks, dead or broken branches and disfiguring knots.
  - 5. Buds intact and reasonably closed at the time of planting.
  - 6. Balled and burlapped from soil which will hold a natural ball. Manufactured balls are unacceptable.
  - 7. Conform to size indicated or larger, or within the minimum/maximum size when so indicated. Larger plants cut back to specified dimensions will not be acceptable.
  - 8. Specified trees shall have a single erect leader from ground to top, surrounded with uniformly arranged branches unless specifically noted otherwise.
  - 9. Transplanted or root pruned 360 degrees at least once during the previous three years.
- B. Ground Covers: Provide plants established and well rooted in removable containers with not less than the minimum length and number of runners required by ANSI Z60.1 for pot size shown and listed.

#### **2.02 PLANTING SOIL**

- A. Use either approved planting soil imported to the project site or approved on-site topsoil stripped, stockpiled and amended to meet the required specifications.
  - 1. Topsoil for Planting Soil meeting the following specifications: Sand 35%-60%, Silt 30%-35%, and Clay 10%-25%.
- B. Soil Amendments (For every 4CY of topsoil):

1. Peat Moss: 7½ CF bale (Approved compost material may be used as a substitute to peat moss).
2. Fertilizer: 5lbs.

## **2.03 FERTILIZER**

- A. 10-6-4 Commercial Fertilizer: Containing not less than 10% nitrogen, 6% available phosphoric acid and 4% water soluble potash. (Existing topsoil analysis shall be utilized to verify the actual fertilizer analysis to be used in this project)

## **2.04 MULCH**

- A. Shredded Hardwood Mulch: Wood fiber produced from hardwood trees, free of tannic acid, leaves, young green growth, wood shavings, sawdust or other objectionable foreign material.

## **2.05 MISCELLANEOUS MATERIALS**

- A. Stakes, Deadmen and Guy Stakes: Sound, durable white or red cedar or other approved wood, free of insect and fungus infestation.
- B. Guy Wire or Cable: No. 12 galvanized wire or cable.
- C. Tree Wrapping: 4 inch wide strips of jute burlap or waterproof paper.
- D. Protective Hose: Two-ply garden hose cut to required lengths to protect tree trunks from damage from wire.
- E. Anti-Desiccant: Emulsion type, film forming agent designed to permit transpiration but retard excessive loss of moisture from plants. Deliver in manufacturer's fully identified containers and mix in accordance with the manufacturer's instructions; similar to "Wilt-Pruf" by Wilt-Pruf products, Essex, CT.
- F. Landscape Fabric: Weather resistant, polypropylene sheeting complying with the permeability coefficient 0.0028 or 2.845 gal./sf/minute, minimum 30 mil thick; similar to "Weed Barrier" by DeWitt Co., Inc., Sikeston, MO.
- G. Edging
  1. Steel Edging: Commercial steel edging of size shown on the drawings fabricated in sections with loops pressed from or welded to the face of sections to receive stakes. Provide tapered steel stakes 16" long. Finish edging sections and stakes with manufacturer's standard green-black paint; similar to Joseph T. Ryerson & Son Co., Inc., Chicago, IL.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Installer Verification of Conditions: Examine conditions under which landscape planting is to be completed with the materials and components specified in this section. Affected Prime Contractors, the Owner's Representative and the Project Designer shall be notified in writing of any conditions detrimental to the proper and timely installation of the work.
  1. When the installer confirms conditions as being acceptable, to ensure proper and timely installation of the work and to ensure requirements of applicable warranties or guarantees can be satisfied, submit written confirmation to the Project Designer. Failure to submit written confirmation and subsequent installation will be assumed to indicate conditions are acceptable to the installer.

### **3.02 PREPARATION**

- A. Planting Layout:
  1. Stake out all tree locations and planting areas.
  2. Obtain layout approval from the Owner's Representative prior to excavations of plant pits and beds.
- B. Plant Pit Dimensions:
  1. Balled and Burlapped Plants: Pit depth should not exceed the ball depth. The pit width measured at the ground surface shall be three times the width of the ball or as indicated.



2. Container Grown Plants: Two times the diameter of the container measured at the ground surface.
  3. Ground Cover Beds: Excavate the entire planting bed to a depth of 4" and replace with amended planting soil.
  4. Bare Root Plants: Diameter equal to the width of the roots spread to their natural position plus 24 inches, measured at the ground surface.
  5. Hedge Trenches: 18 inches wide and 18 Inches deep.
- C. Excavation: Excavate pits to the dimensions specified. Dispose of excavated material of the site unless otherwise directed.

### **3.03 PLANT INSTALLATION**

- A. Setting Plants
1. Backfill pits with planting soil and firm to the level upon which plants were previously growing. Set plants plumb. Plant budded or grafted plants two inches below the bud or graft line. Complete backfilling with planting soil and settle continually with water.
  2. Balled Plants: Set plants in position and backfill 1/3 depth of ball. Remove burlap from the top and adjust to eliminate air pockets. Remove all metal caging and synthetic twine. Complete backfill and settle with water.
  3. Bare-Root Plants: Set plant in position and place planting soil around roots settling with water. Use care to avoid bruising or breaking roots when firming the soil. Prune bruised or broken roots
  4. Ground Covers: Dig holes large enough for installation of ground cover material. Work soil around roots to eliminate air pockets. Water thoroughly after planting, taking care not to cover crowns of plants with wet soils. Mulch ground cover areas with a 2" layer of mulch.
- B. Wrapping: Wrap deciduous trees within four days after planting from the ground line to the height of the second branches. Wrap in a single layer wound spirally starting from the base and overlapping 1½ inches. Secure wrapping in place by use of approved staples or other approved methods and materials.
- C. Staking: Set tree stakes into solid ground below the bottom of the plant before backfilling. Place stakes at the outer edge of the roots or ball in line with the prevailing wind at a ten degree angle from the tree trunk.
- D. Anti-Desiccant: Apply anti-desiccant spray to broadleaved ericaceous plants installed in the Fall season, as directed.
- E. Landscape Fabric: Install over the planting area to the limits indicated. Cut fabric as required to avoid plants.
- F. Surface Finish: Form saucer as indicated on drawings or as directed. Grade soil to form a basin on the lower side of sloped plantings, which will catch and retain water. Topdress basins with fertilizer spread evenly at a rate of 1½ pounds per square yard of plant pit surface.
- G. Mulching: Spread a minimum of 4" of shredded hardwood mulch over the finished surface of each plant, plant bed or hedge trench. Water plants thoroughly after mulching is complete.
- H. Pruning: Prune plant material immediately after planting using sharp tools approved by the Owner's Representative. Remove approximately 1/3 of the wood of deciduous plants, maintaining the natural habit of the plant. Cut no leaders.
- I. Guying: Secure deciduous trees two inches and over in caliper, multi-stemmed trees six feet and over in height, and evergreen trees six feet and over in height with minimum three guys. Attach guy wires with protective hosing to stakes and trees as indicated. Connect multi-stemmed trees with protected wires maintaining each stems relationship to one another.
- J. Establishment of Planting: Maintain plantings immediately following planting operations and continue throughout the warranty period. Establishment of plantings shall consist of keeping plants in healthy growing conditions by watering, weeding, cultivating, pruning, spraying, tightening of guys, remulching and by any other necessary operations for establishment. Water all plants at least once a week between April 1 and October 31 with approximately five gallons

of water per square yard (one inch layer of water) per watering unless otherwise directed by the Owner's Representative. Provide additional water during periods of dry weather when required or when directed. Treat plants with sound horticultural preventative or remedial measures to control insects, diseases and rodents.

