

# PROJECT MANUAL

## HIGHLAND FALLS – FORT MONTGOMERY CENTRAL SCHOOL DISTRICT

21 Morgan Road  
Highland Falls, New York 10928

### James I. O'Neill Renovation Project

SED Control No.'s  
44-09-01-04-0-008-017 James I. O'Neill High School

BCA Project No. 2020-117



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

401 East State Street, Suite 200  
Ithaca, New York 14850  
(607) 319-4053 / Fax (315) 782-7192

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

**VOLUME I OF I  
BIDDING DOCUMENTS AND TECHNICAL SPECIFICATIONS  
DIVISIONS 00 – 07, 09 – 12, 14, 26, 31 & 32**

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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## **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**



## NOTICE TO BIDDERS

**Highland Falls-Fort Montgomery CSD**, invites the submission of Sealed Bid Proposals to furnish materials and labor to complete the

James I. O'Neill Renovation Project  
Project No. 2020-117

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 – General Construction  
Contract No. 2 – Electrical Construction

Sealed Bid Proposals will be received until **3:00 PM.** prevailing time, on Wednesday, **April 21, 2021**, at the

James I. O'Neill High School  
Superintendent's Office  
21 Morgan Road  
Highland Falls, New York 10928

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

**PLANS AND SPECIFICATIONS REMAIN THE PROPERTY OF THE ENGINEER AND MUST BE RETURNED IN GOOD CONDITION WITHIN THIRTY (30) BUSINESS DAYS AFTER AWARD OF CONTRACT OR REJECTION OF BIDS.** The plan deposit for one set of Plans and Specifications will be refunded to bona fide bidders returning Plans and Specifications to the Engineer's office within 30 business days after award of Contract or rejection of bids. A partial refund of the plan deposit, in an amount equal to the full amount of such deposit, less the actual cost of reproduction of the Plans and Specifications shall be made to non-bidders and unsuccessful bidders for the return of all other copies of the Plans and Specifications in good condition within 30 business days following the award of the Contract or the rejection of the bids.

A pre-bid conference will not be required for this project. If any contractor would like to walk the areas of the scope of work, you will need to contact the superintendent of buildings and grounds James McGuiness at (845)-239-6801. All site visits must be coordinated with Jim.

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.

**DUE TO THE CURRENT PANDEMIC, EACH DELIVERY PERSON WILL BE REQUIRED TO FILL OUT A COVID STATEMENT FORM PRIOR TO ENTERING THE BUILDING. PLEASE ADJUST YOUR DELIVERY TIME TO ACCOMMODATE THIS REQUIREMENT.**

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 Bernier, Carr & Associates (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 A-311 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 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 12.4 and 12.5 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, when requested, 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**

## Highland Falls-Fort Montgomery CSD

James I. O'Neill Renovation Project

Project No. 2020-117

### REQUEST FOR INFORMATION

Submit to BERNIER, CARR & ASSOCIATES, ENGINEERS, ARCHITECTS AND LAND SURVEYORS, P.C.  
401 E. State Street; Suite 200; Ithaca, New York 14850

Attention (Exec Admin Assist): John Sokol [jsokol@thebcgroup.com](mailto:jsokol@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**  
**Highland Fall – Fort Montgomery Central School District**  
**James I. O'Neill Renovation Project**

**BID DESCRIPTION**

**CONTRACT NO. 1 - GENERAL CONSTRUCTION**

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

The project consists of but not limited to construction of a new ADA Ramp/Stair system at the West side of the building, the installation of a new gym floor and suspended volleyball system in the gymnasium. There is a installation of a new ADA lift which is replacing an old incline stair lift. There will also be work involving the abatement of some beams in the auditorium to allow for the installation of new light fixtures..

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 through the Prime Contractor. All work shall additionally be coordinated with all other activities, construction, or building staff throughout the progress of the work of this project.

The General 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 General Contractor shall further sub-divide his bid proposal as described in the following bid items, alternates, and/or unit prices. The General 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-01 – Gymnasium Vestibules VCT Replacement

Alternate No. GC-02 – NOT USED

Alternate No. GC-03 – Abatement Scope

Alternate No. GC-04 – Decorative Concrete Patio

Alternate No. GC 05 – Site Benches

**FORM OF PROPOSAL**  
**Highland Fall – Fort Montgomery Central School District**  
**James I. O'Neill Renovation Project**

**Unit Prices: As described in Specification Section 01 2200 – Unit Prices**  
Unit Price Item No. 1 – Rock Removal (Per Cubic Yard)

**FORM OF PROPOSAL**  
**Highland Fall – Fort Montgomery Central School District**  
**James I. O'Neill Renovation Project**

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 Engineers & Architects, for **CONTRACT NO. 1 – GENERAL CONSTRUCTION** to furnish all labor, materials, supplies, plant and equipment and other facilities to properly perform the work for the total:

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

Bid Item No. 1 – Field Directive Allowance  
\_\_\_\_\_ Twenty Thousand DOLLARS (\$ 20,000.00 )

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

**Alternates**

Alternate No. GC-01 – Gym Vestibules VCT Replacement  
\_\_\_\_\_ DOLLARS (\$ \_\_\_\_\_)  
ADD/DEDUCT

Alternate No. GC-02 – NOT USED

Alternate No. GC-03 – Abatement Scope  
\_\_\_\_\_ DOLLARS (\$ \_\_\_\_\_)  
ADD/DEDUCT

Alternate No. GC-04 – Decorative Concrete Patio  
\_\_\_\_\_ DOLLARS (\$ \_\_\_\_\_)  
ADD/DEDUCT

Alternate No. GC-05 – Site Benches  
\_\_\_\_\_ DOLLARS (\$ \_\_\_\_\_)  
ADD/DEDUCT

**Unit Prices**

Unit Price Item No. 1 – Rock Removal (Per Cubic Yard)  
\_\_\_\_\_ DOLLARS (\$ \_\_\_\_\_)

**FORM OF PROPOSAL**  
**Highland Fall – Fort Montgomery Central School District**  
**James I. O'Neill Renovation Project**

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 \_\_\_\_\_  
Address \_\_\_\_\_  
Telephone \_\_\_\_\_

Complete the information

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**  
**Highland Falls – Fort Montgomery CSD**  
**James I. O'Neill Renovation Project**

**BID DESCRIPTION**

**CONTRACT NO. 2 - ELECTRICAL CONSTRUCTION**

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

The project includes but is not limited to the following, the installation of exterior light poles at the East ramp work. The power requirements for the new volleyball suspended system, the interior ADA ramp and the installation of the new auditorium lighting.

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 through the Prime Contractor. All work shall additionally be coordinated with all other activities, construction, or building staff throughout the progress of the work of this project.

The Electrical 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 Electrical Contractor shall further sub-divide his bid proposal as described in the following bid items, alternates, and/or unit prices. The Electrical 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-01 – System Ground Restoration at Water Service

Alternate No. EC-02 – NOT USED

Alternate No. EC-03 – Storage Room 245 Light Installation

Alternate No. EC-04 – Panel X3 Over-Current Protection

Alternate No. EC 05 – Janitors closet 167 Light Installation

**FORM OF PROPOSAL  
Highland Falls – Fort Montgomery CSD  
James I. O'Neill Renovation Project**

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**FORM OF PROPOSAL**  
**Highland Falls – Fort Montgomery CSD**  
**James I. O'Neill Renovation Project**

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 Engineers & Architects, for **CONTRACT NO. 2 – ELECTRICAL CONSTRUCTION** to furnish all labor, materials, supplies, plant and equipment and other facilities to properly perform the work for the total:

BASE BID SUM of

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

Bid Item No. 1 – Field Directive Allowance

\_\_\_\_\_ **Five Thousand** DOLLARS (\$ **5,000.00** )

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

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

Alternate No. EC-01 – system Ground Restoration at Water Service

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

Alternate No. EC-02 – NOT USED

Alternate No. EC-03 – Storage Room 245 Light Installation

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

Alternate No. EC-04 – Panel X3 Over-Current Protection

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

Alternate No. EC-05 – Janitors Closet 167 Light Installation

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

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 \_\_\_\_\_  
Address \_\_\_\_\_  
Telephone \_\_\_\_\_

Complete the information

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 A101® – 2017

## ***Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum***

**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)

«Highland Falls Fort Montgomery Central School District»«»  
«21 Morgan Road  
Highland Falls, New York 10928»  
«Telephone Number: (845)446-9575»  
«»

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

« »« »  
« »  
« »  
« »

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

«James I. O'Neill Renovation Project»  
«21 Morgan Road Highland Falls, New York 10928»  
«  
SED Control No.  
44-09-01-04-0-008-017 James I. O'Neill High School  
BCA Project No. 2020-117»

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

«Bernier, Carr & Associates Engineers, Architects, and Land Surveyors, P.C.»«»  
«401 East State Street  
Suite 200  
Ithaca, New York 14850»  
«Telephone Number: (607) 319-4053»  
«»

The Owner and Contractor agree as follows.

**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.

The parties should complete A101®-2017, Exhibit A, Insurance and Bonds, contemporaneously with this Agreement. AIA Document A201®-2017, General Conditions of the Contract for Construction, is adopted in this document by reference. Do not use with other general conditions unless this document is modified.

**ELECTRONIC COPYING** of any portion of this AIA® Document to another electronic file is prohibited and constitutes a violation of copyright laws as set forth in the footer of this document.

## TABLE OF ARTICLES

1	THE CONTRACT DOCUMENTS
2	THE WORK OF THIS CONTRACT
3	DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION
4	CONTRACT SUM
5	PAYMENTS
6	DISPUTE RESOLUTION
7	TERMINATION OR SUSPENSION
8	MISCELLANEOUS PROVISIONS
9	ENUMERATION OF CONTRACT DOCUMENTS

## EXHIBIT A INSURANCE AND BONDS

### 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 a Modification, 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 SUBSTANTIAL COMPLETION

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

*(Check one of the following boxes.)*

☒ 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

§ 3.3.1 Subject to adjustments of the Contract Time as provided in the Contract Documents, the Contractor shall achieve Substantial Completion of the entire Work:

*(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: « »

§ 3.3.2 Subject to adjustments of the Contract Time as provided in the Contract Documents, if portions of the Work are to be completed prior to Substantial Completion of the entire Work, the Contractor shall achieve Substantial Completion of such portions by the following dates:

Portion of Work	Substantial Completion Date

§ 3.3.3 If the Contractor fails to achieve Substantial Completion as provided in this Section 3.3, 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 « » (\$ « » ), subject to additions and deductions as provided in the Contract Documents.

#### § 4.2 Alternates

§ 4.2.1 Alternates, if any, included in the Contract Sum:

Item	Price

§ 4.2.2 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

§ 4.3 Allowances, if any, included in the Contract Sum:  
(Identify each allowance.)

Item	Price

§ 4.4 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.)

« »

§ 4.6 Other:  
(Insert provisions for bonus 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 Architect by the Contractor and Certificates for Payment issued by the 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 Architect not later than the « 1st » day of a month, the Owner shall make payment of the amount certified to the Contractor not later than the « 30th » day of the « » month. If an Application for Payment is received by the Architect 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 Architect receives the Application for Payment.

*(Federal, state or local laws may require payment within a certain period of time.)*

§ 5.1.4 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 Architect may require. This schedule of values shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 5.1.5 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.

§ 5.1.6 In accordance with AIA Document A201™–2017, General Conditions of the Contract for Construction, and subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

§ 5.1.6.1 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.

§ 5.1.6.2 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 A201–2017;
- .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 A201–2017; 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 Substantial Completion of the Work, 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.)*

« 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.)

« None »

§ 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 Substantial Completion of the entire Work, including modifications for Substantial Completion of portions of the Work as provided in Section 3.3.2, insert provisions for such modifications.)

« None »

§ 5.1.7.3 Except as set forth in this Section 5.1.7.3, upon Substantial Completion of the Work, 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 at Substantial Completion shall not include retainage as follows:  
(Insert any other conditions for release of retainage upon Substantial Completion.)

« »

§ 5.1.8 If final completion of the Work is materially delayed through no fault of the Contractor, the Owner shall pay the Contractor any additional amounts in accordance with Article 9 of AIA Document A201–2017.

§ 5.1.9 Except with the Owner's prior approval, the Contractor shall not make advance payments to suppliers for materials or equipment which have not been delivered and stored at the site.

## § 5.2 Final Payment

§ 5.2.1 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 A201–2017, and to satisfy other requirements, if any, which extend beyond final payment; and
- .2 a final Certificate for Payment has been issued by the Architect.

§ 5.2.2 The Owner's final payment to the Contractor shall be made no later than 30 days after the issuance of the Architect's final Certificate for Payment, or as follows:

« »

## § 5.3 Interest

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, as required by NYS law.

(Insert rate of interest agreed upon, if any.)

« » % « »

## ARTICLE 6 DISPUTE RESOLUTION

### § 6.1 Initial Decision Maker

The Architect will serve as the Initial Decision Maker pursuant to Article 15 of AIA Document A201–2017, unless the parties appoint below another individual, not a party to this Agreement, to serve as the 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 A201–2017, the method of binding dispute resolution shall be as follows:

(Check the appropriate box.)

☐ Arbitration pursuant to Section 15.4 of AIA Document A201–2017

☒ 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 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A201–2017.

§ 7.1.1 If the Contract is terminated for the Owner's convenience in accordance with Article 14 of AIA Document A201–2017, 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.)

<< N/A >>

§ 7.2 The Work may be suspended by the Owner as provided in Article 14 of AIA Document A201–2017.

## ARTICLE 8 MISCELLANEOUS PROVISIONS

§ 8.1 Where reference is made in this Agreement to a provision of AIA Document A201–2017 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)

«Frank Sheboy»  
«21 Morgan Road  
Highland Falls, New York 10928»  
«Telephone Number: (845)446-9575 Ext. 1300»  
«»  
«»  
«Email Address: frank.sheboy@hffmcsd.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 the Contract Documents, see Supplementary Conditions of the Contract.

§ 8.5.2 The Contractor shall provide bonds as set below:

BOND Form AIA-312	AMOUNT
Performance Bond	100% of the Contract Amount
Payment Bond	100% of the Contract Amount

§ 8.6 Notice in electronic format, pursuant to Article 1 of AIA Document A201-2017, 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 Other provisions:

<< >>

### ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

§ 9.1 This Agreement is comprised of the following documents:

- 1 AIA Document A101™-2017, Standard Form of Agreement Between Owner and Contractor
- 2 AIA Document A201™-2017, General Conditions of the Contract for Construction
- 3 Drawings: **See Index of Drawings**
- 4 Specifications: **See Table of Contents**
- 5 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.