- K. Weeding: Schedule maintenance work at least three times during the growing season of the 12 month warranty period to keep planting areas free from weeds. Coordinate maintenance work with the Owner's Representative.

#### **3.04 CLEANUP AND PROTECTION**

- A. During landscape construction work, keep pavements clean and the project area in an orderly condition.
- B. Protect landscape construction and materials from damage due to landscape operations, operations by other contractors, trades and trespassers. Maintain protection during installation and maintenance periods. Treat, repair or replace damaged landscape construction as directed.

#### **3.05 INSPECTIONS AND REPLACEMENTS**

- A. Substantial Completion Inspection and Replacements: Notify the Owner's Representative in writing at least ten days prior to the requested date of planting substantial completion inspection. Remove and replace dead, unhealthy, or badly impaired plants according to the original specification, if so directed. Replace plants during the next planting season if this inspection is not within a planting season.
- B. End of Warranty Inspection and Replacements: Remove stakes, guy wires and tree wrapping at the end of the one year warranty period unless otherwise directed. Remove and replace dead, unhealthy or impaired plants according to the original specifications, as directed. Replace plants during the next planting season if this inspection is not within a planting season.

**END OF SECTION**

**SECTION 33 0110.58  
DISINFECTION OF WATER UTILITY PIPING SYSTEMS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Disinfection of site domestic water lines and site fire water lines specified in Section 33 1416.
- B. Testing and reporting results.

**1.02 RELATED REQUIREMENTS**

- A. Section 33 1416 - Site Water Utility Distribution Piping.

**1.03 REFERENCE STANDARDS**

- A. AWWA C651 - Disinfecting Water Mains 2014, with Addendum (2020).

**1.04 SUBMITTALS**

- A. See Section 01 3300 for submittal procedures.
- B. Test Reports: Indicate results comparative to specified requirements.
- C. Disinfection report:
  - 1. Type and form of disinfectant used.
  - 2. Date and time of disinfectant injection start and time of completion.
  - 3. Test locations.
  - 4. Initial and 24 hour disinfectant residuals (quantity in treated water) in ppm for each outlet tested.
  - 5. Date and time of flushing start and completion.
  - 6. Disinfectant residual after flushing in ppm for each outlet tested.
- D. Bacteriological report:
  - 1. Date issued, project name, and testing laboratory name, address, and telephone number.
  - 2. Time and date of water sample collection.
  - 3. Name of person collecting samples.
  - 4. Test locations.
  - 5. Initial and 24 hour disinfectant residuals in ppm for each outlet tested.
  - 6. Coliform bacteria test results for each outlet tested.
  - 7. Certification that water conforms, or fails to conform, to bacterial standards of New York State Department of Health.

**1.05 QUALITY ASSURANCE**

- A. Water Treatment Firm: Company specializing in disinfecting potable water systems specified in this Section with minimum three years documented experience.
- B. Testing Firm: Company specializing in testing potable water systems, certified by governing authorities of New York.
- C. Submit bacteriologist's signature and authority associated with testing.

**PART 2 PRODUCTS**

**2.01 DISINFECTION CHEMICALS**

- A. Chemicals: AWWA B300 Hypochlorite and AWWA B300 Hypochlorite.

**PART 3 EXECUTION**

**3.01 EXAMINATION**

- A. Verify that piping system and water well has been cleaned, inspected , and pressure tested.
- B. Schedule disinfecting activity to coordinate with start-up, testing, adjusting and balancing, demonstration procedures, including related systems.

### **3.02 DISINFECTION**

- A. Use method prescribed by the applicable state or local codes, or health authority or water purveyor having jurisdiction, or in the absence of any of these follow AWWA C651.
- B. Provide and attach equipment required to perform the work.
- C. Inject treatment disinfectant into piping system using the continuous feed method at minimum 50 mg/L free chlorine residual.
- D. Maintain disinfectant in system for 24 hours. Free chlorine residual shall be no less than 25 mg/L at the conclusion of the 24 hour disinfection.
- E. Operate all valves in the section being tested to ensure disinfection of the appurtenances.
- F. Flush, circulate, and clean until required cleanliness is achieved; use municipal domestic water.
- G. Collect samples for bacteriological analysis in accordance with AWWA C651.
- H. Repeat procedure if minimum free chlorine residual or bacteriological results are not satisfactory.
- I. Dispose of chlorinated water in accordance with local, state and federal regulations.
- J. Replace permanent system devices removed for disinfection.

### **3.03 FIELD QUALITY CONTROL**

- A. Test samples in accordance with AWWA C651.

**END OF SECTION**

**SECTION 33 1416  
SITE WATER UTILITY DISTRIBUTION PIPING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Water pipe for site conveyance lines.
- B. Pipe valves.
- C. Pipe and fittings for site water lines including domestic water lines and fire water lines.

**1.02 RELATED REQUIREMENTS**

- A. Section 31 2316.13 - Trenching: Excavating, bedding, and backfilling.
- B. Section 33 0110.58 - Disinfection of Water Utility Piping Systems: Disinfection of site service utility water piping.

**1.03 REFERENCE STANDARDS**

- A. ASTM D1785 - Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe, Schedules 40, 80, and 120 2021a.
- B. ASTM D2466 - Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 40 2021.
- C. ASTM D2467 - Standard Specification for Poly(Vinyl Chloride) (PVC) Plastic Pipe Fittings, Schedule 80 2020.
- D. ASTM D2855 - Standard Practice for the Two-Step (Primer and Solvent Cement) Method of Joining Poly (Vinyl Chloride) (PVC) or Chlorinated Poly (Vinyl Chloride) (CPVC) Pipe and Piping Components with Tapered Sockets 2020.

**1.04 SUBMITTALS**

- A. See Section 01 3300 for submittal procedures.
- B. Product Data: Provide data on pipe materials, pipe fittings, valves and accessories.
- C. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
- D. Project Record Documents: Record actual locations of piping mains, valves, connections, thrust restraints, and invert elevations. Identify and describe unexpected variations to subsoil conditions or discovery of uncharted utilities.

**1.05 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver and store valves in shipping containers with labeling in place.

**PART 2 PRODUCTS**

**2.01 WATER PIPE**

- A. PVC Pipe: ASTM D1785 Schedule 40.
  - 1. Fittings: ASTM D2466, PVC.
  - 2. Joints: ASTM D2855, solvent weld.
- B. Trace Wire: Magnetic detectable conductor, clear plastic covering, imprinted with "Water Service" in large letters.

**2.02 VALVES**

- A. Ball Valves Up To 2 Inches:
  - 1. Brass body, Teflon coated brass ball, rubber seats and stem seals, Tee stem pre-drilled for control rod, AWWA inlet end, compression outlet with electrical ground connector, with control rod, valve key, and extension box.

**2.03 BEDDING AND COVER MATERIALS**

- A. Bedding: As specified in Section 31 2316.13.

- B. Cover: As specified in Section 31 2316.13.

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

- A. Verify that building service connection and municipal utility water main size, location, and invert are as indicated.

#### **3.02 PREPARATION**

- A. Cut pipe ends square, ream pipe and tube ends to full pipe diameter, remove burrs.
- B. Remove scale and dirt on inside and outside before assembly.
- C. Prepare pipe connections to equipment with flanges or unions.

#### **3.03 INSTALLATION - PIPE**

- A. Maintain separation of water main from sewer piping in accordance with code.
- B. Route pipe in straight line.
- C. Install pipe to allow for expansion and contraction without stressing pipe or joints.
- D. Install access fittings to permit disinfection of water system performed under Section 33 0110.58.
- E. Slope water pipe and position drains at low points.

#### **3.04 INSTALLATION - VALVES AND HYDRANTS**

- A. Set valves on solid bearing in strict accordance with manufacturer's installation instructions.
- B. Center and plumb valve box over valve. Set box cover flush with finished grade.
- C. Provide a drainage pit, 36 inches square by 24 inches deep, filled with 2 inches of washed gravel. Encase elbow of hydrant in gravel to 6 inches above drain opening. Do not connect drain opening to sewer.

#### **3.05 FIELD QUALITY CONTROL**

- A. See Section 01 4000 - Quality Requirements, for additional requirements.
- B. Perform field inspection and testing in accordance with Section 01 4000.
- C. Pressure test water piping to 100 pounds per square inch.
- D. If tests indicate Work does not meet specified requirements, remove Work, replace and retest at no cost to Owner.

**END OF SECTION**

**SECTION 33 3113  
SITE SANITARY SEWERAGE GRAVITY PIPING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Sanitary sewerage drainage piping, fittings, and accessories.
- B. Connection of building sanitary drainage system to municipal sewers.
- C. Cleanout Access.

**1.02 RELATED REQUIREMENTS**

- A. Section 03 3000 - Cast-in-Place Concrete: Concrete for cleanout base pad construction.
- B. Section 31 2316 - Excavation: Excavating of trenches.
- C. Section 31 2316.13 - Trenching: Excavating, bedding, and backfilling.
- D. Section 31 2323 - Fill: Bedding and backfilling.

**1.03 DEFINITIONS**

- A. Bedding: Fill placed under, beside and directly over pipe, prior to subsequent backfill operations.

**1.04 REFERENCE STANDARDS**

- A. ASTM D2321 - Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications 2020.

**1.05 SUBMITTALS**

- A. See Section 01 3300 for submittal procedures.
- B. Product Data: Provide data indicating pipe, pipe accessories.
- C. Manufacturer's Certificate: Certify that products meet or exceed specified requirements.
- D. Manufacturer's Installation Instructions: Indicate special procedures required to install Products specified.
- E. Project Record Documents:
  - 1. Record location of pipe runs, connections, manholes, cleanouts, and invert elevations.
  - 2. Identify and describe unexpected variations to subsoil conditions or discovery of uncharted utilities.

**PART 2 PRODUCTS**

**2.01 SEWER PIPE MATERIALS**

- A. SDR-35 PVC, Plastic Pipe: ASTM D3034, Type PSM, Poly Vinyl Chloride (PVC) Material; inside nominal diameter as indicated on the Contract Drawings, bell and spigot style push on ring joint end.
  - 1. Minimum wall thickness for 4", 6", 8" and 10" sizes are as follows:
    - a. Size: 4"; 0.12" min. wall thickness
    - b. Size: 6"; 0.18" min. wall thickness
    - c. Size: 8"; 0.24" min. wall thickness
    - d. Size: 10"; 0.30" min. wall thickness
  - 2. Standard lengths shall be 20' and 12'-6" + 1 inch.
  - 3. Pipe Stiffness - Minimum "pipe stiffness" (F/y) at 5% deflection shall be 46 for all sizes when tested in accordance with ASTM Designation D2412, "External Loading Properties of Plastic Pipe by Parallel-Plate Loading".
- B. HDPE Forcemain: DR-11; ASTM F714; inside nominal diameter as indicated on Contract Drawings.

## **2.02 PIPE ACCESSORIES**

- A. Fittings: Same material as pipe molded or formed to suit pipe size and end design, in required tee, bends, elbows, cleanouts, reducers, traps and other configurations required.

## **2.03 BEDDING AND COVER MATERIALS**

- A. Pipe Bedding Material: As specified in Section 31 2316.13.
- B. Pipe Cover Material: As specified in Section 31 2316.13.

## **PART 3 EXECUTION**

### **3.01 GENERAL**

- A. Perform work in accordance with applicable code(s).

### **3.02 TRENCHING**

- A. See Section 31 2316.13 for additional requirements.
- B. Hand trim excavation for accurate placement of pipe to elevations indicated.
- C. Backfill around sides and to top of pipe with cover fill, tamp in place and compact, then complete backfilling.

### **3.03 INSTALLATION - PIPE**

- A. Verify that trench cut is ready to receive work and excavations, dimensions, and elevations are as indicated on layout drawings.
- B. Install pipe, fittings, and accessories in accordance with manufacturer's instructions. Seal watertight.
- C. Lay pipe to slope gradients noted on layout drawings; with maximum variation from true slope of 1/8 inch in 10 feet.
- D. Make watertight connection to building sanitary sewer outlet.
- E. Extreme care shall be taken to provide proper pipe foundations and pipe sidefills in accordance with this section of the specifications and the recommendations of pipe manufacturer, maintaining accurate alignment of the pipe at all times. The installed sewer must meet the leakage test as specified in Part 3.03
- F. Deflection Test for Installed Pipe - Thirty (30) days (or greater) after installation of PVC pipe and backfill of trench is completed, the Contractor shall manually pull a rigid ball or mandrel (GO-NO-GO device) through all PVC mainline pipes, the size to be 95% of the diameter of the installed sewer. Any section of pipe not able to pass this test shall be replaced with new pipe and the test, including leakage test, shall be repeated until successful.