- 6 Other Exhibits:  
*(Check all boxes that apply and include appropriate information identifying the exhibit where required.)*

[ ☐ ] AIA Document E204™-2017, Sustainable Projects Exhibit, dated as indicated below:  
*(Insert the date of the E204-2017 incorporated into this Agreement.)*

<< >>

[ ☐ ] The Sustainability Plan:

Title	Date	Pages

[ **« X »** ] Supplementary and other Conditions of the Contract:

Title	Pages
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- 9 Other documents, if any, listed below:  
*(List here any additional documents that are intended to form part of the Contract Documents. AIA Document A201™-2017 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 CONTRACTOR'S NAME] Form of Proposal dated [INSERT DATE] »

This Agreement entered into as of the day and year first written above.

OWNER (Signature)

«Frank Sheboy»«, Superintendent of Schools»  
(Printed name and title)

CONTRACTOR (Signature)

« »« »  
(Printed name and title)



# AIA® Document A201® – 2017

## General Conditions of the Contract for Construction

### for the following PROJECT:

*(Name and location or address)*

James I. O'Neill Renovation Project  
21 Morgan Road Highland Falls, New York 10928

### THE OWNER:

*(Name, legal status and address)*

Highland Falls Fort Montgomery Central School District  
21 Morgan Road  
Highland Falls, New York 10928

### THE ARCHITECT:

*(Name, legal status and address)*

Bernier, Carr & Associates Engineers, Architects, and Land Surveyors, P.C.  
401 East State Street  
Suite 200  
Ithaca, New York 14850

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### ADDITIONS AND DELETIONS:

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

For guidance in modifying this document to include supplementary conditions, see AIA Document A503™, Guide for Supplementary Conditions.

## 15 CLAIMS AND DISPUTES



Init.

/

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**User Notes:**

(3B9ADA4B)

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## **ARTICLE 1 GENERAL PROVISIONS**

### **§ 1.1 Basic Definitions**

#### **§ 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, Addenda issued prior to execution of the Contract, 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.

#### **§ 1.1.2 The Contract**

The Contract Documents form the Contract for Construction. The Contract 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 a Subcontractor or a Sub-subcontractor, (3) between the Owner and the Architect or the Architect's consultants, or (4) between any persons or entities other than the Owner and the Contractor. The Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Architect's duties.

#### **§ 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 the Owner and by Separate Contractors.

#### **§ 1.1.5 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.

#### **§ 1.1.6 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.

#### **§ 1.1.7 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.

#### **§ 1.1.8 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.

### **§ 1.2 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 indicated 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.

### **§ 1.3 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.

### **§ 1.5 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 Architect does 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. 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 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.

**§ 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.

**§ 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 Information and Services Required of the Owner**

**§ 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.

**§ 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** If the employment of the Architect terminates, the Owner shall employ a successor to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Architect.

**§ 2.3.4** 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 accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

**§ 2.3.5** The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall 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.

**§ 2.3.6** 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.

#### **§ 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 prior approval of the Architect and the 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 Architect's 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.

### **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.

**§ 3.1.2** 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 Architect in the Architect's 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 2.3.4, 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 Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the 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.

**§ 3.2.3** The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Architect any nonconformity discovered by or made known to the Contractor as a request for information in such form as the Architect may require.

**§ 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.

### **§ 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 and 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. Unless the Architect objects to the Contractor's proposed alternative, the Contractor shall perform the Work using its alternative means, methods, techniques, sequences, or procedures.

**§ 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 Work already performed to determine that such portions are in proper condition to receive subsequent Work.

### **§ 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 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.

### **§ 3.5 Warranty**

**§ 3.5.1** The Contractor warrants to the Owner 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 Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

**§ 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**

The Contractor shall pay sales, consumer, use and similar taxes for the Work 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.

### **§ 3.7 Permits, Fees, Notices and Compliance with Laws**

**§ 3.7.1** Unless otherwise provided in the Contract Documents, the Contractor shall secure and pay for the building permit as well as for other permits, fees, licenses, and inspections by government agencies necessary for proper execution and completion of the Work that are customarily secured after execution of the Contract and legally required at the time bids are received or negotiations concluded.

**§ 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 and the Architect before conditions are disturbed and in no event later than 14 days after first observance of the conditions. The Architect will promptly investigate such conditions and, if the Architect 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 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 and Contractor, stating the reasons. If either party disputes the Architect's determination or recommendation, that 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 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 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.

**§ 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 of the name and qualifications of a proposed superintendent. Within 14 days of receipt of the information, the Architect may notify the Contractor, stating whether the Owner or the Architect (1) has reasonable objection to the proposed superintendent or (2) requires additional time for review. Failure of the Architect 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 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.

### **§ 3.10 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 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.

**§ 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 Architect's approval. The Architect'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 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 perform the Work in general accordance with the most recent schedules submitted to the Owner and Architect.

### **§ 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 Architect and Owner, and delivered to the Architect 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 is subject to the limitations of Section 4.2.7. Informational submittals upon which the Architect is 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 Architect without action.

**§ 3.12.5** The Contractor shall review for compliance with the Contract Documents, approve, and submit to the Architect, Shop Drawings, Product Data, Samples, and similar submittals required by the Contract Documents, in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of the Owner or of Separate Contractors.

**§ 3.12.6** By submitting 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.

**§ 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 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 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 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 and the Architect 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.

**§ 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 Architect at the time and in the form specified by the Architect.

### **§ 3.13 Use of Site**

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.

### **§ 3.14 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** The Contractor shall not damage or endanger a portion of the Work or fully or partially completed construction of the Owner or Separate Contractors by cutting, patching, or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter construction by the Owner or a Separate Contractor except with written consent of the Owner and of the Separate Contractor. Consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold, from the Owner or a Separate Contractor, its consent to cutting or otherwise altering the Work.

### **§ 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 may do so and the Owner shall be entitled to reimbursement from the Contractor.

### **§ 3.16 Access to Work**

The Contractor shall provide the Owner 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 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 or Architect. 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.

### **§ 3.18 Indemnification**

**§ 3.18.1** To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, Architect, Architect's 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, 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), but only to the extent caused by the negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they 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.

**§ 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.

## **ARTICLE 4 ARCHITECT**

### **§ 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** Duties, responsibilities, and limitations of authority of the Architect as set forth in the Contract Documents shall not be restricted, modified, or extended without written consent of the Owner, Contractor, and Architect. Consent shall not be unreasonably withheld.

### **§ 4.2 Administration of the Contract**

**§ 4.2.1** The Architect will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during construction until the date the Architect issues the final Certificate for Payment. The 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. The 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.

**§ 4.2.3** On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and promptly report to the Owner (1) known deviations from the

Contract Documents, (2) known deviations from the most recent construction schedule submitted by the Contractor, and (3) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of, and will not be responsible for acts or omissions of, the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

#### **§ 4.2.4 Communications**

The Owner and Contractor 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 Contractor 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 Separate Contractors shall be through the Owner. The Contract Documents may specify other communication protocols.

**§ 4.2.5** Based on the Architect's evaluations of the Contractor's Applications for Payment, the Architect will review and certify the amounts due the Contractor and will issue Certificates for Payment in such amounts.

**§ 4.2.6** The Architect has authority to reject Work that does not conform to the Contract Documents. Whenever the Architect considers it necessary or advisable, the Architect will have authority to require inspection or testing of the Work in accordance with Sections 13.4.2 and 13.4.3, whether or not the Work is fabricated, installed or completed. However, neither this authority of the Architect nor a decision made in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect to the Contractor, Subcontractors, suppliers, their agents or employees, or other persons or entities performing portions of the Work.

**§ 4.2.7** 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. 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 the obligations under Sections 3.3, 3.5, and 3.12. 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.

**§ 4.2.8** The Architect will prepare Change Orders and Construction Change Directives, and may order minor changes in the Work as provided in Section 7.4. The Architect will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

**§ 4.2.9** The Architect will conduct inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion pursuant to Section 9.8; receive and forward to the Owner, for the Owner's review and records, written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10; and issue a final Certificate for Payment pursuant to Section 9.10.

**§ 4.2.10** 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 Contractor of any change in the duties, responsibilities and limitations of authority of the Project representatives.

**§ 4.2.11** The Architect will interpret and decide matters concerning performance under, and requirements of, the Contract Documents on written request of either the Owner or Contractor. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness.

**§ 4.2.12** 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 rendered in good faith.

**§ 4.2.13** The Architect's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

**§ 4.2.14** The Architect will review and respond to requests for information about the Contract Documents. The Architect's response to such requests 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 at the site. 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 a Separate Contractor or the subcontractors of a Separate Contractor.

**§ 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. 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 Owner 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 Architect may notify the Contractor whether the Owner or the Architect (1) has reasonable objection to any such proposed person or entity or (2) requires additional time for review. Failure of the Architect 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 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 or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner 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 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 and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner 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 and to Award Separate Contracts**

**§ 6.1.1** The term "Separate Contractor(s)" shall mean other contractors retained by the Owner under separate agreements. 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 separate contracts are awarded for different portions of the Project or other construction or operations on the site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.

**§ 6.1.3** The Owner shall provide for coordination of the activities of the Owner's own forces and of each Separate Contractor with the Work of the Contractor, who shall cooperate with them. The Contractor shall participate with any Separate Contractors and the Owner in reviewing their construction schedules. The Contractor shall make any revisions to its construction schedule deemed necessary after a joint review and mutual agreement. The construction schedules shall then constitute the schedules to be used by the Contractor, Separate Contractors, and the Owner until subsequently revised.

**§ 6.1.4** 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 and Separate 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 or a Separate Contractor, the Contractor shall, prior to proceeding with that portion of the Work,

promptly notify the Architect of apparent discrepancies or defects in the construction or operations by the Owner or Separate Contractor that would render it unsuitable for proper execution and results of the Contractor's Work. Failure of the Contractor to notify 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 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 Contractor that are not apparent.

**§ 6.2.3** The Contractor shall reimburse the Owner for costs the Owner incurs that are payable to a Separate Contractor 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 a Separate Contractor's delays, improperly timed activities, damage to the Work 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 or Separate Contractor as provided in Section 10.2.5.

**§ 6.2.5** The Owner and each Separate Contractor 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, 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 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.

**§ 7.1.2** A Change Order shall be based upon agreement among the Owner, Contractor, and Architect. A Construction Change Directive requires agreement by the Owner 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.

**§ 7.1.3** 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.

### **§ 7.2 Change Orders**

**§ 7.2.1** A Change Order is a written instrument prepared by the Architect and signed by the Owner, Contractor, and Architect 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 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;
- .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 percentage fee; 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 Architect 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. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Architect 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 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 hand tools, 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.

**§ 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 Architect 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 recorded as 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 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.

**§ 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 Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Architect determines, in the Architect's professional judgment, to be reasonably justified. The Architect's 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.

**§ 7.3.10** When the Owner and Contractor agree with a determination made by the 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 Architect will prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

## **§ 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 Architect 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 Architect 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.

## **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 limits stated in the Contract Documents are of the essence of the Contract. By executing the Agreement, the Contractor confirms that the Contract Time is a reasonable period for performing the Work.

**§ 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.

**§ 8.2.3** The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time.

### **§ 8.3 Delays and Extensions of Time**

**§ 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 or Architect, of an employee of either, or of a Separate Contractor; (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 determines, justify delay, then the Contract Time shall be extended for such reasonable time as the Architect may determine.

**§ 8.3.2** Claims relating to time shall be made in accordance with applicable provisions of Article 15.

**§ 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.

## **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 Architect 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 Architect. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment. Any changes to the schedule of values shall be submitted to the Architect and supported by such data to substantiate its accuracy as the Architect may require, and

unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's subsequent Applications for Payment.

### **§ 9.3 Applications for Payment**

**§ 9.3.1** At least ten days before the date established for each progress payment, the Contractor shall submit to the Architect 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 or Architect require, such as copies of requisitions, and releases and waivers of liens from Subcontractors and suppliers, and shall reflect retainage if provided for in the Contract Documents.

**§ 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 Architect, but not yet included in Change Orders.

**§ 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.

**§ 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.

**§ 9.3.3** 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.

### **§ 9.4 Certificates for Payment**

**§ 9.4.1** The Architect will, within seven days after receipt of the Contractor's Application for Payment, either (1) issue to the Owner a Certificate for Payment in the full amount of the Application for Payment, with a copy to the Contractor; or (2) issue to the Owner a Certificate for Payment for such amount as the Architect determines is properly due, and notify the Contractor 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 Contractor and Owner of the Architect's reason for withholding certification in whole as provided in Section 9.5.1.

**§ 9.4.2** The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluation of the Work and the data in the Application for Payment, 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 entitled to payment in the amount certified. The foregoing representations 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 Architect. However, the issuance of a Certificate for Payment will not be a representation that the 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 Architect may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Section 9.4.2 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Section 9.4.1. If the Contractor and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The 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 previously issued, to such extent as may be necessary in the Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from 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;
- .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.

**§ 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 withholds certification for payment under Section 9.5.1.3, 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 Contractor shall reflect such payment on its next Application for Payment.

## **§ 9.6 Progress Payments**

**§ 9.6.1** After the Architect has issued a Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents, and shall so notify the 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 Architect 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 Architect and Owner 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 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.

### **§ 9.7 Failure of Payment**

If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven days after the date established in the Contract Documents, the amount certified by the Architect or awarded by binding dispute resolution, then the Contractor may, upon seven additional days' notice to the Owner 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 that 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 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 Contractor's list, the Architect 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 Contractor's 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 to determine Substantial Completion.

**§ 9.8.4** When the Work or designated portion thereof is substantially complete, the Architect will prepare 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.

**§ 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.



## **§ 9.9 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 shall 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.

**§ 9.9.2** Immediately prior to such partial occupancy or use, the Owner, 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.

**§ 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 receipt of the Contractor's notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection. When the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's 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 Architect's final 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.

**§ 9.10.2** Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (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. 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.

**§ 9.10.3** 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 Architect so confirms, the Owner shall, upon application by the Contractor and certification by the 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 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; or
- .4 audits performed by the Owner, if permitted by the Contract Documents, after final payment.

**§ 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.

### **§ 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; and
- .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.

**§ 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.

**§ 10.2.3** 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 and 10.2.1.3 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 and 10.2.1.3. 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 or Architect or anyone directly or indirectly employed by either of them, or by anyone for whose acts either 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 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**

If either party suffers injury or damage to person 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 within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

### **§ 10.3 Hazardous Materials and Substances**

**§ 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 and Architect of the condition.

**§ 10.3.2** Upon receipt of the Contractor's 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 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 and the Architect will promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. If either the Contractor or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor 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, Architect, Architect's 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**

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.



## 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 insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Owner, 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.

§ 11.1.2 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.

§ 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.

§ 11.1.4 **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 to the Owner 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 the Contractor 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 to the Contractor 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 Architect and Architect's consultants; and (3) 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 Architect, Architect's consultants, 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.

**§ 11.3.2** 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 and Architect 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 Architect and Contractor their just shares of insurance proceeds received by the Owner, and by appropriate agreements the 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.

## **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 Architect's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Architect, be uncovered for the Architect's 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 Architect has not specifically requested to examine prior to its being covered, the 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 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 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 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.

**§ 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 or Separate 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.

## **ARTICLE 13 MISCELLANEOUS PROVISIONS**

### **§ 13.1 Governing Law**

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.

## **§ 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.

**§ 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.

## **§ 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, 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 Architect timely notice of when and where tests and inspections are to be made so that the 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 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 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 Architect of when and where tests and inspections are to be made so that the 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 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 Architect.

**§ 13.4.5** If the Architect is to observe tests, inspections, or approvals required by the Contract Documents, the 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 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.

## 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 Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1, 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 seven days' notice to the Owner and Architect, 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 or entities 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 and the 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 repeatedly 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 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.

§ 14.2.2 When any of the reasons described in Section 14.2.1 exist, 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 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 be certified by the Initial Decision Maker, upon application, 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 Sum and 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

- .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 the 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; 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.

### **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. 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.

##### **§ 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.

##### **§ 15.1.3 Notice of Claims**

**§ 15.1.3.1** Claims by either the Owner or 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 and to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker. Claims by either party under this Section 15.1.3.1 shall be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 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 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.

**§ 15.1.4 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 and Owner waive Claims against each other 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 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 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.

**§ 15.2 Initial Decision**

**§ 15.2.1** Claims, 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.

**§ 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 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.

**§ 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 after 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 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. 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.

**§ 15.3.3** 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 Arbitration**

**§ 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.

**§ 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.



# **Additions and Deletions Report for**

## **AIA® Document A201® – 2017**

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.

Note: This Additions and Deletions Report is provided for information purposes only and is not incorporated into or constitute any part of the associated AIA document. This Additions and Deletions Report and its associated document were generated simultaneously by AIA software at 13:35:58 ET on 02/04/2021.

### **PAGE 1**

James I. O'Neill Renovation Project  
21 Morgan Road Highland Falls, New York 10928

...

Highland Falls Fort Montgomery Central School District  
21 Morgan Road  
Highland Falls, New York 10928

...

Bernier, Carr & Associates Engineers, Architects, and Land Surveyors, P.C.  
401 East State Street  
Suite 200  
Ithaca, New York 14850

## ***Certification of Document's Authenticity***

***AIA® Document D401™ – 2003***

I, John A. Sokol, 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 13:35:58 ET on 02/04/2021 under Order No. 6641323888 from AIA Contract Documents software and that in preparing the attached final document I made no changes to the original text of AIA® Document A201™ - 2017, General Conditions of the Contract for Construction, as published by the AIA in its software, other than those additions and deletions shown in the associated Additions and Deletions Report.

*(Signed)*

*(Title)*

*(Dated)*

**SUPPLEMENTARY CONDITIONS OF THE  
CONTRACT FOR CONSTRUCTION  
(AIA A201 – 2017 Edition)**

**The General Conditions** of the Contract for Construction, AIA Document A201-2017 Edition, Articles 1 through 15 inclusive, are hereby designated as one of the Contract Documents, and shall govern the Work under this Contract

**Supplementary Conditions**

The Supplementary Conditions are hereby designated part of the Contract Documents, and amend and supplement, and in some cases, void portions of the General Conditions of the Construction Contract (AIA Document A201-2017) as set forth below, and except as hereby amended and supplemented (or voided) and AIA General Conditions of the Construction Contract shall remain in full force and effect. The article numbers set forth in the Supplementary General Conditions correspond to (or are in addition to) the Article numbers set forth in the AIA General Conditions of the Construction Contract (AIA Document A201-2017). The specific modifications to the General Conditions of the Construction Contract are noted below.

**ARTICLE 1 GENERAL PROVISIONS**

**§ 1.1 BASIC DEFINITIONS**

**§ 1.1.1 THE CONTRACT DOCUMENTS: DELETE and REPLACE** with the following:

“The Contract Documents include the Notice to Bidders, Information to Bidders, Form of Proposals, General Conditions, Supplementary 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:** In the first line, before the word “represents”, **INSERT** the following: “(or the “Agreement”)”; and in the seventh line, after the word “Architect”, **INSERT** “, as a representative of the Owner,”.

**ADD** the following to the end of § 1.1.2:

“The Contractor shall assure all subcontractors shall assume the same obligations to the Contractors as the Contractor has to the Owner and the Architect under General Conditions AIA A201-2017. All relationships and responsibilities of the Contractor to the Owner or Architect as defined in General Conditions AIA A201- 2017 shall become those of the Subcontractor to the Contractor.”

**ADD** the following to § 1.1.2:

**“§ 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).”

**ADD** the following to Article 1.1:

**“§ 1.1.9** 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 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.
- .18 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.
- .19 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.
- .20 The term "labeled" refers to classification by an approved Standards Agency.
- .21 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."
- .22 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.
- .23 The term "General Conditions" shall mean the General Conditions of the Construction Contract (AIA Document AIA A201 – 2017 Edition).

## § 1.2 CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS

### § 1.2.1 In the last line – **CHANGE** the word "indicated" to read "intended".

**ADD** the following to § 1.2.1:

**"§ 1.2.1.1** 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. Special Conditions.
5. Instructions to Bidders.
6. Supplementary Conditions of the Contract for Construction.
7. General Conditions of the Contract for Construction.
8. Division 1 of the specifications.
9. Divisions 2 thru 49 of the specifications and drawings.
10. Other documents specifically enumerated in the Contract as part of the Contract Documents.

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 will determine which takes precedence.

**§ 1.2.1.2** 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 ensure proper and accurate fit of materials and items to be installed. Before ordering any materials or doing any Work, the Contractor shall verify and ensure 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 Architect for resolution before proceeding with the Work."

**ADD** the following to § 1.2:

"**§ 1.2.4** 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."

## **§ 1.4 INTERPRETATION**

**ADD** the following to § 1.4:

"**§ 1.4.1** In the event of conflicts or discrepancies among the Contract Documents, interpretations will be as outlined under § 1.2.1.1.

**§ 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 more detail drawings over less detail 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 and approval 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."

## **ARTICLE 2 OWNER**

### **§ 2.3 INFORMATION AND SERVICES REQUIRED OF THE OWNER**

**§ 2.3.4** **INSERT** the word "reasonable" before the word "accuracy" in the second line.

**§ 2.3.4** **ADD § 2.3.4.1:**

"**§ 2.3.4.1** 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.”

**§ 2.3.6 DELETE § 2.3.6 and REPLACE with the following:**

**“§ 2.3.6** 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 four (4) printed sets of Contract Drawings, Project Manuals and Bid Addenda 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.”

**ADD** the following to § 2.3:

**“§ 2.3.7** 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.”

**§ 2.5 OWNER’S RIGHT TO CARRY OUT THE WORK**

**ADD** the following paragraph 2.5.1:

**“§ 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.” In the event Owner is not obligated to pay the Architect such costs incurred by the Architect as Additional Services, Contractor shall pay the Architect’s additional costs directly to the Architect as a third-party beneficiary under this contract at Architect’s current billing rates”

**ADD** the following new § 2.6 to Article 2:

**“§ 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**

**ADD** the following to § 3.1.1:

**“§ 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 competently and diligently perform the Work in an orderly and safe fashion and in accordance with the anticipated milestone and/or completion date(s) as applicable.”

## **§ 3.2 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR**

**ADD** the following to § 3.2.2:

**“§ 3.2.2.1** The Contractor shall promptly notify the Architect, in writing, of any inconsistencies or errors to provide the Architect ample time for observation, investigation, detail drawings, and any other remedial action required by the Contract Documents.

**§ 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 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 or any other Work as defined in any other Contract for the Project. 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 shall and shall ensure that 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.”

## **§ 3.3 SUPERVISION AND CONSTRUCTION PROCEDURES**

**ADD** the following to § 3.3.1:

**“§ 3.3.1.1** Laying Out the Work:

- .1** Each Contractor shall and subcontractor shall carefully lay out his Work in accordance with the Contract Documents and shall coordinate his Work with existing and new Work and he shall verify all lines and levels indicated in the Contract Documents that affect his Work and the Work of other contracts for the Project.
- .2** Adjustments required to suit field conditions shall be made only after Architect's review. Each Contractor shall be responsible for the accuracy of layout and shall correct at his 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 his Contract. He shall coordinate his work and prevent all interference's between equipment, lines of piping, architectural features, and avoid any unsightly arrangements in the exposed areas.”

**ADD** the following to § 3.3:

**§ 3.3.4 Shutdowns:** Such Work involving connections to existing sewers, plumbing, heating and electric systems, shall be done at a time agreeable to the Owner and Architect and shall be determined and agreed to not less than five (5) days 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 designated representative of the Owner 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**

**ADD** the following to § 3.4:

**“§ 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 , Supplementary and other conditions) on “EQUIVALENCY”, of the Specifications) for each proposed substitution.
- .2 The Architect will be allowed a reasonable time within which 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 guarantee 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, shall be provided by the Contractor to Owner and Architect.
- .6 Reasons the substitution is advantageous and/or necessary, including the benefits to the Owner and Work in the event substitution is acceptable shall be provided by the Contractor to Owner and Architect.
- .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 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 in triplicate to the Architect in sufficient time to allow the Architect no less than ten working days for review.
- .10 Substitutions and alternates may be rejected without 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, unless the Owner has determined by appropriate action of its governing body that standardization is required. 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 and shall be paid directly to the Architect as a third-party beneficiary under this Contract.
- .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 for the Project."

### § 3.5 WARRANTY

**ADD** the following to § 3.5.1:

**§ 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 guarantee period, the Owner may correct any defect immediately and charge the cost to the Contractor. The Owner shall at once notify the Contractor, 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."

### § 3.6 TAXES

**MODIFY** § 3.6 as follows: **INSERT** the language "Except as otherwise specified" at the beginning of the paragraph.

**ADD** the following to § 3.6:

"§ 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 his Sub-Contractor. Also exempt from such taxes are purchases by the CONTRACTOR and his subcontractors of materials, equipment and supplies to be sold to the OWNER pursuant to his 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 his 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

**DELETE** § 3.7.1 and **REPLACE** with the following:

"§ 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."

**MODIFY** § 3.7.4 as follows:

- 1) in the first paragraph (line 5) after the word "disturbed, **INSERT** the following new words "or affected Work is performed"; and
- 2) in the first paragraph (line 6), **CHANGE** "21 days" to "15 days".

### § 3.8 ALLOWANCES

**DELETE** the following in § 3.8.2.2: "unloading and handling at the site, labor, installation costs".

**ADD** the following to § 3.8.2:

"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 SUPERINTENDENT

**ADD** the following to § 3.9:

"§ 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 Project's progress or quality, or results 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, and Architectural services. The Owner shall notify the Contractor in writing of its intent to back charge as a result of lack of supervision. In the event Owner is not obligated to pay Architect directly for services resulting from Contractor's actions under this Section, the Contractor shall pay Architect's cost for such Additional Services directly to Architect as third-party beneficiary under this Contract."

### § 3.12 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES

**ADD** the following to § 3.12.5:

**“§ 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 Architect or their Consultants.”

**ADD** the following to § 3.12.10.1:

**“§ 3.12.10.1.1** 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.”

### § 3.14 CUTTING AND PATCHING

**ADD** the following to § 3.14.2:

**“§ 3.14.2.1** In order to eliminate cutting and patching as much as possible, the Contractor shall coordinate the installation of sleeves and inserts with the other Contractors under the Project which may be affected, and shall give proper and detailed instructions to each of the other Contractors 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.”

**ADD** the following to § 3.14:

**“§ 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 safed as required to the satisfaction of the Owner and Architect.

**§ 3.14.4** Any costs caused by defective or ill-timed Work shall be borne by the Contractor. If Contractor is required to cut and patch his 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 his Work, Contractor shall charge the other 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

**ADD** the following to § 3.15:

**“§ 3.15.3** Each Prime Contractor is solely responsible for cleaning of the premises and surrounding area to the Owner's satisfaction. Contractor shall fully cooperate with all other Contractors for the Project in the coordinated effort to meet the Owner's time and quality requirements for clean-up.”

### § 3.18 INDEMNIFICATION

**DELETE** § 3.18.1 in its entirety and **REPLACE** with the following:

**“§ 3.18.1** To the fullest extent permitted by law, the Contractor hereby assumes the entire responsibility and liability for any and all damage (direct or consequential) and injury (including death), disease or sickness of any kind or nature whatsoever, to all persons, whether or not employees of the Contractor, and to all property and business and businesses, caused by, resulting from, arising out of, or occurring in connection with:

- a. the Work;
- b. the performance or intended performance of the Work;
- c. the performance or failure to perform by the Contractor; or
- d. any occurrence which happens in or about the area where the Work is being performed by the Contractor, either directly or through a Subcontractor, or while any of Contractor's property, equipment or personnel is in or about such area; or

- e. New York State Labor Law, Article 10, including without limitation sections 240, 241, 241-a and 241-b, thereof, as amended, regardless of whether or not such Claim, damage, loss and expense is caused in part by a party indemnification hereunder.

Except to the extent, if any, expressly prohibited by law, should any such damage or injury referred to in § 3.18.1.1 be sustained, suffered, or incurred by Owner or Architect, or should any Claim for such damage or injury to be made or asserted against any of them, whether or not such Claim is based upon Owner's or Architect's alleged active or passive negligence or participation in the wrong or upon any alleged breach of any statutory duty or obligation on the part of the Owner or Architect, Contractor shall indemnify and hold harmless Owner, Owner's Governing Body or Architect, Administration officers, agents, partners, and employees (hereinafter collectively referred to as "Indemnitees"), of, from and against any and all other loss, cost, expense, and liability, including without limitation, legal fees and disbursements, that Indemnitees may directly or indirectly sustain, suffer or incur as a result of such damages, injuries and Claims; and Contractor agrees to assume, on behalf of any and all Indemnitees the defense (with counsel satisfactory to the party indemnified) or any action at law or in equity, or other legal proceeding, which may be brought against any Indemnitee upon or by reason of such damage, injury or Claim and to pay on behalf of every Indemnitee, the amount of any judgment, decree, award, or order that may be entered against each said Indemnitee in any such action or proceeding. In the event that any such Claim, loss, cost, expense, liability, damage or injury is sustained, suffered, or incurred by, or is made, asserted or threatened against any Indemnitee, Owner shall, in addition to all other rights and remedies, have the right to withhold from any payments due and to become due to Contractor an amount sufficient in Owner's judgment to protect and indemnify the Indemnitee(s) from and against any and all such Claim, loss, cost, expense, liability, damage or injury, including legal fees and disbursements; or Owner, in its discretion, may require Contractor to furnish a Surety bond satisfactory to Owner guaranteeing such protection which bond shall be furnished by Contractor within 5 days after written demand has been made therefore. In the event more than one Contractor is connected with an event or occurrence (or series of events or occurrences) covered by this indemnification, then all such Contractors shall be jointly and severally responsible to the Indemnitee, and the ultimate responsibility among such indemnifying Contractors shall be settled or otherwise determined by separate proceedings and without loss, expense or damage to any Indemnitee."