### **3.04 TESTING**

- A. SDR-35 PVC Gravity Sewer Leakage Testing:
  - 1. Unless otherwise stated or ordered by the Engineer, all gravity sewers, including manholes, service connections and sewer laterals constructed under this contract, shall be tested for leakage and shall satisfactorily meet the test requirements prior to final acceptance of the work. No connections to existing sewer laterals shall be made until the leakage requirements are met. The Contractor shall furnish all labor, testing materials and equipment and shall perform the tests described herein to the satisfaction of the Engineer. The Contractor shall make all necessary repairs or replacement, and shall repeat the final leakage test(s), until the minimum leakage requirements are met.
  - 2. The proper procedure for air testing of sanitary sewers is described in the ASTM F 1417-92, entitled Standard Test Method For Installation Acceptance of Plastic Gravity Sewer Lines Using Low-Pressure Air.
  - 3. Air testing shall be supported by corroborative hydrostatic testing which shall be conducted by filling a manhole to manhole sewer section with water and measuring the loss which occurs over a minimum 12 hour period. Minimum positive head shall be maintained at 2 feet for the test to be valid. Results must not exceed 100 gallons per inch



of pipe diameter per mile of pipe per day. Upon an acceptable hydrostatic test, the same manhole to manhole sewer section shall be air tested, whereby this air test result shall be reasonable correlated to subsequent air tests, until additional hydrostatic testing is again performed.

4. Approximately five (5) percent of the mainline sewers shall be hydrostatically tested, the location of which will be as directed by the Engineer.
  5. It is extremely important that the various test plugs be properly installed and braced to prevent blowouts. It is also important to maintain adequate pressure relief valves to prevent over-pressurizing the system. A maximum relief pressure of 10 psi is suggested in most literature.
  6. Although line testing may be done at any time during the construction phase, there are two time periods when testing is of special value (1) prior to placement of paving materials, in order to avoid unnecessary expense in locating and repairing leaks, and (2) at as late a date as possible, after work has been completed and some settlement has had a chance to occur. This later period is the appropriate time for the final line acceptance test, since significant damage can occur after backfill from subsequent settling.
  7. All portions of a new sewage system should be tested, including any building laterals that may be constructed in conjunction with the main lines.
  8. Manholes shall be visually inspected for leakage during high groundwater condition.
  9. All sections of new sanitary sewers and sewer laterals shall be tested by low pressure air testing. Provide temporary bypass piping, pumping and/or temporary lateral connection to existing sewers to maintain sewage flow during construction of new sewers and testing.
  10. Leakage test will not be required on storm sewer lines.
  11. Backfill of the sewer trench to ground surface must be in place and completed to the degree of compaction specified for at least thirty (30) days prior to start of testing of sewers.
  12. For testing of sanitary sewers, groundwater levels must be determined prior to each test as follows:
  13. Determination of Groundwater Level: An accurate determination of groundwater level shall be obtained at each manhole. The Contractor shall install a 1/2 inch diameter capped pipe nipple through the manhole wall along the side of the lowest sewer line entering the manhole. The outer end to be covered with clean crushed stone. This shall be done at the time the sewer line is installed. Immediately prior to the performance of the Line Acceptance Test, the groundwater shall be determined by removing the pipe cap, blowing air through the pipe nipple into the ground so as to clear it, and then connecting a clear plastic tube to the nipple.
  14. The hose shall be held vertically and a measurement of the height in feet of water over the invert of the pipe shall be taken after the water has stopped rising in this plastic tube. To the height of the groundwater add 5 feet to arrive at the required test height.
- B. Pressure Testing SDR - 21 PVC and HDPE Force Main Sewers:
1. The Contractor in the presence of the Engineer shall conduct on all forcemain sewer pipe a pressure test.
  2. The test shall be repeated until satisfactory to the Engineer.
  3. Flushing of Piping: Force mains shall be pigged and flushed thoroughly before connection is made to system piping in order to remove foreign materials which may have entered the main during the course of the installation or which may have been present in existing piping. The minimum rate of flow shall not be less than the pump rate of the system. For all systems, the pigging and flushing operations shall be continued for a sufficient time to ensure thorough cleaning.
  4. Pressure Test: The Contractor shall provide all necessary equipment and shall perform all work required in connection with the tests. The pipe shall be tested by hydrostatic pressure 50 percent in excess of the normal working (system) pressure or 50 psi for a period of 2 hours, or greater. Each section tested shall be slowly filled with water, taking care to expel all air from the pipes. Required pressure as measured at the point of lowest

elevation shall be applied for not less than 2 hours and all pipe, fittings, valves, and joints shall be carefully examined for defects. Leaking joints shall be made watertight. The Contractor shall at his own expense make the necessary repairs or replacements required to permanently reduce the leakage within the specified limit and the tests shall be repeated until the leakage requirement is met. Any defects found in the system shall be made good at the expense of the Contractor so as to conform strictly to the specifications and to the satisfaction of the Owner's agent. All repairs shown necessary by the tests are to be made, broken or cracked pipe replaced, all deposits removed, and all pipe left true to line and grade, entirely cleaned, free from lumps of cement, protruding gaskets, bulkheads, etc., and ready for use before final acceptance is made by the Owner.

5. Sections of mains under test must be properly secured during testing to prevent damage to system from pipe movement or disturbance.

### **3.05 PROTECTION**

- A. Protect pipe and bedding cover from damage or displacement until backfilling operation is in progress.

**SECTION 33 4000  
STORM DRAINAGE UTILITIES**

**PART 1 - GENERAL**

**1.01 SECTION INCLUDES**

- A. Drainage pipe
- B. Downspout boots
- C. Edge drains
- D. Drainage structures
- E. Frames, grates and covers
- F. Headwall and end sections
- G. Filter fabric
- H. Warning tape

**1.02 RELATED SECTIONS**

- A. Section 31 2316.13 – Trenching
- B. Section 31 2323 – Fill

**1.03 REFERENCE STANDARDS**

- A. ASTM A74 - Standard Specification for Cast Iron Soil Pipe and Fittings.
- B. ASTM C76 - Standard Specification for Reinforced Concrete Culvert, Storm Drain, and Sewer Pipe.
- C. ASTM C478/C478M - Standard Specification for Circular Precast Reinforced Concrete Manhole Sections
- D. ASTM D695 - Standard Test Method for Compressive Properties of Rigid Plastics.
- E. ASTM D1876 - Standard Test Method for Peel Resistance of Adhesives (T-Peel Test).
- F. ASTM D2321 - Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications
- G. ASTM D3034 - Standard Specification for Type PSM Poly(Vinyl Chloride) (PVC) Sewer Pipe and Fittings
- H. ASTM D3350 - Standard Specification for Polyethylene Plastics Pipe and Fittings Materials.
- I. ASTM D3786/D3786M - Standard Test Method for Bursting Strength of Textile Fabrics—Diaphragm Bursting Strength Tester Method.
- J. ASTM D4491/D4491M - Standard Test Methods for Water Permeability of Geotextiles by Permittivity.
- K. ASTM D4533/D4533M - Standard Test Method for Trapezoid Tearing Strength of Geotextiles.
- L. ASTM D4632/D4632M - Standard Test Method for Grab Breaking Load and Elongation of Geotextiles.
- M. ASTM D4751 - Standard Test Methods for Determining Apparent Opening Size of a Geotextile
- N. ASTM D4833/D4833M - Standard Test Method for Index Puncture Resistance of Geomembranes and Related Products
- O. ASTM F477 - Standard Specification for Elastomeric Seals (Gaskets) for Joining Plastic Pipe
- P. AASHTO M 252 - Standard Specification for Corrugated Polyethylene Drainage Pipe
- Q. AASHTO M 294 - Standard Specification for Corrugated Polyethylene Pipe, 300- to 1500-mm (12- to 60-in.) Diameter

#### **1.04 SUBMITTALS**

- A. Comply with the requirements of Section 01 3000 – Administrative Requirements and as modified below.
- B. Product Data: Submit manufacturer's name, specifications and installation instructions for each item specified.
- C. Shop Drawings: Submit details of all underground structures including catch basins, drop inlets, storm manholes, drywells, trench drains, headwalls, outlet structures, frames and grates, frames and covers, culvert end sections and similar items indicated on the Contract Documents.
- D. Closeout Procedures: Comply with the requirements of Section 01 7800.

#### **1.05 QUALITY ASSURANCE**

- A. Regulatory Requirements: Obtain written permission from applicable agencies prior to the start of construction. Submit one copy of the permit to the Owner's Representative.
- B. Comply with applicable municipal regulations. Coordinate connections into existing municipal sewers with appropriate town/village/county/city or state representatives. Pay for all fees associated the connection to municipal sewer system.

#### **1.06 PROJECT CONDITIONS**

- A. Field Measurements: Establish and maintain required lines and elevations for grade control.

#### **1.07 SEQUENCING AND SCHEDULING**

- A. Proceed with and complete storm drainage installation as rapidly as portions of the site become available, working within seasonal limitations for the work required.

### **PART 2 PRODUCTS**

#### **2.01 PIPING**

- A. Reinforced Concrete Pipe (RCP): Piping complying with ASTM C 76. Unless specifically noted otherwise, use Class III, Wall B pipe with watertight, flexible, rubber gasket joints complying with ASTM C443.
- B. High Density Polyethylene Pipe (HDPE): Solid or perforated double wall smooth interior pipe complying with the following:
  - 1. 4" to 10" diameter pipe to conform to AASHTO M 252. 12" to 36" diameter pipe to conform to AASHTO M 294.
  - 2. Coefficient of Roughness (Interior Pipe Surface): 0.012 maximum (Manning Formula)
  - 3. Classification: Type S
  - 4. Minimum Pipe Stiffness Values
    - a. 4" – 12" Diameter: 50 psi
      - 1) 15" Diameter: 42 psi
      - 2) 18" Diameter: 40 psi
      - 3) 24" Diameter: 34 psi
      - 4) 30" Diameter: 28 psi
      - 5) 36" Diameter: 22 psi
  - 5. Joint Couplings: Polyethylene, bell and spigot type couplers utilizing an elastometric gasket conforming to ASTM F 477. Snap on type or split collar through 24" diameter, screw on type where applicable.
    - 1) Corrugated to match pipe corrugations, width not less than one half the pipe diameter.
    - 2) Split couplings shall engage an equal number of corrugations on each side of the joint
  - 6. Fittings: Either molded or fabricated, high density polyethylene components meeting the properties specified for, and designed specifically for the pipe manufactured by the pipe manufacturer.

7. Perforated Pipe: Conform to AASHTO M-252 or AASHTO M-294, Type SP with Class I perforations.
8. Specifications have been based on products manufactured by Advanced Drainage Systems, Inc, Columbus, Ohio (Tel. #614-457-3051) or Hancor, Inc., Findlay, Ohio (Tel. #800-847-5880).
  - a. Corrugated Polyethylene Piping: Solid and perforated piping complying with the following:
9. Pipe Classification: AASHTO M252, Type S
10. Material Classification: ASTM D 3350
11. Property Description: Cell Class 324420C
12. Pipe Size: As indicated on the Contract Documents
13. Perforation Size: 9/16" by 1/16" slots with a minimum inlet area of 2.4" per lineal foot of pipe.
14. Joint Couplings: External snap couplers with gaskets for solid wall and external snap couplers without gaskets for perforated pipe
15. Specifications have been based on products manufactured by Advanced Drainage Systems, Inc, Columbus, Ohio (Tel. #614-457-3051) or Hancor, Inc., Findlay, Ohio (Tel. #800-847-5880).
- C. Hub and Spigot Cast Iron Soil Pipe and Fittings: ASTM A-74, service and extra heavy weight hub and spigot pipe and fittings, similar to products manufactured by Charlotte Pipe and Foundry with compression, one piece molded dual O-ring, annular type gasket specially designed to use with hub and plain end soil pipe, similar to "Neoprene Elastomer" by Dupont, "DualTite" by Alabama Pipe, or "Ty-Seal" by Tyler.

## 2.02 DOWNSPOUT BOOTS

- A. Round Downspouts: 18" cast iron transition boot with 4" diameter spigot end and cast iron securing strap with 5/16" diameter cast holes used to connect exterior downspouts to underground storm drainage systems. Specifications have been based on "Figure No. 1787-18" by J.R. Smith Manufacturing Company, Montgomery, Alabama (Tel #334-277-8520).
  1. Secure to masonry walls with stainless steel flat head bolts.
    - a. Rectangular Downspouts
  2. 3" X 4" Size: 24" cast iron transition boot with 4" spigot end and cast iron securing strap with 5/16" diameter cast holes used to connect exterior downspouts to underground storm drainage systems. Specifications have been based on "Figure No. 1785-24" by J.R. Smith Manufacturing Company, Montgomery, Alabama (Tel #334-277-8520).
    - a. Secure to masonry walls with stainless steel flat head bolts.
  3. 4" X 5" Size: 24" cast iron transition boot with 4" spigot end and cast iron securing strap with 5/16" diameter cast holes used to connect exterior downspouts to underground storm drainage systems. Specifications have been based on "Figure No. 1786-24" by J.R. Smith Manufacturing Company, Montgomery, Alabama (Tel #334-277-8520).
    - a. Secure to masonry walls with stainless steel flat head bolts.

## 2.03 EDGE DRAINS

- A. 1" X 12" polyethylene, multi-channelled edge drain with polypropylene filter fabric sock. Provide all fittings and connections required for installation fabricated by the manufacturer of the drainage piping used.
  1. Pipe Properties
    - a. Compressive Strength (ASTM D 695): 6000 psf (41.7 psi) minimum
      - 1) Flow Rate (ASTM D 4176): 11 gpm/sf
      - 2) Peel Strength (ASTM D 1876): 35 lbs/ft minimum
      - 3) Core Thickness: 0.80"
  2. Drainage Fabric Properties
    - 1) Grab Tensile Strength (ASTM D 4632): 120 lbs.
    - 2) Grab Elongation Strength (ASTM D 4632): 60%
    - 3) Mullen Burst Strength (ASTM 3786): 90 psi
    - 4) Puncture Strength (ASTM 4833): 30 lbs.