**ADD** the following to § 3.18:

**"§ 3.18.3** In any and all Claims against the Owner 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, 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 Architect or Owner to fully protect the rights and interests of Owner, and Architect with respect to possible, threatened or pending proceedings or orders."

**ADD** the following to Article 3:

**"§ 3.19 CONTRACTOR'S RESPONSIBILITIES**

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 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 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 Architect.

**§ 3.19.5** To comply with all legal requirements; to appear at hearings, proceedings or in court with respect to such compliance or with respect to 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** Contractor shall ensure that each 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 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** 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 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.

**§ 3.19.12** 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 he has satisfied himself 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 himself with the available information concerning these conditions will not relieve him 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 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 his 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**

### **§ 4.1 GENERAL**

**§ 4.1.2** In line 2, at the end of this line following the word "Owner". **DELETE** the word "Contractor".

**ADD** the following paragraph to 4.1:

**§ 4.1.3** If the employment of the Architect is terminated, the Owner shall employ a successor Architect.

**§ 4.1.4** The Architect shall be deemed a third-party beneficiary of the Contract and the General Conditions 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**

**§ 4.2.5** In line 1, after the word "Architect's", **INSERT** the words "observations and".

## **ARTICLE 5 SUBCONTRACTORS**

### **§ 5.1 DEFINITIONS**

**§ 5.1.1** In the first sentence, in line 2, **DELETE** the words "at the site", **SUBSTITUTE** "on the Project".

**§ 5.1.2** In the first sentence, in line 2, **DELETE** the words "at the site", **SUBSTITUTE** "on the Project".

## **ARTICLE 6 CONSTRUCTION BY THE OWNER OR BY SEPARATE CONTRACTORS**

### **§ 6.2 MUTUAL RESPONSIBILITY**

**§ 6.2.3** **DELETE** the second sentence in its entirety.

## **ARTICLE 7 CHANGES IN THE WORK**

### **§ 7.1 GENERAL**

**ADD** the following to § 7.1.1:

**"§ 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 the method of determining any change in Contract Sum or Contract time.
2. Promptly execute the change.

**ADD** the following to § 7.1.2:

**"§ 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** Contractor shall submit to the Architect 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 Architect, 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 the Work by separate or other Contractors.”

**ADD** the following to § 7.1:

**“§ 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 Architect 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 § 7.1.7.1 and § 7.1.7.2-a 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%.

**§ 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%.

- a. To this amount, 5% may be added for the Prime Contractor’s combined 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 paragraphs:

**§ 7.1.8.1** If the Work is done directly by the Contractor, overhead and profit in the amount of 15% may be added. 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 Item 3 of § 11.5 or 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 Item 3 of § 11.5 or 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 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 by the application of unit prices specifically named in the Contract Documents to the quantities of the items involved.

**§ 7.1.9.2** In computing the value of a change order which involved 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 no additional overhead and profit shall be allowed on value of work determined by the application of unit prices specifically named in the Contract Documents to the quantities of the items involved.

**§ 7.1.9.3** The Contractor may retain overhead and profit on a change order which involved deductions only, except that no overhead and profit shall be considered on value of Work determined by the application of unit prices specifically named in the Contract Documents.

### **§ 7.3 CONSTRUCTION CHANGE DIRECTIVES**

**§ 7.3.3.3 DELETE** the words "percentage of fee".

**§ 7.3.7** In the third sentence, **DELETE** the words "recorded as", and **REPLACE** with new words "incorporated into".

**MODIFY** § 7.3.4 as follows:

- In the first sentence (lines 3, 4 and 5), **DELETE** the words "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" and **REPLACE** with the following new words: "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 clause .3, **CHANGE** the words "hand tools" to "manual and small power tools and manual and small power equipment".
- In clause .4, **DELETE** the words "premiums for all bonds and insurance".
- In clause .5, **DELETE** clause .5 and **REPLACE** with new clause .5 as follows:  
".5 Costs of consumable supplies."

**ADD** the following new **§ 7.5** to Article 7:

### **“§ 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.

**§ 7.1.5.4** Architect will determine the actual quantities and classifications of unit price work performed by Contractor. 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 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."

**ADD** the following new **§ 7.6** to Article 7:

## **"§ 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**

### **§ 8.2 PROGRESS AND COMPLETION**

**DELETE** § 8.2.1 and **REPLACE** with the following:

**"§ 8.2.1 TIME IS OF THE ESSENCE IN THE COMMENCEMENT, PROSECUTION AND CONSTRUCTION OF THE WORK.** Contractor shall be responsible for all direct and consequential damages to Owner 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, Architect and other Contractors on the Project, making every reasonable effort to reduce the contract time."

**ADD** the following to § 8.2.2:

**"§ 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."

**DELETE** § 8.2.3 in its entirety and **REPLACE** with the following:

**"§ 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 Architect and the Owner, in their discretion:

- .1** Project schedules and revisions thereof, given from time to time by Contractor;
- .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 Architect upon the Owner's request."

**ADD** the following to § 8.2:

**"§ 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 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 or Architect or for which Owner or Architect may become liable, Contractor shall hold Owner and Architect harmless from and indemnify Owner 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 Architect 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 Architect 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 Architect 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 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 Site 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**

**DELETE** § 8.3.1, § 8.3.2 and § 8.3.3 in their entirety and **REPLACE** with the following:

**"§ 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 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 Architect 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 subparagraph, 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 aforesaid 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 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 paragraph. 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 Architect 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 Architect.

**§ 8.3.3** Contractor shall not be allowed an extension of time unless Contractor has established to the satisfaction of the Owner and Architect that the delay claimed by Contractor is to a portion of the Work on the critical path of the work schedule."

**ADD** the following to § 8.3:

**"§ 8.3.4** Under no circumstances will Contractor look to or make a Claim against Owner or Architect for the consequences of any delay resulting from directions given or not given by Architect 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."

**ADD** the following new § 8.4 to Article 8:

**"§ 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 his work by the stipulated date and be deducted from the final monies due the Contractor. Such charges shall be determined at the rate of \$600.00 per day per man for each and every man and day that the Architect needs to furnish project management or an on-site project 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 \$600 per day charges for delay described in Paragraph 8.4.1.

The absence of liquidated damage amount and/or other criteria concerning same shall not preclude the Owner from exercising his 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 for damages (including but not limited to fees and charges of engineers, architects, attorneys and other professionals and court and arbitration costs) for delay by either party.

**§ 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**

### **§ 9.2 SCHEDULE OF VALUES**

**ADD** the following to § 9.2:

**"§ 9.2.1** The Contractor shall submit in duplicate to the Architect within 15 days after the Owner-Contractor Agreement a printed schedule on AIA form G703 – Application and Certificate for Payment Continuation Sheet.

**§ 9.2.2** Format: The Contractor shall 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** The Contractor shall 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**

**DELETE** § 9.3.1, § 9.3.1.1, and § 9.3.1.2 in their entirety and **REPLACE** with the following:

**"§ 9.3.1** Applications for payment shall be made monthly on the current AIA Form G702 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 Architect 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."

**ADD** the following to § 9.3.1:

**"§ 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 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 200% 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.

- .4 In the event the bonds identified in § 11.4 become invalid, the Owner shall increase retainage to 20% and pay 80% of the amount of each progress payment due the Contractor until Substantial Completion.

**§ 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 Architect 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 G702) 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."

**ADD** the following to § 9.3.2:

**"§ 9.3.2.1** Procedures required by Owner shall include, but are not necessarily limited to, submission by the Contractor to the Architect of bills of sale and bills of lading for such materials and equipment, provision of opportunity for the 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

- a. 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.
- b. 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.
- c. 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.
- d. Payment for stored materials shall be in the amount of 95% of the value of stored materials less 5% retainage."

**ADD** the following to § 9.3.3:

**"§ 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 wither by payment thereof or by filing the required bond therefor pursuant to the New York State Lien Law. 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.

**ADD** the following to § 9.3:

**"§ 9.3.4** The Contractor and all of his subcontractors shall submit to the Owner, within thirty (30) days after issuance of their first payroll and every thirty (30) days thereafter, a transcript of the original payroll record, as provided by the Labor Law, subscribed and affirmed as true under the penalties of perjury for the Prime Contractor and all his Subcontractors. Failure to do so shall be cause for the Owner to withhold payment until such records are received. It shall be the Contractor's responsibility to ensure that all of its Subcontractors comply with this requirement.

**§ 9.3.5** When the Architect requires substantiating information, Contractor shall 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."

## **§ 9.5 DECISIONS TO WITHHOLD CERTIFICATION**

**ADD** the following to § 9.5.1:

"8 Any other breach of this Agreement."

**§ 9.5.3** In line 3, after the word "delivered", **INSERT** the words "so long as permitted by State Law".

## **§ 9.6 PROGRESS PAYMENTS**

After the word "within", **DELETE** "the time provided in the Contract Documents" and **REPLACE** with "within 30 days after receipt".

**ADD** the following to § 9.6:

"**§ 9.6.8** 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 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.

**§ 9.6.8.1** 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."

## **§ 9.7 FAILURE OF PAYMENT**

**§ 9.7** In line 1, after the word "Architect" and in line 2, after the word "Owner", **REPLACE** the words "does not" with the words "fails persistently to"; in line 3, after the word "Architect", **DELETE** the words "or awarded by binding dispute resolution"; and in line 4, **REPLACE** the number "seven" with the number "thirty".

## **§ 9.8 SUBSTANTIAL COMPLETION**

**ADD** the following to § 9.8.3:

"**§ 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 the 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** After the word "Completion" at the end of the paragraph, **ADD** the words "or this Agreement".

## **§ 9.9 PARTIAL OCCUPANCY OR USE**

**§ 9.9.2** Place a period (.) after the word "used" in line 2 and **DELETE** the remainder of the paragraph. Also, **ADD** the following: "The Contractor will provide the Owner and Architect 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."

## **§ 9.10 FINAL COMPLETION AND FINAL PAYMENT**

**ADD** the following to § 9.10.1:

"**§ 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 his discretion.

**§ 9.10.1.2** If the Architect is 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 by the Owner for additional services shall be deducted from the final payment to the Contractor."

**ADD** the following to § 9.10.2:

**"§ 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."

**ADD** the following to § 9.10.4:

**“.4** 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."

## **ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY**

**ADD** the following to § 10.1:

**"§ 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 Date 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. He 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. He 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** By way of specification but not by way of limitation of the foregoing, at the end of each work day, 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 paragraph are not dependent upon any question of negligence on his part or on the part of his 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 paragraph 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."

**DELETE** § 10.2.8 in its entirety and **REPLACE** with the following:

**“§ 10.2.8 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.”

**ADD** the following to § 10.2:

**“§ 10.2.9 Restoration.** If during the construction, public or private property is damaged or destroyed during the course of his Work, the Prime Contractor responsible shall, at his 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 such property, 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 all of his 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 Architect and Engineer to conduct construction review of the Contractor’s or his Subcontractor’s performance is not intended to include review of the adequacy of the Contractor’s or his Subcontractor’s safety measures in, on or near the construction site or buildings. It shall be Contractor’s responsibility to ensure OSHA compliance by all of his Subcontractors.

**§ 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 or his welding Subcontractor shall provide a fire watch 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 advance 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. Contractor shall take 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 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.”

## **§ 10.4 EMERGENCIES**

**DELETE** § 10.4 in its entirety and **REPLACE** with the following:

### **“§ 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 Architect, shall take the action necessary to deal adequately with such emergency. Notice of any such action shall be given by Contractor to 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**

**MODIFY** § 11.1.1 as follows:

- In the second sentence (line 2) following the words “company or companies”, **DELETE** the words “lawfully authorized”, and **REPLACE** with the words “rated B+ or better by A.M. Best Company, one to which the Owner has no reasonable objection and licensed.”



- In the second sentence, **INSERT** the phrase “occurrence-based” before the word “insurance”.

**ADD** the following to § 11.1.1.1.:

**“§ 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 he 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 his 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 A201 -2017 General Conditions of the Contract for Construction 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.)

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 Excess 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 Excess 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 and Owner along with their respective officers, agents, and employees shall be named as additional insured's for ongoing operations and products/completed operations on all Contractors' commercial general liability policies which 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, his 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 DELETE § 11.1.2 and REPLACE with the following:**

**"§ 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 Bonds shall be written on AIA Document A312 -2010 Performance Bond and Payment Bond forms 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 guarantee period."

**ADD** the following to Article 11:

**"§ 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**

**§ 12.2 CORRECTION OF WORK**

**§ 12.2.2.3** **ADD** the following sentence: "*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."

**ADD** the following to § 12.2.2:

**"§ 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."

**§ 12.3 ACCEPTANCE OF NONCONFORMING WORK**

**ADD** the following to § 12.3:

**"§ 12.3.1** The Owner, with the advice 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 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**

**§ 13.1** Place a period (.) after the word "located" in line 1 and **DELETE** the remainder of the paragraph.

**§ 13.2 SUCCESSORS AND ASSIGNS**

**DELETE** § 13.2.2 in its entirety.

**§ 13.6 INTEREST**

**§ 13.6** After the word "at" in line 1, **DELETE** the remainder of the paragraph and **REPLACE** it with "a rate of 1% per annum."

## ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

### § 14.1 TERMINATION BY THE CONTRACTOR

**§ 14.1.3** After the words (on line 1) “upon seven days’ written notice to the Owner and the Architect”, **INSERT** the following new words: “and upon the failure of the Owner to cure the alleged grounds for termination within the 7 days following receipt of said notice.”

### § 14.2 TERMINATION BY THE OWNER FOR CAUSE

**ADD** the following to § 14.2.1:

- .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.”

## ARTICLE 15 CLAIMS AND DISPUTES

### § 15.1 CLAIMS

#### § 15.1.2 TIME LIMITS ON CLAIMS

**§ 15.1.2** In line 3, **DELETE** the words “the final dispute resolution method selected in”. Place a period (.) after the word “law” in line 3 and **DELETE** the remainder of that sentence. **DELETE** the words “Owner and” from line 4.

**§ 15.1.3** In lines 3 and 4 **DELETE** “21 days” and **REPLACE** with “15 days”

**ADD** the following to § 15.1.3:

**“§ 15.1.3.1** An additional Claim made after any initial Claim has been files with the Owner and Architect will not be considered unless submitted in a timely manner and in accordance with Article 15.”

**§ 15.1.3.2** 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.

**§ 15.1.3.3** 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.”

**ADD** the following to § 15.1:

**“§ 15.1.8 Limitation and Waiver of Money Damages**

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 Contactor 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 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(2); or on account of any delay, obstruction or hindrance for any other cause whatsoever by the Owner, 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 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**

**§ 15.2.2** At the end of this subparagraph, **ADD** the words “or (6) submit a schedule to the parties indicating when the Architect expects to take action”.

**§ 15.2.5** In lines 5 and 6, **DELETE** the words “to binding dispute resolution.” And **REPLACE** with the words “to litigation.”

## **§ 15.4 ARBITRATION**

**DELETE** § 15.4 and § 15.4.1 through § 15.4.4.3 in their entirety and **DELETE** all other references to arbitration throughout the Contract Documents. ***Arbitration shall not constitute a part of this Agreement.*** **CHANGE** all references to “arbitration” in any other provision of the General Conditions to an appropriate reference to “litigation”. **REPLACE** with the following:

### **“§ 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.”

**END OF SECTION**



# Statement of Special Inspections

Project: *James I. O'Neill Renovation Project*

Project No.: 2020-117

Location: *21 Morgan Road, Highland Falls, New York 10928*

Owner: *Highland Falls Fort Montgomery CSD*

Design Professional in Responsible Charge: **BCA Architects & Engineers, 327 Mullin St., Watertown, NY 13601**

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:

Mark B. Kimball, P.E.

(type or print name)

*Mark B. Kimball*

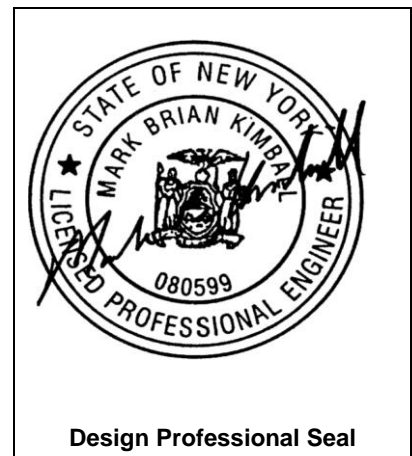
Signature

03/26/2021

Date

Architect

Date



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 checked="" type="checkbox"/>	<input type="checkbox"/>	Steel Construction	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Seismic Resistance
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Cold Formed Metal Deck	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Testing for Seismic Resistance
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Concrete Construction	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Sprayed Fire-Resistant Coatings
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Masonry Construction	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Mastic and Intumescent Fire-Resistant Coatings
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Wood Construction	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Exterior Insulation & Finish System (EIFS)
<input checked="" type="checkbox"/>	<input type="checkbox"/>	Soils and Foundations	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Fire Resistant Penetrations and Joints
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Fabricated Items	<input type="checkbox"/>	<input checked="" type="checkbox"/>	Smoke Control System
<input type="checkbox"/>	<input checked="" type="checkbox"/>	Wind Resistance	<input type="checkbox"/>	<input checked="" 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 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 *N/A*

Quality Assurance Plan Required (Y/N) *No*

Description of seismic force resisting system and designated seismic systems subject to special inspections (BCNYS §1704.3.2):

*N/A*

### Quality Assurance for Wind Requirements

Basic Wind Speed (3 second gust) *N/A*

Wind Exposure Category *N/A*

Quality Assurance Plan Required (Y/N) *No*

Description of wind force resisting system and designated wind resisting components subject to special inspections (BCNYS §1704.3.3):

*N/A*

### 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).

**BCA**  
ARCHITECTS  
ENGINEERS

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:  
*James I. O'Neill Renovation Project*

BCA Project #:	Client Project No:
2020-117	

Project Address: 21 Morgan Road, highland Falls, New York

### Building Information:

Name of Person Completing this Statement	Phone	Date
Mark B. Kimball, P.E.	(315) 782-8130	02-04-2021

## Comments

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</b> (AISC 360-16)						
1. Minimum inspections <u>prior</u> to welding.		X	AISC 360 Table N5.4-1	1705.2.1	<input checked="" 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 checked="" 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: a. For Risk Category II b. For Risk Category III and IV		10% 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 checked="" 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

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)
10. Inspect during placement of anchor rods and other embedment's supporting structural steel for compliance with the construction and approved shop drawings.		X	AISC 360 N5.7	1705.2.1	<input type="checkbox"/>	See inspection specific AISC details
11. Inspect Composite Construction prior to concrete placement: a. Placement and installation of steel deck b. Placement and installation of steel headed stud anchors c. Document acceptance or rejection of steel elements	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>						
1. Inspection or Execution Tasks <u>Prior</u> to Deck Placement		X	SDI QA/QC Table 1.1 A and B	1705.2.2	<input checked="" type="checkbox"/>	
2. Inspection or Execution Tasks <u>After</u> Deck Placement		X	SDI QA/QC Table 1.2 A, B and C	1705.2.2	<input checked="" type="checkbox"/>	
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	<input type="checkbox"/>	
4. 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"/>	
5. 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"/>	
6. Inspection or Execution Tasks <u>Prior</u> Mechanical Fastening		X	SDI QA/QC Table 1.6 A, B and C	1705.2.2	<input checked="" type="checkbox"/>	
7. Inspection or Execution Tasks <u>During</u> Mechanical Fastening		X	SDI QA/QC Table 1.7 A and B	1705.2.2	<input checked="" type="checkbox"/>	
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	<input checked="" type="checkbox"/>	
<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 SJI 200 composite	Table 1705.2.3		
a. End connections – welding or bolted.	-	X	SJI CJ,SJI K, SJI LH/DLH or SJI JG	Table 1705.2.3 2207.1	<input type="checkbox"/>	05 1000
b. Bridging – horizontal or diagonal ▪ Standard bridging ▪ Bridging differing from the SJI specs	-	X	SJI CJ,SJI K, SJI LH/DLH or SJI JG	Table 1705.2.3 2207.1	<input type="checkbox"/>	05 1000
<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	<input type="checkbox"/>	05 4400
2. 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"/>	05 4400
<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	<input checked="" 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)
2a. 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"/>	03 2000
2b. Reinforcing bar welding: Inspect single-pass fillet welds, maximum $\frac{5}{16}$ "		X	AWS D1.4; ACI 318: 26.6.4	Table 1705.3, 1705.3.1	<input type="checkbox"/>	03 2000
2c. Reinforcing bar welding: Inspect all other welds	X		AWS D1.4; ACI 318: 26.6.4	Table 1705.3, 1705.3.1	<input type="checkbox"/>	03 2000
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 See NYS IBC 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 See NYS IBC Footnote b	<input type="checkbox"/>	
5. Verify use of required design mix.	-	X	ACI 318: Ch. 19, 26.4.3, 26.4.4	Table 1705.3, 1904.1, 1904.2, 1908.2, 1908.3	<input checked="" type="checkbox"/>	03 3000
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, ASTM C31; ACI 318: 26.5, 26.12	Table 1705.3, 1908.10	<input checked="" type="checkbox"/>	
7. Inspect concrete and shotcrete placement for proper application techniques.	X	-	ACI 318: 26.5	Table 1705.3, 1908.6, 1908.7, 1908.8	<input checked="" type="checkbox"/>	
8. Verify maintenance of specified curing temperature & techniques	-	X	ACI 318: 26.5.3-26.5.5	Table 1705.3, 1908.9	<input checked="" type="checkbox"/>	
9a. Inspect prestressed concrete for: Application of prestressing forces	X	-	ACI 318: 26.10	Table 1705.3	<input type="checkbox"/>	
9b. Inspect prestressed concrete for: 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 checked="" type="checkbox"/>	03 1000 03 1119
<b>F. MASONRY CONSTRUCTION (TMS 402-13) (TMS 602-13)</b>						
<b>Level A:</b> <input type="checkbox"/> (basic) (non-essential) Risk Category I, II or III designed using Prescriptive or Empirical design methods.						

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>Level B:</b> <input checked="" type="checkbox"/> (intermediate) (non-essential / essential) Risk Category I, II or III designed using Engineered design methods, or Risk Category IV using Prescriptive design method. <b>Level C:</b> <input type="checkbox"/> (rigorous) (essential) Risk Category IV designed using Engineered design methods.						
<b>Level A Quality Assurance of Masonry</b> (TMS 402-13/ACI 530-13/ASCE 5-13 Table 3.1.1)						
A1. 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</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	<input checked="" type="checkbox"/>	
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	<input checked="" type="checkbox"/>	
B1. Verify compliance with approved submittals		X	TMS 602 Art. 1.5	1705.4	<input checked="" type="checkbox"/>	
<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	<input checked="" type="checkbox"/>	
b. Construction of mortar joints		X	TMS 602 Art. 3.3 B	1705.4	<input checked="" type="checkbox"/>	
c. Grade and size of prestressing tendons and anchorages		X	TMS 602 Art 2.4 B, 2.4 H	1705.4	<input type="checkbox"/>	
d. Location of reinforcement, connectors, prestressing tendons and anchors		X	TMS 602 Art. 3.4, 3.6 A	1705.4	<input checked="" type="checkbox"/>	
e. Prestressing technique		X	TMS 602 Art. 3.6 B	1705.4	<input type="checkbox"/>	
f. 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>						
a. Grout space		X	TMS 602 Art. 3.2 D, 3.2 F	1705.4	<input checked="" type="checkbox"/>	
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 checked="" type="checkbox"/>	
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	<input checked="" type="checkbox"/>	
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	<input checked="" type="checkbox"/>	
e. Construction of mortar joints		X	TMS 602 Art. 3.3 B	1705.4	<input checked="" type="checkbox"/>	
<b>B4. During Construction verify:</b>						
a. Size and location of structural elements		X	TMS 602 Art. 3.3 F	1705.4	<input checked="" type="checkbox"/>	
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 checked="" type="checkbox"/>	
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	<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)
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	<input checked="" type="checkbox"/>	
e. Application and measurement of prestressing force	X		TMS 602 Art. 3.6 B	1705.4	<input type="checkbox"/>	
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 checked="" 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"/>	

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. 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"/>	
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		X	Applicable truss submittal package	1705.5.2	<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)
installation restraint / bracing and permanent individual truss member restraint / bracing						
<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
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 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 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 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	X	-	Geotech Report,	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)
complete and accurate records for each element.			Contract Documents			
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"/>	
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: a. The fabricator maintains approved detailed fabrication and quality control procedures that provide conformance to the approved construction documents & IBC 2018				1704.2.5 1704.2.5.1 1705.10	<input type="checkbox"/>	Structural Steel Steel Joists, Girders Precast Concrete Prestressed Concrete 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 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 1705.13.1.1	<input type="checkbox"/>	05 1200 05 1213
2. Structural Steel Elements			AISC 341	1705.12.1.2 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 06 1800, 06 1733

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)
4. Cold Formed Steel Lightweight Construction welding and fastening		X		1705.12.3	<input type="checkbox"/>	05 4000 05 4400
5. Designated Seismic Systems			ASCE 7: 13.2.2	1705.12.4	<input type="checkbox"/>	
6. Architectural Components: (seismic)						
6a. 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"/>	
6b. Exterior cladding or int. or ext. veneer weighing 5 psf or less		X		1705.12.5	<input type="checkbox"/>	
6c. Interior nonbearing walls weighing 15 psf or less		X		1705.12.5	<input type="checkbox"/>	
6d. Access floors		X		1705.12.5.1	<input type="checkbox"/>	09 6900
7. Plumbing, Mechanical and Electrical Components: (seismic)						
7a. Electric equipment anchorage for emergency and standby power systems		X		1705.12.6 (1)	<input type="checkbox"/>	
7b. Other electric equipment anchorage		X		1705.12.6 (2)	<input type="checkbox"/>	
7c. Installation and anchorage of piping systems/mechanical units designed to carry hazardous materials		X		1705.12.6 (3)	<input type="checkbox"/>	
7d. Installation and anchorage of ductwork designed to carry hazardous material		X		1705.12.6 (4)	<input type="checkbox"/>	23 3100
7e. Installation and anchorage of vibration isolation systems		X		1705.12.6 (5)	<input type="checkbox"/>	
7f. 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</b> (ASCE 341-16 and ASCE 7-16)						
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</b> (ASTM E605 - 1993(2015) and E736 - 2000(2015))						
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</b> (AWCI 12-B 2014)						

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. 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)</b> (ASTM E2570 -2007 (2014))						
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>						
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 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 1705.17.2 715.3 715.4	<input 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 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:

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: *James I'. O'Neill Renovation Project*

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: *James I. O'Neill Renovation Project*  
Location: *21 Morgan Road Highland Falls, New York*  
Owner: *Highland Falls-Fort Montgomery CSD*  
Owner's Address: *21 Morgan Road*  
*Highland Falls, New York 10928*  
Architect of Record: *BCA Architects & Engineers*  
Structural Engineer of Record: *BCA Architects & Engineers*

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

---

## Agent's Final Report

Project: *James I. O'Neill Renovation Project*

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***







**BCA Architects & Engineers**  
401 East State Street  
Suite 200  
Ithaca, New York 14850  
Phone (607) 319-4053  
submittals@thebcgroup.com

## SHOP DRAWING SUBMITTAL FORM

**Project Name:** Highland Falls-Fort Montgomery CSD  
James I. O'Neill Renovation Project  
**BCA Project Number:** 2020-117  
**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:** \_\_\_\_\_

**Item as Specified:** **Yes:** \_\_\_\_\_ **No:** \_\_\_\_\_ **If No, provide information per Specification & Substitution Forms**

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 ☐ Exception as Noted ☐ Resubmit  
☐ Reviewed ☐ Correspondence Attached \_\_\_\_\_ ☐ 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 ☐ Electrical Coordination Not required.  
☐ Plumb'g/Mechanical Coordination ☐ 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:** \_\_\_\_\_





Andrew M. Cuomo, Governor

Roberta Reardon, Commissioner

HFFM CSD

John Sokol, Principal  
401 East State Street  
Suite 200  
Ithaca NY 14850

Schedule Year 2020 through 2021  
Date Requested 02/04/2021  
PRC# 2021001148

Location O'Neill Jr./Sr. High School  
Project ID#  
Project Type Renovations at James I. O'Neill High School SED Control No. 44-09-01-04-0-008-017

### 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 2020 through June 2021. 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





Andrew M. Cuomo, Governor

Roberta Reardon, Commissioner

HFFM CSD

John Sokol, Principal  
401 East State Street  
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Schedule Year 2020 through 2021  
Date Requested 02/04/2021  
PRC# 2021001148

Location O'Neill Jr./Sr. High School  
Project ID#  
Project Type Renovations at James I. O'Neill High School SED Control No. 44-09-01-04-0-008-017

### 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: _____ _____		
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



## **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 along the established routes. Work at the project site which will impact the Owner's operations must be coordinated in advance through the Architect. 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 and 8.4 of the General Conditions of the Contract for Construction for information concerning liquidated damages for stretch out and delay.

#### **PART 2**

##### **2.01 SCHEDULE**

- A. Mobilization: June 29, 2021
- B. Substantial Completion: August 27, 2021
- C. Final Completion: September 27, 2021

**END OF SECTION**

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**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 Architect/Engineer. 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. All Prime Contractors shall be responsible for their 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 Owners 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 26 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 Owner's Representative 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 the Owners Representative) 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 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 Owners Representative, who shall dictate all traffic patterns.
- C. The Owners Representative 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 reconstruct 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 each 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 Owners Representative.