- 5) Trapezoid Tear Strength (ASTM D 4533): 40 lbs.
- 6) V. Resistance (ASTM D 4355): 70% strength retained
- 7) O.S.: Per ASTM D 4751
- 8) Permeability (ASTM 4491): K Fabric>K Soil
- 9) Permittivity (ASTM 4491): 7
3. Specifications have been based on "AdvanEdge Pipe" manufactured by Advanced Drainage Systems, Inc, Columbus, Ohio (Tel. #614-457-3051).

## 2.04 DRAINAGE STRUCTURES

- A. Catch Basins: Pre-cast, round, reinforced concrete structures with integral floors and accessories complying with the following:
  1. Riser Sections: ASTM C 478, height and width as indicated on the Contract Documents.
  2. Joints Between Riser Sections: Rubber gaskets per ASTM C 443 as recommended by the manufacturer.
  3. Concrete for Pre-Cast Units: Air content 6% by volume with an allowable tolerance of +/-1.5%. Minimum compressive strength of 4000 psi after 28 days.
  4. Pre-Cast Concrete Structure Load Rating: AASHTO HS-20 with 30% impact and 130 lb/cf equivalent soil pressure.
  5. Steps: Polypropylene plastic steps reinforced with minimum ½" diameter steel rod integrally cast into the pre-cast section sidewalls and complying with Section 725-02.01 of the New York State Department of Transportation Standard Specifications.
  6. Frame and Grate: Provide castings of uniform quality, free from blow holes, porosity, hard spots, shrinkage defects, cracks or other injurious defects. Manufacture all castings true to pattern and free from surface imperfections. Provide heavy duty frames and grates with machined horizontal bearing surfaces.
    - a. Casting Load Rating: AASHTO H20 wheel loading requirements. Manufacture, workmanship and certified proof-load tests shall conform to AASHTO M306-89 Standard Specification for Drainage Structure Castings.
      - 1) Material: Cast iron complying with ASTM A 48, Class 30B or 35B.
    - b. Frames: 7" deep with minimum 24" clear, round opening and 34" bottom flange diameter.
      - 1) Grates: 24" round, bicycle safe units, 1 3/8" thick.
    - c. Coatings: Minimum one shop coat of asphaltum to be applied to all frame and grate surfaces.
    - d. Acceptable Casting: Specifications have been based on "Model #1197 Straight Type Frame" and "Type A Bicycle Grate" by Syracuse Castings, Cicero, New York (Tel #315-699-2601)
- B. Manholes: Pre-cast, round, reinforced concrete structures with integral floors and accessories complying with the following:
  1. Riser Sections: ASTM C 478, height and width as indicated on the Contract Documents.
  2. Joints Between Riser Sections: Rubber gaskets per ASTM C 443 as recommended by the manufacturer.
  3. Concrete for Pre-Cast Units: Air content 6% by volume with an allowable tolerance of +/-1.5%. Minimum compressive strength of 4000 psi after 28 days.
  4. Pre-Cast Concrete Structure Load Rating: AASHTO HS-20 with 30% impact and 130 lb/cf equivalent soil pressure
  5. Steps: Polypropylene plastic steps reinforced with minimum ½" diameter steel rod integrally cast into the pre-cast section sidewalls and complying with Section 725-02.01 of the New York State Department of Transportation Standard Specifications.
  6. Frame and Cover: Provide castings of uniform quality, free from blow holes, porosity, hard spots, shrinkage defects, cracks or other injurious defects. Manufacture all castings true to pattern and free from surface imperfections. Provide heavy duty frames and covers with machined horizontal bearing surfaces.
    - a. Casting Load Rating: AASHTO H20 wheel loading requirements. Manufacture, workmanship and certified proof-load tests shall conform to AASHTO M306-89 Standard Specification for Drainage Structure Castings.

- b. Material: Cast iron complying with ASTM A 48, Class 30B or 35B.
- c. Frames: 7" deep with minimum 24" clear, round opening and 34" bottom flange diameter.
  - 1) Covers: 24" round, 1 3/8" thick.
- d. Coatings: Minimum one shop coat of asphaltum to be applied to all frame and cover surfaces.
- e. Acceptable Casting: Specifications have been based on "Model #1032 Straight Type Frame and Solid Cover" by Syracuse Castings, Cicero, New York (Tel #315-699-2601)

## **2.05 HEADWALLS AND END SECTIONS**

- A. High Density Polyethylene (HDPE) Units: Flared end section fabricated in accordance with the pipe manufacturer's specifications.
- B. Concrete Headwalls: Precast or cast in place units, 4000 psi, 28 day compressive strength with #4 bar reinforcement at 12" on center, each way.

## **2.06 FILTER FABRIC**

- A. Continuous filament fabric consisting of polypropylene fibers and heat bonded nylon sheathed polypropylene fibers.
  - 1. Specifications have been based on "Mirafi 140N" manufactured by Mirafi Construction Products, Pendergrass, Georgia (Tel. #706-693-2226).

## **2.07 WARNING TAPE**

- A. Standard, 4 mil polyethylene, 3" wide tape, purple, detectable type tape, imprinted with the words "CAUTION BURIED STORM SEWER" in black letters.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Installer Verification of Conditions: Examine conditions under which storm drainage is to be installed with the materials and components specified in this section. Affected Prime Contractors, the Owner's Representative and the Project Designer shall be notified in writing of any conditions detrimental to the proper and timely installation of the work.
  - 1. When the installer confirms conditions as being acceptable to ensure proper and timely installation of the work and to ensure requirements of applicable warranties or guarantees can be satisfied, submit written confirmation to the Project Designer. Failure to submit written confirmation and subsequent installation will be assumed to indicate conditions are acceptable to the installer.

### **3.02 PREPARATION**

- A. Excavation of trenches and for appurtenances and backfilling for storm drains shall be in accordance with the applicable portions of Project Manual Section 02300 – Earthwork and Section 02320 – Trenching.
- B. Inspect all pipe and fittings prior to installation. Remove defective pipe and fittings from the site.

### **3.03 INSTALLATION**

- A. Pipe Installation
  - 1. Lay pipes true to line and grade. Gravity flow storm drainage systems shall be laid with bells facing upgrade.
  - 2. Do not lay pipe on unsuitable material, in wet trenches or when a trench and weather conditions are unsuitable for the work.
  - 3. Support the pipe on compacted bedding material.
  - 4. Clean interior of all pipe thoroughly before installation.
  - 5. Lower pipe in to trench carefully and bring to the proper line, grade and joint. After joining, the interior of each pipe shall be thoroughly wiped or swabbed to remove any dirt, trash or excess jointing materials.