#### **1.17 TEMPORARY BARRIERS AND BARRICADES**

- A. Each Prime Contractor shall be responsible for providing temporary barriers and barricades as required and directed by the Owners Representative 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 Owners Representative.

#### **1.18 CONTRACTORS STAGING**

- A. Areas for the Contractor's vehicle parking, storage trailers, staging, and offices shall be coordinated by the Owners Representative.

#### **PART 2 PRODUCTS - NOT USED**

#### **PART 3 EXECUTION - NOT USED**

**END OF SECTION**

**SECTION 01 2000  
PRICE AND PAYMENT PROCEDURES**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Procedures for preparation and submittal of applications for progress payments.
- B. Change procedures.

**1.02 SCHEDULE OF VALUES**

- A. Electronic media printout including equivalent information will be considered in lieu of standard form specified; submit draft to Architect for approval.
- B. Forms filled out by hand will not be accepted.

**1.03 APPLICATIONS FOR PROGRESS PAYMENTS**

- A. Payment Period: Submit at intervals stipulated in the Agreement.
- B. Electronic media printout including equivalent information will be considered in lieu of standard form specified; submit sample to Architect for approval.
- C. Forms filled out by hand will not be accepted.
- D. Execute certification by signature of authorized officer.
- E. Submit one electronic and three hard-copies of each Application for Payment.

**END OF SECTION**

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## **SECTION 01 2100 ALLOWANCES**

### **PART 1 GENERAL**

#### **1.01 SECTION INCLUDES**

- A. Cash allowances.
- B. Labor and Material Allowances.
- C. 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 CASH ALLOWANCES**

- A. Costs Included in Cash Allowances per General Conditions 3.8.
- B. 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.
  - 3. Prepare allowance authorization.
- C. Contractor Responsibilities:
  - 1. Assist Architect/Engineer in selection of products, suppliers, and installers.
  - 2. Obtain proposals from suppliers and installers and offer recommendations.
  - 3. Arrange for and process shop drawings, product data, and samples. Arrange for delivery.
  - 4. Promptly inspect products upon delivery for completeness, damage, and defects.
- D. The Owner reserves the right to reduce or eliminate all Allowances at any time during this Contract by Change Order.

#### **1.04 ALLOWANCES SCHEDULE**

- A. The following is an Allowance Schedule by Contract and it shall be included in the Contractor's Total Base Bid.
- B. Contract No. 1 - General Construction (Bid Item No. 1): The General Contractor shall include in his Base Bid a cash allowance in the amount \$20,000 for Work Directive Changes as authorized by the Resident Project Representative in accordance with pertinent provisions of the General Conditions of the Construction Contract.
- C. Contract No. 1 - General Construction (Bid Item No. 2): The General Contractor shall include in his Base Bid a cash allowance for 400 cubic yards of bulk rock removal. Refer to Specification Section 31 2316.26 - Rock Removal, Part 1 General, Paragraph 1.03 Price and Payment Procedures.
- D. Contract No. 2 - Electrical Construction (Bid Item No. 1): The Electrical Contractor shall include in his Base Bid a cash allowance in the amount \$5,000 for Work Directive Changes as authorized by the Construction Manager and/or Resident Project Representative in accordance with pertinent provisions of the General Conditions of the Construction Contract.
- E. Combined Bids shall include all designated allowances pertinent to individual Contracts.
- F. It is expressly understood that, at the completion of the project, all remaining unused portions of the allowance shall be credited to the Owner. A deductive Change Order shall be prepared by the Architect/Engineer and executed by the Contractor and the Owner.

### **PART 2 PRODUCTS - NOT USED**

### **PART 3 EXECUTION - NOT USED**

**END OF SECTION**

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## **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 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.

#### **1.03 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.

#### **1.04 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. Assist by providing necessary equipment, workers, and survey personnel as required.
- C. Contractor's Engineer Responsibilities: Sign surveyor's field notes or keep duplicate field notes, calculate and certify quantities for payment purposes.

#### **1.05 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.
- B. Payment will not be made for any of the following:
  - 1. Products wasted or disposed of in a manner that is not acceptable.
  - 2. Products determined as unacceptable before or after placement.
  - 3. Products not completely unloaded from the transporting vehicle.
  - 4. Products placed beyond the lines and levels of the required Work.
  - 5. Products remaining on hand after completion of the Work.
  - 6. Loading, hauling, and disposing of rejected Products.

#### **1.06 DEFECT ASSESSMENT**

- A. Replace Work, or portions of the Work, not conforming to specified requirements.

#### **1.07 SCHEDULE OF UNIT PRICES**

- A. Unit Price Item No. 1: Rock Removal - per cubic yard; Section 31 2316.26 - Rock removal, Part 1 General, Paragraph 1.03..

### **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-01 - Gym VCT Replacement:
    - a. Provide labor and materials to remove and replace the existing VCT and exterior door thresholds within the Gym Entry A 254A and Gym Entry B 254 B. Refer to the Room finish schedule for recommended floor finish material.
  - 2. Alternate No. GC-02 - N.A.:
  - 3. Alternate No. G-03 - Abatement Scope:
    - a. Provide work shown within the H.S. Auditorium and the description within the specifications for abatement removal.
  - 4. Alternate No. G-04 - Decorative concrete Patio:
    - a. Provide laobr and material to installa decorative concrete in lieu of stnadard concrete athe patio area as depicted within the contract documents..
  - 5. Alternate No. GC-05 - Site Benches
    - a. Provide labor and material costs for circular benches to be provided and installed at the patio area as depicted within the contract documents.
- B. Contract No. 2 - Electrical Construction
  - 1. Alternate No. EC-01 - System Ground Restoration at Water Service
    - a. Provide labor and materials to install new bleacher system within the gymnasium as depicted within the contract documents .
  - 2. Alternate No. EC-02 - N.A.
  - 3. Alternate No. EC-03 - Storage Room 245 Light Installation
    - a. Provide lighting and lighting circuitry as depicted within the contract documents.
  - 4. Alternate No. EC-04 - Panel X3 Over-Current Protection
    - a. Provide labor and material costs to insatll current protection as depicted within the contract documents.
  - 5. Alternate No. EC-05 - Janitors Closet 167 Light Installation
    - a. Provide labor and material to install lighting as depicted within the contract documents.

### **PART 2 PRODUCTS - NOT USED**

### **PART 3 EXECUTION - NOT USED**

**END OF SECTION**

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**SECTION 01 3000  
ADMINISTRATIVE REQUIREMENTS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. General administrative requirements.
- B. Preconstruction meeting.
- C. Site mobilization meeting.
- D. Progress meetings.
- E. Coordination drawings.
- F. Requests for Interpretation (RFI) procedures.

**1.02 RELATED REQUIREMENTS**

- A. Section 01 6000 - Product Requirements: General product requirements.
- B. Section 01 7000 - Execution Requirements: Additional coordination requirements.
- C. Section 01 7800 - Closeout Submittals: Project record documents.
- D. Section 01 9113 - General Commissioning Requirements: Additional procedures for submittals relating to commissioning.
  - 1. Where submittals are indicated for review by both Architect and the Commissioning Authority, submit one extra and route to Architect first, for forwarding to the Commissioning Authority.
  - 2. Where submittals are not indicated to be reviewed by Architect, submit directly to the Commissioning Authority; otherwise, the procedures specified in this section apply to commissioning submittals.

**1.03 REFERENCE STANDARDS**

- A. AIA G716 - Request for Information 2004.

**1.04 GENERAL ADMINISTRATIVE REQUIREMENTS**

- A. Conform to requirements of Section 01 7000 - EXECUTION REQUIREMENTS for coordination of execution of administrative tasks with timing of construction activities.

**1.05 PROJECT COORDINATION**

- A. Project Coordinator: Construction Manager.
- B. Cooperate with the Construction Manager and Owner Representative in allocation of mobilization areas of site; for field offices and sheds, for site and building access, traffic, and parking facilities.
- C. During construction, coordinate use of site and facilities through the Resident Project Representative.
- D. Comply with Construction Manager and Owner Representative procedures for intra-project communications; submittals, reports and records, schedules, coordination drawings, and recommendations; and resolution of ambiguities and conflicts.
- E. Comply with instructions of the Resident Project Representative for use of temporary utilities and construction facilities.
- F. Coordinate field engineering and layout work under instructions of the Resident Project Representative.
- G. Make the following types of submittals to Architect/Engineer through the Construction Manager:
  - 1. Requests for interpretation.
  - 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. Schedule meeting after Notice of Award.
- B. Construction Manager will schedule a meeting after Notice of Award.
- C. Attendance Required:
  1. Owner.
  2. Architect/Engineer.
  3. No of Contractors Prime Contractor.
  4. Construction Manager.
- D. 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. Submission of initial Submittal schedule.
  6. Designation of personnel representing the parties to Contract, the Construction Manager, Owner and <1|A/E|>/Engineer/Resident Project Representative.
  7. Use of premises by Owner and Contractor.
  8. Owner's requirements and occupancy prior to completion.
  9. Construction facilities and controls provided by Owner.
  10. Temporary utilities provided by Owner.
  11. Survey and building layout.
  12. Security and housekeeping procedures.
  13. Schedules.
  14. Application for payment procedures.
  15. Procedures for testing.
  16. Procedures for maintaining record documents.
  17. Requirements for start-up of equipment.
  18. Inspection and acceptance of equipment put into service during construction period.
  19. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders, and Contract closeout procedures.
  20. Scheduling.
  21. Scheduling activities of Testing and Laboratory Services.
- E. The Resident Project Representative shall record minutes and distribute copies within 7 calendar days after meeting to participants, with (one (1) copy to Architect/Engineer, Owner, participants, and those affected by decisions made.

### **3.02 SITE MOBILIZATION MEETING**

- A. Schedule meeting at the Project site prior to Contractor occupancy.
- B. Construction Manager will schedule meeting at the Project site prior to Contractor occupancy.
- C. Attendance Required:
  1. Contractor.
  2. Owner.
  3. Architect.
  4. Any Special consultants.
  5. Contractor's superintendent.
  6. Major subcontractors.
  7. Construction Manager.
- D. Agenda:

1. Use of premises by Owner and Contractor.
  2. Owner's requirements and occupancy prior to completion.
  3. Construction facilities and controls provided by Owner.
  4. Temporary utilities provided by Owner.
  5. Survey and building layout.
  6. Security and housekeeping procedures.
  7. Schedules.
  8. Application for payment procedures.
  9. Procedures for testing.
  10. Procedures for maintaining record documents.
  11. Requirements for start-up of equipment.
  12. Inspection and acceptance of equipment put into service during construction period.
- E. 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 PROGRESS MEETINGS**

- A. The Construction Manager shall schedule and administer meetings throughout progress of the Work at maximum bi-monthly intervals.
- B. Architect/Engineer/Resident Project Representative will make arrangements for meetings, prepare agenda with copies for participants, preside at meetings.
- C. Construction Manager will make arrangements for meetings, prepare agenda with copies for participants, preside at meetings.
- D. Attendance is Mandatory: No of Contractors Prime Contractor, No of Contractors 2 Contractor's Superintendent, major Subcontractors and suppliers, Owner, Architect, as appropriate to agenda topics for each meeting.
- E. 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.
- F. The Construction Manager shall record minutes and distribute copies within seven calendar days after meeting to participants, with one (1) copy to Architect/Engineer, Owner, participants, and those affected by decisions made.

### **3.04 CONSTRUCTION PROGRESS SCHEDULE - SEE SECTION 01 3216**

- A. Within 10 calendar days after date of the Agreement, submit preliminary schedule defining planned operations for the first 60 calendar days of Work, with a general outline for remainder of Work.
- B. If preliminary schedule requires revision after review, submit revised schedule within 10 calendar days.
- C. Within 20 calendar days after review of preliminary schedule, submit draft of proposed complete schedule for review.
  1. Include written certification that major contractors have reviewed and accepted proposed schedule.
- D. Within 10 calendar days after joint review, submit complete schedule.
- E. Submit updated schedule with each Application for Payment.

### 3.05 COORDINATION DRAWINGS

- A. Provide information required by Resident Project Representative for preparation of coordination drawings.
- B. Review drawings prior to submission to Architect/Engineer.

### 3.06 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 the 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 the 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.
    - a. Use AIA G716 - Request for Information .
- 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 the Contract Documents information requiring interpretation.
  - 2. Unacceptable Uses for RFIs: Do not use RFIs to request the following::
    - a. Approval of substitutions (see Section - 01 6000 - Product Requirements)
    - b. Changes that entail change in Contract Time and Contract Sum (comply with provisions of the Conditions of the Contract).
  - 3. Improper RFIs: Requests not prepared in conformance to 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, the Contract Documents, with no additional input required to clarify the question. They will be returned without a response, with an explanatory notation.
- E. Content: Include identifiers necessary for tracking the status of each RFI, and information necessary to provide an actionable response.
  - 1. Official Project name and number, and any additional required identifiers established in Contract Documents.
  - 2. Owner's, Architect's, and Contractor's names.
  - 3. Discrete and consecutive RFI number, and descriptive subject/title.
  - 4. Issue date, and requested reply date.
  - 5. Reference to particular Contract Document(s) requiring additional information/interpretation. Identify pertinent drawing and detail number and/or specification section number, title, and paragraph(s).
  - 6. Annotations: Field dimensions and/or description of conditions which have engendered the request.
  - 7. Contractor's suggested resolution: A written and/or a graphic solution, to scale, is required in cases where clarification of coordination issues is involved, for example; routing, clearances, and/or specific locations of work shown diagrammatically in Contract Documents. If applicable, state the likely impact of the suggested resolution



on Contract Time or the Contract Sum.

- F. Attachments: Include sketches, coordination drawings, descriptions, photos, submittals, and other information necessary to substantiate the reason for the request.
- G. 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.
  - 1. Response period may be shortened or lengthened for specific items, subject to mutual agreement, and recorded in a timely manner in progress meeting minutes.
- H. Responses: Content of answered RFIs will not constitute in any manner a directive or authorization to perform extra work or delay the project. If in Contractor's belief it is likely to lead to a change to Contract Sum or Contract Time, promptly issue a notice to this effect, and follow up with an appropriate Change Order request to Owner.
  - 1. Response may include a request for additional information, in which case the original RFI will be deemed as having been answered, and an amended one is to be issued forthwith. Identify the amended RFI with an R suffix to the original number.
  - 2. Do not extend applicability of a response to specific item to encompass other similar conditions, unless specifically so noted in the response.

**END OF SECTION**

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**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 Architect or Construction Manager 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 Resident Project Representative and one (1) print to the Architect and Construction Manager.
- 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 Architect/Engineer.
  - 2. Reliance upon the approved schedule:
    - a. The construction schedule as approved by the Resident Project Representative 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 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 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/Resident Project Representative. 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 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 Architect/Engineer/Resident Project Representative 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 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. 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 - Construction Progress Schedule 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 or 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 inches x 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 (1) 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 (2) full set 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 shall 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 (1) sample set; remainder will be returned. Mark-up and retain one (1) 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 (3) 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 - Construction Progress Schedule.
- 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 **Section 01 4000.01 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 - Administrative Requirements.
  - 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 the 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 and **01 4533 - Code-Required Special Inspections and Procedures.**
- 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 the 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 (MSDS): 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 (3) 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 email to [submittals@thebcgroup.com](mailto: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 email 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. See Specification Section 01 7800 - Closeout Submittals 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.

**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. All construction materials shall be stored in a safe and secure manner.
  - 3. Fences around construction supplies or debris shall be maintained. Gates shall always be locked unless a worker is in attendance to prevent unauthorized entry.
  - 4. 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.
  - 5. Workers shall be required to wear photo-identification badges at all times for identification and security purposes while working at the Project Site.
  - 6. 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.

**1.03 SEPARATION**

- A. Separation of Construction Areas from Occupied Pspaces.
  - 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 should be assigned for construction worker use during work hours. In general, 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/Engineer.

#### **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/Engineer.

#### **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. Each 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.
- B. Each 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. Each 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. 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, the following shall apply. 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). Large and small Asbestos Projects as defined by 12 NYCRR 56 shall not be performed while the building is occupied. Minor Asbestos Projects defined by 12 NYCRR 56 as an Asbestos Project involving the removal, disturbance, repair, encapsulation, enclosure or handling of 10 square feet or less of asbestos or asbestos material, or 25 linear feet or less of asbestos or asbestos material may be performed in unoccupied areas of an occupied building in accordance with the above referenced regulations. If suspected asbestos containing materials are encountered, notify the Architect immediately.
- E. 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 Inspectors and Certified Lead Hazard Assessors must perform analysis and an EPA Certified Designer with a New York State P.E. license shall perform design.

#### **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**

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**SECTION 01 3553  
SECURITY PROCEDURES**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Security measures including entry control, personnel identification, and miscellaneous restrictions.

**1.02 RELATED REQUIREMENTS**

- A. Section 01 0000 - General Requirements: Use of premises and occupancy.
- B. Section 01 3529.10 - Life Safety Requirements During School Construction.

**1.03 SECURITY PROGRAM**

- A. Protect Work 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 directed by Architect.
- D. Restrict entrance of persons and vehicles into Project Site and existing facilities.
- E. Badges shall include personal photograph, name, expiration date, and employer.
- F. Maintain a list of accredited persons; submit copy to Owner and Architect on request.

**PART 2 PRODUCTS - NOT USED**

**PART 3 EXECUTION - NOT USED**

**END OF SECTION**

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**SECTION 01 4000.01  
QUALITY REQUIREMENTS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. References and standards.
- B. Mock-ups.
- C. Control of installation.
- D. Tolerances.

**1.02 REFERENCE STANDARDS**

- A. ASTM C1077 - Standard Practice for Laboratories Testing Concrete and Concrete Aggregates for Use in Construction and Criteria for Laboratory Evaluation; 2011c.
- B. ASTM C1093 - Standard Practice for Accreditation of Testing Agencies for Masonry; 2012.
- C. ASTM D3740 - Standard Practice for Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction; 2012a.
- D. ASTM E329 - Standard Specification for Agencies Engaged Construction Inspection and/or Testing; 2011.
- E. ASTM E543 - Standard Specification for Agencies Performing Nondestructive Testing; 2009.

**1.03 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. Conform to reference standard of date of issue current on date of Contract Documents, except where a specific date is established by applicable code.
- C. Obtain copies of standards where required by product Specification Sections.
- D. Maintain copy at Project Site during submittals, planning, and progress of the specific Work, until Substantial Completion.
- E. Should specified reference standards conflict with Contract Documents, request clarification from Architect/Engineer before proceeding.
- F. Neither the contractual relationships, duties, or responsibilities of the parties in Contract nor those of Architect/Engineer shall be altered from the Contract Documents by mention or inference otherwise in any reference document.

**1.04 TESTING AND INSPECTION AGENCIES**

- A. Unless otherwise noted, the Owner shall assume cost of providing all testing.
- B. If specific materials or installation are determined to be in non-conformance with standards as outlined in Contract Documents, the Contractor shall assume the cost of any and all additional tests required to establish conformance or non-conformance. As specifically directed by the Engineer, the Contractor shall perform additional testing and remove and replace any Defective Work and test new material all as directed by the Engineer and required for a complete and proper execution of the Contract Documents.
- C. Non-conforming Work of materials shall be reported immediately to the Contractor; Owner's Field Representative, and Architect/Engineer responsible for the Project.

**1.05 SPECIFIC TESTS AND INSPECTIONS**

- A. Provide all additional tests and inspections required by provisions of the Contract Documents, not specifically outlined in the Section 01 4533 - Code-Required Special Inspections, and such other tests and inspections as are directed by the Engineer. Should Code-Required Special Inspection not be required, special test and inspections shall still be conducted in accordance with Section 01 4000 - Quality Requirements.

- B. Tests include, but are not necessarily limited to, those described in detail in Part 3 of this Section and as required by specific Construction Divisions and Sections.

## **PART 2 PRODUCTS - NOT USED**

## **PART 3 EXECUTION**

### **3.01 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/Engineer 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.

### **3.02 MOCK-UPS**

- A. Tests will be performed under provisions identified in this Section and identified in the respective product Specification Sections.
- B. Assemble and erect specified items with specified attachment and anchorage devices, flashings, seals, and finishes.
- C. Accepted mock-ups shall be a comparison standard for the remaining Work.
- D. Where mock-up has been accepted by Architect/Engineer and is specified in product specification sections to be removed, remove mock-up and clear area when directed to do so.

### **3.03 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/Engineer before proceeding.
- C. Adjust products to appropriate dimensions; position before securing products in place.

### **3.04 DEFECT ASSESSMENT**

- A. Replace Work or portions of the Work not conforming to specified requirements.
- B. If, in the opinion of Architect/Engineer, 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.

**1.02 DEFINITIONS**

- A. Code or Building Code: ICC (IBC), International Building Code, Most Recent Edition 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.

**1.03 REFERENCE STANDARDS**

- A. ACI 318 - Building Code Requirements for Structural Concrete and Commentary 2014 (Errata 2018).
- B. ASTM C31/C31M - Standard Practice for Making and Curing Concrete Test Specimens in the Field 2021.
- C. ASTM C172/C172M - Standard Practice for Sampling Freshly Mixed Concrete 2017.
- D. ASTM D3740 - Standard Practice for Minimum Requirements for Agencies Engaged in the Testing and/or Inspection of Soil and Rock as Used in Engineering Design and Construction 2019.
- E. ASTM E329 - Standard Specification for Agencies Engaged in Construction Inspection, Testing, or Special Inspection 2020.
- F. ICC (IBC) - International Building Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

**1.04 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. Employment of agency in no way relieves Contractor of obligation to perform work in accordance with requirements of Contract Documents.

**1.05 TESTING AND INSPECTION AGENCIES**

- A. Owner or Architect may employ services of an independent testing agency to perform additional testing and sampling associated with special inspections but not required by the building code.
- B. Employment of agency in no way relieves Contractor of obligation to perform work in accordance with requirements of Contract Documents.

**1.06 QUALITY ASSURANCE**

- A. Special Inspection Agency Qualifications:
  - 1. Independent firm specializing in performing testing and inspections of the type specified in this section.
- B. Testing Agency Qualifications:

1. Independent firm specializing in performing testing and inspections of the type specified in this section.

## **PART 2 PRODUCTS - NOT USED**

## **PART 3 EXECUTION**

### **3.01 SCHEDULE OF SPECIAL INSPECTIONS, GENERAL**

- A. 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 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. Design Mix: Verify plastic concrete complies with the design mix in approved Contract Documents and with ACI 318, Chapter 4 and 5.2; periodic.
- C. Concrete Sampling Concurrent with Strength Test Sampling: Each time fresh concrete is sampled for strength tests, verify compliance with ASTM C172/C172M, ASTM C31/C31M and ACI 318, Chapter 26.5, 26.12, and record the following, continuous:
  1. Slump.
  2. Air content.
  3. Temperature of concrete.
- D. Specified Curing Temperature and Techniques: Verify compliance with approved Contract Documents and ACI 318, Sections 5.11 through 5.13; periodic.
- E. Formwork Shape, Location and Dimensions: Verify compliance with approved Contract Documents and ACI 318, Section 6.1.1; periodic.

### **3.03 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.

### **3.04 SPECIAL INSPECTION AGENCY DUTIES AND RESPONSIBILITIES**

- A. Special Inspection Agency shall:
  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 reference standards.
  3. Ascertain compliance of materials and products 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. Re-testing required because of non-compliance with specified requirements shall be performed by the same agency on instructions by Architect.



- C. Re-testing required because of non-compliance with specified requirements shall be paid for by Contractor.

### **3.05 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.

### **3.06 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.

**END OF SECTION**

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**SECTION 01 5000  
TEMPORARY FACILITIES AND CONTROLS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Temporary utilities.
- B. Temporary sanitary facilities.
- C. Temporary controls: Barriers, enclosures, and fencing.
- D. Security requirements.
- E. Vehicular access and parking.
- F. Waste removal facilities and services.

**1.02 TEMPORARY POWER - GENERAL**

- A. The Electrical Contractor shall secure and pay for all required permits, certificates, notarizations, back charges for Work performed by others, and other expenses incidental to the installation of the temporary electric service.
- B. All such Temporary Electrical Work shall meet the requirements of the National Electrical Code of the local utility company and OSHA. This Contractor shall make all necessary arrangements with the local utility company as to where the temporary service can be obtained from.
- C. The temporary electric service shall be based on the following:
  - 1. Rooms or spaces under 250 sf - one (1) 100 watt lamp.
  - 2. Rooms or spaces over 250 sf and under 500 sf - two (2) 100 watt lamps.
  - 3. Rooms or spaces over 500 sf - one (1) 200 watt lamp per every 1,000 sf or fraction thereof.
  - 4. Sufficient wiring outlets and lamps shall be installed to insure proper lighting in stairwells, corridors and passage areas.
  - 5. Temporary power, in addition to the lighting requirements, shall be provided throughout the building for electrically operated tools on a minimum of 0.50 watts per square foot. Motors up to and including 1 hp shall only be provided for.
- D. All necessary overhead pole lines, transformers, meters, cables, panelboards, switches, and accessories required by the temporary light and power installation shall be provided by the Electrical Contractor.
- E. The Electrical Contractor shall furnish and install all lamps, both initial and replacement, used for the temporary lighting system.
- F. All Prime Contractors, subcontractors, individually, shall furnish all extension cords and lamps therefore, sockets, motors, and accessories as required for their Work.
  - 1. Any temporary wiring of a special nature, other than that specified above, required for their Work.
  - 2. Any temporary wiring of construction offices and buildings used by them, other than the office of the Resident Project Representative.
- G. All temporary wiring, service equipment, and accessories thereto shall be removed by the Electrical Contractor when directed to do so.
- H. All lamps installed in permanent lighting fixtures and used as temporary lights during the construction periods, shall be removed and replaced before completion of by the set of lamps required to be furnished and installed under the Contract.

**1.03 TEMPORARY ELECTRIC POWER (FOR EXISTING BUILDINGS )**

- A. The Electrical Contractor shall provide temporary services as follows:
  - 1. Provide and maintain a 120 volt distribution system throughout the Project Work Areas for the temporary outlets to be used by all Trades. Circuits for the temporary distribution system shall be taken from any accessible power panel in existing building if adequate power is available for temporary distribution. Cables used for the temporary service shall be concealed above ceilings in all occupied spaces of the Owner. The temporary electric service shall be installed and maintained in compliance with NEC and OSHA requirements.

2. Temporary power distribution (outlets) to be spaced so that any Contractor can obtain power for Work at any point within the project with a 50 foot extension cord. All extension cords to be provided by user. At no point throughout the Project will ANY Contractor be allowed to utilize permanent outlets installed as part of the Project.
3. Provide all temporary outlets with ground fault circuit interrupted protection. At the Contractor's option, subject to written approval by the Architect/Engineer/Resident Project Representative, an assured equipment grounding conductor program may be substituted for ground fault interrupters (in compliance with all OSHA requirements).
4. Temporary power will not be used for resistive electric temporary heat or temporary heat of any kind. The General Contractor shall be completely responsible for providing all temporary heat (in accordance with Specification Section 01 5100 - Heat During Construction) including any and all required power.
5. The Electrical Contractor is to provide and maintain temporary power to all of the Prime Contractor's office trailers and the Resident Project Representative's office trailers, and to disconnect same and remove any necessary power poles at the end of the Project.
6. Under no circumstances will electric welders be connected to the temporary electric service. Contractors requiring welder shall supply engine-driven equipment or make independent arrangements for power.
7. The Electrical Contractor shall provide and maintain temporary and/or permanent power to all permanently installed equipment within 15 calendar days of installation including sump pumps, fans, pumps, and boilers any of which require operation prior to substantial completion of the Project.
8. The complete installation and removal of the temporary electric distribution system shall be the complete responsibility of the Electrical Contractor.

#### **1.04 TEMPORARY LIGHTING**

- A. Each Contractor will be allowed to utilize existing lighting systems within the building, however, any additional lighting required to subsidize or otherwise enhance the existing lighting which may be required for the Contractor to complete his Work shall be provided by the Contractor at no additional expense to the Owner.
- B. The Electrical Contractor shall provide and maintain temporary lighting (minimum 5 foot candles) in areas of new construction and renovation.
- C. Any Contractor requiring electric service lighting with capabilities other than as provided for in the above shall provide, at his own expense, a separate feeder system.

#### **1.05 TEMPORARY SANITARY FACILITIES**

- A. The General Contractor shall provide and maintain required facilities and enclosures for the use of all Contractors throughout the duration of the project. Provide at time of project mobilization.
- B. Maintain daily in clean and sanitary condition.
- C. Use of existing sanitary facilities in occupied buildings is prohibited.

#### **1.06 BARRIERS**

- A. The General Contractor shall be completely responsible for all barriers as outlined in these Specifications.
- B. Provide barriers to prevent unauthorized entry to construction areas, to prevent access to areas that could be hazardous to workers or the public, to allow for owner's use of site and to protect existing facilities and adjacent properties from damage from construction operations and demolition.
- C. Provide barricades and covered walkways required by governing authorities for public rights-of-way and for public access to existing building.
- D. Provide protection for plants designated to remain.
  1. Provide 4 foot mesh barrier fencing to prevent unauthorized entry or storage of materials or equipment under trees to remain.
  2. Barrier fencing is to be erected approximately 2 foot outside the existing tree's drip zone.
  3. Any existing trees or plants destroyed or damaged shall be replaced in kind.