6. Do not walk on pipe in trenches until covered by layers of backfill to a minimum depth of 12" over the crown of the pipe.
  7. Install gravity sewer pipe to comply with the manufacturer's specifications.
  8. Warning tape shall be continuously placed 12" above the storm sewer piping.
- B. Concrete Drainage Unit Installation
1. Pre-cast reinforced concrete rings shall be installed true and plumb on a minimum 6" aggregate base bedding compacted to 95% of the maximum density.
  2. The joints between rings, the base and the top shall be sealed with preformed flexible gasket material specifically manufactured for this type of application. Adjust the length of rings so that eccentric cone tops and top slabs will be at the required elevation. Cutting of the conical top section will not be acceptable.
  3. Grout storm piping entering units in place with the ring penetration completely filled for the full depth of the wall.
  4. Install drainage unit frames, covers and grates on a mortar bed flush with the finish pavement or surrounding lawn area.
- C. Building Foundation Drainage: Install at interior and building perimeter areas in strict accordance with ASTM D 2321 and the manufacturer's specifications.

#### **3.04 ADJUSTING AND CLEANING**

- A. Deflection Tests: Provided by the Prime Contractor in accordance with the requirements of Project Manual Section 01 40 00 – Quality Requirements.
- B. Upon completion of the installation, leave all components of the storm drainage system completely free from silt, debris and other obstructions.
- C. Repairs and Protection of Storm Drainage Infrastructure
1. Repair or replace broken or defective storm drainage components as directed by the Project Designer.
  2. Protect storm drainage from damage until acceptance of the infrastructure construction.

**END OF SECTION**



**SECTION 33 4923.10**  
**SUBSURFACE STORM DRAINAGE WATER RETENTION STRUCTURES - HDPE**

**PART 1 GENERAL**

**1.01 SUMMARY**

- A. This section includes stormwater drainage systems for building roof drainage and site area drainage.
- B. Work includes the installation of the StormTech chamber drainage system.
- C. Related work includes the installation of drainage inlet structures, manholes, and outlet structures.

**1.02 RELATED REQUIREMENTS**

- A. Section 31 2323 - Fill
- B. Section 33 4000 - Storm Utility Drainage Piping.

**1.03 ABBREVIATIONS**

- A. PP: Polypropylene
- B. HDPE: High Density Polyethylene
- C. PE: Polyethylene
- D. PVC: Polyvinyl Chloride
- E. ASTM - American Society for Testing and Materials
- F. AASHTO - American Association of State Highway and Transportation Officials
- G. ADS - Advanced Drainage Systems, Inc.
- H. TSS - Total Suspended Solids

**1.04 DEFINITIONS**

- A. Stormwater Chamber System: All products associated with the drainage system including but not limited to chambers, end caps, pipe, fittings, stone, geotextile, and drainage structures.
- B. Subsurface Drainage System: refers to the StormTech subsurface stormwater chamber system.
- C. Manifolds and manifold piping refer to the piping system to inlet and outlet rows of chambers.
- D. STORMTECH brand name is referred to as CHAMBER MANUFACTURER hereafter.
- E. ADS and HANCOR brand names are considered interchangeable within this section.

**1.05 REFERENCE STANDARDS**

- A. American Association of State Highway and Transportation Officials (AASHTO)
  - 1. AASHTO LRFD Bridge Design Specifications Section 3 - Loads and Load Factors
  - 2. AASHTO LRFD Bridge Design Specifications Section 12 - Buried Structures and Tunnel Liners
  - 3. AASHTO M 43 - Standard Specification for Sizes of Aggregate for Road and Bridge Construction.
  - 4. AASHTO M 288 - Standard Specification for Geotextile Specification for Highway Applications
  - 5. AASHTO M 294 - Standard Specification for Corrugated Polyethylene Pipe, 300- to 1500-mm Diameter
- B. American Society for Testing and Materials (ASTM)
  - 1. ASTM F 2418 - Standard Specification for Polypropylene (PP) Corrugated Wall Stormwater Collection Chambers
  - 2. ASTM F 2787 - Standard Practice for Structural Design of Thermoplastic Corrugated Wall Stormwater Collection Chambers

3. ASTM D 2321 - Standard Practice for Underground Installation of Thermoplastic Pipe for Sewers and Other Gravity-Flow Applications
4. ASTM F 2306 - Standard Specification for 12 to 60 in. [300 to 1500 mm] Annular Corrugated Profile-Wall Polyethylene (PE) Pipe and Fittings for Gravity-Flow Storm Sewer and Subsurface Drainage Applications

#### **1.06 ADMINISTRATIVE REQUIREMENTS**

- A. Preinstallation Meetings
  1. A Preinstallation meeting between StormTech representative and general contractor is recommended to discuss the chamber system installation.
    - a. StormTech offers installation consultations to installing contractors.
    - b. Contact StormTech at least 30 days prior to system installation to arrange a preinstallation consultation.
- B. Sequencing
  1. Contractor is responsible for coordinating the installation of the subsurface stormwater chamber system with the installation of permanent structures on site.
    - a. Construction loads for permanent structures may require the subsurface chamber system to be installed after the permanent structure(s) on site.
  2. Coordinate stormwater chamber system connections to off site storm sewer with the appropriate agency having jurisdiction.
  3. Coordinate stormwater chamber system connections to existing on-site storm sewer.
  4. Coordinate with building roof drainage systems.
  5. Coordinate with other utility work.

#### **1.07 SUBMITTALS**

- A. The following shall be submitted by contractor in accordance with Section 01 3300 Submittal Procedures:
  1. Product Specifications for the following:
    - a. StormTech chambers and end caps
    - b. ADS PE Pipe
  2. Product Installation Instructions for the following:
    - a. StormTech chambers and end caps
    - b. ADS PE Pipe
  3. Inspection and Maintenance Instructions for the following:
    - a. StormTech Isolator™ Row

#### **1.08 QUALITY ASSURANCE**

- A. Regulatory Agency Approvals:
  1. Environmental Agency Compliance: Comply with regulations pertaining to storm drainage systems.
  2. Utility Compliance: Comply with regulations pertaining to storm drainage systems. Include standards of water and other utilities where appropriate.

#### **1.09 DELIVERY, STORAGE, AND HANDLING**

- A. Contractor shall check all materials upon delivery to assure that the proper chamber size and plastic pipe and pipe fittings have been received.
- B. Contractor shall check the chambers for shipping damage prior to installation. Units that have been damaged must not be installed. Contractor shall contact chamber manufacturer immediately upon discovery of any damage. Chambers may be left palletized until the units are ready to be installed.
- C. All chambers, pipe and pipe fittings shall be delivered to the site and unloaded with handling that conforms to the manufacturer's instructions for reasonable care.
- D. Protect chamber and chamber fittings from dirt and damage.

- E. All pipe and chambers shall be protected against impact, shock and free fall, and only equipment of sufficient capacity and proper design shall be used in the handling of the pipe. Storage of the pipe on the job shall be in accordance with the pipe manufacturer's recommendations.
- F. Contractor shall refer to the fabric manufacturer's guidance handling and storage of fabric products on site.

## **PART 2 PRODUCTS**

### **2.01 MANUFACTURERS**

- A. Manufacturers
  - 1. StormTech, Inc.
  - 2. Advanced Drainage Systems, Inc.
  - 3. Hancor, Inc.

### **2.02 STORMWATER CHAMBER SYSTEM**

- A. Chamber Options
  - 1. Only stormwater chamber systems evaluated by a licensed design engineer and found to meet AASHTO section 12.12 safety factors are allowed.
  - 2. Stormwater chambers must be designed in accordance with ASTM F 2418 Standard Specification for Polypropylene (PP) Corrugated Wall Stormwater Collection Chambers.
  - 3. Stormwater chambers must be designed in accordance with ASTM F 2787 Standard Practice for Structural Design of Thermoplastic Corrugated Wall Stormwater Collection Chambers.
  - 4. Chamber systems allowed under this specification include:
    - a. StormTech MC-4500
- B. Performance
  - 1. The contractor shall submit a structural evaluation by a registered structural engineer that demonstrates that the safety factors specified in the AASHTO LRFD Bridge Design Specifications, Section 12.12 are met. The 50-year creep modulus data specified in ASTM F 2418 must be used as part of the AASHTO structural evaluation to verify long-term performance.
  - 2. Only mechanical and material properties that were determined in accordance with ASTM test methods shall be allowed for structural design of the chambers.
  - 3. Only chambers affixed with the ASTM F 2418 designation shall be considered as meeting ASTM F 2418.
  - 4. Performance of the stormwater treatment system shall be in accordance with Section 2.03 of this specification.
  - 5. The contractor shall submit design summary by the manufacturer that demonstrates that the system is designed to convey peak flow rates without scour of foundation stone.
- C. Materials
  - 1. Chamber
    - a. Chambers shall be injection molded from virgin polypropylene resin and be yellow in color.
    - b. Chamber rows shall provide continuous, unobstructed internal space with no internal support panels in order to provide ease of access for inspection and maintenance functions.
    - c. Inspection ports shall be installed and constructed per project plans. Note that inspection ports shall only be installed along the Isolator™ Row to allow for inspection of the sediment build up over time.
    - d. The chambers shall be open-bottomed.
    - e. The chamber shall incorporate an overlapping corrugation joint system to allow chamber rows of almost any length to be built.
  - 2. End Caps

- a. End caps shall be injection molded from polyethylene or polypropylene resin and allow pipe connections with polyethylene pipe.
  - b. All chamber rows shall be terminated with an end cap. End cap placement on end of chamber will vary depending on chamber model. End caps shall have a curved ace capable of resisting typical horizontal and vertical loads.
  - c. End caps may incorporate cutting guides to allow easy field cutting for various diameters of pipe. Cutting guides shall be located at both the top and bottom of each end cap.
- 3. Manifold Piping
  - a. Manifold piping shall be designed to ensure that peak flows are distributed to the rows of chambers without scour of foundation stone.
  - b. Manifold piping shall be of HDPE piping such that accepted equations of hydraulics can be used as a basis for design.
- 4. Stone
  - a. Refer to specification section 31 2323 Fill.
- 5. Fabric
  - a. Refer to specification section 33 4111 Site Storm Utility Piping.

## **2.03 ACCESSORIES**

- A. Spacers can be used to obtain the required minimum spacing between chamber rows.
- B. Pipe plugs can be used during construction on all inlet pipes to the stormwater chamber system to prevent construction sediment from entering the Isolator™ Row system. Pipe plugs to be removed once construction of the system is complete and no further construction sediment loading is expected.

## **PART 3 EXECUTION**

### **3.01 PREPARATION**

- A. General
  - 1. Installing contractors are required to use and understand the latest manufacturer's installation instructions prior to beginning system installation.
    - a. See Section 1.06 for manufacturer preinstallation meeting information.
    - b. Chamber products must be designed and installed in accordance with the manufacturer's minimum requirements. Failure to do so will void the manufacturer's limited warranty.
  - 2. The contractor shall install all drainage structures, pipe, and chambers in the locations shown on the design engineer's drawings and/or as approved by the Owner. Pipe shall be of the type and sizes specified on the drawings and shall be laid accurately to line and grade. Structures shall be accurately located and properly oriented.
  - 3. Chambers, pipe and drainage structures shall be inspected prior to installation and any defective or damaged product shall be replaced accordingly.
  - 4. Contact local underground utility companies prior to construction.
  - 5. The contractor must apply erosion and sediment control measures to protect the stormwater system during all phases of site construction per local codes and design engineer's specifications.
- B. Site Preparation
  - 1. Excavation must be free of standing water. Dewatering measures must be taken if required.
    - a. When groundwater is present in the work area, dewater to maintain stability of in-situ and imported materials. Maintain water level below pipe bedding and foundation to provide a stable trench bottom.
  - 2. Prepare the chamber bed's subgrade soil as outlined in the engineer's drawings. Requirement for subgrade soil bearing capacity should meet or exceed the chamber manufacturer's required allowable subgrade soil bearing capacity. The contractor must report and discrepancies with subgrade soil's bearing capacity to the design engineer.

### **3.02 CHAMBER INSTALLATION AND BACKFILLING**

- A. Install chamber system flat or at constant slope between points at elevations indicated.
- B. Construct fabric and stone foundation per chamber manufacturer's installation instructions.
- C. Construct the chamber bed by joining the chambers lengthwise in rows. Attach chambers by overlapping the end corrugation of one chamber onto the end corrugation of the last chamber in the row.
- D. See pipe manufacturer's installation instructions for pipe assembly.
- E. Stone placement between chamber rows and around perimeter must follow instructions as indicated in the most current version of the chamber manufacturer's installation instructions.
- F. The contractor must refer to the chamber manufacturer's installation instructions for a table of acceptable vehicle loads at various depths of cover. The contractor is responsible for preventing vehicles that exceed the chamber manufacturer's requirements from traveling across or parking over the chamber system. Temporary fencing, warning tape and appropriately located signs are commonly used to prevent unauthorized vehicles from entering sensitive construction areas.
- G. Refer to the chamber manufacturer's installation instructions for minimum requirements for backfill material above the stormwater chamber system.
- H. See pipe manufacturer's installation instructions for guidance on installing the plastic pipe fittings to the chamber system.

### **3.03 PROTECTION**

- A. Protect all inlets to the stormwater chamber system during construction. As noted in Section 2.05, pipe plugs may be used in the inlet manhole pipes to prevent construction sediments from clogging the system. Once construction has ceased, the pipe plugs are removed to allow normal system functionality.
- B. All inlet and outlet structures should be protected against construction sediments.

### **END OF SECTION**