4. Prior to excavation or trenching within 20 feet of existing trees, a Licensed Arborist shall be consulted to advise proper cutting procedures.
  5. Root pruning or other necessary procedures necessary to save existing trees shall be performed under the direction of a Licensed Arborist.
- E. Protect non-owned vehicular traffic, stored materials, site, and structures from damage.

#### **1.07 FENCING**

- A. The General Contractor shall be completely responsible for all fences as outlined in these Specifications.
- B. Where indicated on the Contract Drawings, provide 6 foot high fence around construction site; equip with vehicular and pedestrian gates with locks. Pedestrian gates shall be provided with panic hardware and shall lock from exterior only.

#### **1.08 EXTERIOR ENCLOSURES**

- A. The General Contractor shall provide temporary insulated weather tight closure of exterior openings to accommodate acceptable working conditions and protection for products and for the protection of the building, to allow for temporary heating and maintenance of required ambient temperatures identified in individual Specification Sections. Exterior enclosure shall also prevent entry of unauthorized persons. The General Contractor shall provide access doors with self-closing hardware and locks.

#### **1.09 INTERIOR ENCLOSURES**

- A. The General Contractor shall provide temporary partitions and ceilings as described herein and in other pertinent Sections of the Contract Documents to separate Work Areas from Owner-occupied areas, to prevent penetration of dust and moisture into Owner-occupied areas, and to prevent damage to existing materials and equipment as required and/or directed by Architect/Engineer/Resident Project Representative/Owner.
- B. Construction: Unless otherwise indicated, construct partitions using framing and 5/8 inch Type X gypsum board materials with closed joints and sealed edges at intersections with existing surfaces. Construction shall be 1 hour rated.
- C. The General Contractor shall provide temporary dust control to prevent the migration of dust to non-construction areas of the building. Temporary dust barrier shall consist of temporary partitions and fire rated 6 mil polyethylene sheeting. Dust control barrier shall be provided with polyethylene primitive air lock flap. Dust control barrier shall be provided at perimeter of Work Area and/or as directed by Architect/Engineer/Residential Project Representative.

#### **1.10 SECURITY**

- A. Provide security and facilities to protect Work, existing facilities, and Owner's operations from unauthorized entry, vandalism, or theft.
- B. Coordinate with Owner's security program.

#### **1.11 VEHICULAR ACCESS AND PARKING**

- A. No of Contractors Contractor shall coordinate access and haul routes with governing authorities and Owner.
- B. No of Contractors Contractor shall provide and maintain access to fire hydrants, free of obstructions.
- C. No of Contractors Contractor shall provide means of removing mud from vehicle wheels before entering streets. Clean and sweep streets as required to maintain clear and free of mud.
- D. Designated existing on-site roads may be used for construction traffic as coordinated through the Resident Project Representative.
- E. The General Contractor shall provide temporary parking areas within the construction staging areas to accommodate construction personnel. When site space is not adequate, provide additional off-site parking.
- F. Do not allow vehicle parking on existing pavement.
- G. Designate five 5 parking spaces for Owner and Architect/Engineer/Resident Project Representative's use.

### **1.12 WASTE REMOVAL**

- A. No of Contractors Contractor shall provide waste removal facilities and services as required to maintain the site in clean and orderly condition.
- B. No of Contractors Contractor shall provide containers with lids. No of Contractors Contractor shall remove litter, debris, and other construction waste generated by their Work from the site on a regular basis.
- C. If materials to be recycled or re-used on the Project must be stored on-site, provide suitable non-combustible containers; locate containers holding flammable material outside the structure unless otherwise approved by the authorities having jurisdiction.
- D. Open free-fall chutes are not permitted. Terminate closed chutes into appropriate containers with lids.

### **1.13 STORAGE OF CONSTRUCTION MATERIALS AND EQUIPMENT**

- A. Construction materials/equipment shall not be stored in a manner which will obstruct access to fire hydrants, call boxes, catch basins, or manholes.
- B. Construction materials/equipment shall not be stored within 20 feet of traffic intersection or placed in a manner which obstruct observations of traffic or hinder public transit loading.

### **1.14 REMOVAL OF UTILITIES, FACILITIES, AND CONTROLS**

- A. Remove temporary utilities, equipment, facilities, materials, prior to Date of Substantial Completion inspection.
- B. Remove underground installations to a minimum depth of 2 feet. Grade site as indicated.
- C. Clean and repair damage caused by installation or use of Temporary Work.
- D. Restore existing facilities used during construction to original condition.

### **1.15 TEMPORARY WATER SERVICE**

- A. No of Contractors Contractor is advised that there is a water supply source available at the Project Site. The Contractors are advised that during some periods of construction water in this location may not be available. However, when water is available, all Contractors will be allowed to use it as long as it does not interfere with the Owner's operations and/or functions in any way. No separate arrangements will be made by the Owner to provide a temporary water supply for the Contractors' convenience other than what is currently available.

### **PART 2 PRODUCTS - NOT USED**

### **PART 3 EXECUTION - NOT USED**

**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:

Fabric Properties	Minimum Acceptable Value	Test Method
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 6000  
PRODUCT REQUIREMENTS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. General product requirements.
- B. Transportation, handling, storage and protection.
- C. Product option requirements.
- D. Substitution limitations and procedures.
- E. Procedures for Owner-supplied products.
- F. Maintenance materials, including extra materials, spare parts, tools, and software.

**PART 2 PRODUCTS**

**2.01 NEW PRODUCTS**

- A. Provide new products unless specifically required or permitted by the Contract Documents.
- B. DO NOT USE products having any of the following characteristics:
  - 1. Made using or containing CFC's or HCFC's.

**2.02 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 (1) or More Manufacturers with a Provision for Substitutions: Submit a request for substitution for any manufacturer not named.

**2.03 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 SUBSTITUTION PROCEDURES**

- A. Architect will consider requests for substitutions as outlined herein and Section 3.4.4. of the Supplementary Conditions.
- B. Substitutions may be considered when a product becomes unavailable through no fault of the Contractor.
- C. Document each request with complete data substantiating compliance of proposed substitution with Contract Documents.
- D. A request for substitution constitutes a representation that the submitter:
  - 1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product.
  - 2. Agrees to provide the same warranty for the substitution as for the specified product.
  - 3. Agrees to coordinate installation and make changes to other Work that may be required for the Work to be complete with no additional cost to Owner.
  - 4. Waives claims for additional costs or time extension that may subsequently become apparent.
  - 5. Will reimburse Owner and Architect/Engineer for review or redesign services associated with re-approval by authorities.
- E. Substitutions will not be considered when they are indicated or implied on Shop Drawing or product data submittals, without separate written request, or when acceptance will require revision to the Contract Documents.
- F. Substitution Submittal Procedure (after Contract award):
  - 1. Submit one (1) copy of the request for substitution for consideration. Limit each request to one (1) proposed substitution. Provide all information as required under Section 01 3300 - Submittal Procedures and Section 3.4.4. of the Supplementary Conditions.

2. Submit Shop Drawings, product data, and certified test results attesting to the proposed product equivalence as outlined in Section 01 3300 - Submittal Procedures. Burden of proof is on proposer. When colors are pre-selected and noted on the Drawings or in the Specifications, the substitution form will include proposed substitute color palette.
3. The Architect/Engineer will notify Contractor in writing of decision to accept or reject request.

### **3.02 OWNER-SUPPLIED PRODUCTS**

- A. Owner's Responsibilities:
  1. Arrange for and deliver Owner reviewed Shop Drawings, product data, and samples, to Contractor.
  2. Arrange and pay for product delivery to site.
  3. On delivery, inspect products jointly with Contractor.
  4. Submit claims for transportation damage and replace damaged, defective, or deficient items.
  5. Arrange for manufacturers' warranties, inspections, and service.
- B. Contractor's Responsibilities:
  1. Review Owner reviewed Shop Drawings, product data, and samples.
  2. Receive and unload products at site; inspect for completeness or damage jointly with Owner.
  3. Handle, store, install and finish products.
  4. Repair or replace items damaged after receipt.

### **3.03 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.

### **3.04 STORAGE AND PROTECTION**

- A. 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.
- B. Store and protect products in accordance with manufacturers' instructions.
- C. Store with seals and labels intact and legible.
- D. Store sensitive products in weather tight, climate controlled, enclosures in an environment favorable to product.
- E. For exterior storage of fabricated products, place on sloped supports above ground.
- F. Provide bonded off-site storage and protection when site does not permit on-site storage or protection.
- G. Protect products from damage or deterioration due to construction operations, weather, precipitation, humidity, temperature, sunlight and ultraviolet light, dirt, dust, and other contaminants.
- H. Comply with manufacturer's warranty conditions, if any.

- I. Cover products subject to deterioration with impervious sheet covering. Provide ventilation to prevent condensation and degradation of products.
- J. Store loose granular materials on solid flat surfaces in a well-drained area. Prevent mixing with foreign matter.
- K. Prevent contact with material that may cause corrosion, discoloration, or staining.
- L. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.
- M. Arrange storage of products to permit access for inspection. Periodically inspect to verify products are undamaged and are maintained in acceptable condition.

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SAMPLE

APPLICATION FOR REVIEW OF SUBSTITUTE MATERIAL OR EQUIPMENT

PROJECT:\_\_\_\_\_ DATE:\_\_\_\_\_

CONTRACTOR NAME:\_\_\_\_\_

ITEM DESCRIPTION:\_\_\_\_\_

ARCHITECT/ENGINEERING SPECIFICATION OR DRAWING REFERENCE:\_\_\_\_\_

We hereby propose to substitute the following item of material or equipment in lieu of that as originally specified for the above-referenced project. We certify that this substitution, if accepted, will meet the intent of the original design and be equal to that as specified in quality and performance.

In support of this application we have attached the required documentation outlining the deviations from the originally specified item and the modifications which would result from its implementation.

The acceptance of this application will not affect the completion of our work in accordance with the Contract Agreement and will not in any way, directly or indirectly, cause additional cost to the Owner. In addition, we accept complete responsibility to perform all additional work, make any necessary modifications and will absorb all costs of any related changes imposed on other contractors resulting from the acceptance of this substitution.

\_\_\_\_\_  
CONTRACTOR

\_\_\_\_\_  
SIGNATURE

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APPLICATION FOR REVIEW OF SUBSTITUTE MATERIAL OR EQUIPMENT

SUMMARY OF PROPOSED SUBSTITUTES

Variations of proposed substitute from specified: (Provide written summary and document with supporting manufacturer's data and attach.)

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Modifications required as a result of the substitution: (If the substitute requires modifications to structure, piping, layout, electrical, etc. Attach details of proposed modifications necessary to accommodate the substitute.)

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(The review and acceptance of this Application does not relieve the Contractor from responsibilities of any unforeseen modifications resulting from this Application.)

Estimate of costs resulting from application:

Claims from other Prime Contractors \$ \_\_\_\_\_

Credit to Owner as a result of this substitution \$ \_\_\_\_\_

\* The time required by the Architect/Engineer to review this application and making the required changes in the Contract Documents shall be recorded. The Contractor shall reimburse the Owner for the Architect/Engineer's charges for evaluating this Application

**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 Indoor-Emissions-Restricted products.
- B. Requirements for VOC-Content-Restricted products.

**1.02 DEFINITIONS**

- A. Indoor-Emissions-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.
  - 3. Flooring.
  - 4. Products making up wall and ceiling assemblies.
  - 5. Thermal and acoustical insulation.
- B. 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.
- C. Interior of Building: Anywhere inside the exterior weather barrier.
- D. Adhesives: All gunnable, trowelable, liquid-applied, and aerosol adhesives, whether specified or not; including flooring adhesives, resilient base adhesives, and pipe jointing adhesives.
- E. Sealants: All gunnable, trowelable, and liquid-applied joint sealants and sealant primers, whether specified or not; including firestopping sealants and duct joint sealers.
- F. Inherently Non-Emitting Materials: Products composed wholly of minerals or metals, unless they include organic-based surface coatings, binders, or sealants; and specifically the following:
  - 1. Concrete.
  - 2. Clay brick.
  - 3. Metals that are plated, anodized, or powder-coated.
  - 4. Glass.
  - 5. Ceramics.

**1.03 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. CAL (CDPH SM) - Standard Method for the Testing and Evaluation of Volatile Organic Chemical Emissions From Indoor Sources Using Environmental Chambers 2017, v1.2.
- D. CARB (SCM) - Suggested Control Measure for Architectural Coatings; California Air Resources Board 2007.
- E. CHPS (HPPD) - High Performance Products Database Current Edition at [www.chps.net/](http://www.chps.net/).
- F. CRI (GLP) - Green Label Plus Testing Program - Certified Products Current Edition.
- G. SCAQMD 1113 - Architectural Coatings 1977 (Amended 2016).
- H. SCAQMD 1168 - Adhesive and Sealant Applications 1989 (Amended 2017).
- I. SCS (CPD) - SCS Certified Products Current Edition.
- J. UL (GGG) - GREENGUARD Gold Certified Products Current Edition.

**1.04 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.

## **1.05 QUALITY ASSURANCE**

- A. Indoor Emissions Standard and Test Method: CAL (CDPH SM), using Standard Private Office exposure scenario and the allowable concentrations specified in the method, and range of total VOC's after 14 days.
  - 1. Wet-Applied Products: State amount applied in mass per surface area.
  - 2. Paints and Coatings: Test tinted products, not just tinting bases.
  - 3. Evidence of Compliance: Acceptable types of evidence are the following;
    - a. Current UL (GGG) certification.
    - b. Current SCS (CPD) Floorscore certification.
    - c. Current SCS (CPD) Indoor Advantage Gold certification.
    - d. Current listing in CHPS (HPPD) as a low-emitting product.
    - e. Current CRI (GLP) certification.
    - f. Test report showing compliance and stating exposure scenario used.
  - 4. Product data submittal showing VOC content is NOT acceptable evidence.
  - 5. Manufacturer's certification without test report by independent agency is NOT acceptable evidence.
- B. 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. Published product data showing compliance with requirements.
    - c. Certification by manufacturer that product complies with requirements.
- C. 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. All Products: Comply with the most stringent of federal, State, and local requirements, or these specifications.
- B. Indoor-Emissions-Restricted Products: Comply with Indoor Emissions Standard and Test Method, except for:
  - 1. Inherently Non-Emitting Materials.
- C. 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 REQUIREMENTS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Examination, preparation, and general installation procedures.
- B. Surveying for laying out the Work.
- C. Cleaning and protection.
- D. Starting of systems and equipment.
- E. Closeout procedures, including Contractor's Correction Punch List, except payment procedures.
- F. General requirements for maintenance service.

**1.02 RELATED REQUIREMENTS**

- A. Division 1 - General Requirements - For All Contracts.
- B. Section 01 7900 - Demonstration and Training: Demonstration of products and systems to be commissioned and where indicated in specific specification sections.

**1.03 QUALIFICATIONS**

- A. For Survey Work, employ a Land Surveyor registered in New York and acceptable to Architect/Engineer.
- B. For field engineering, employ a Professional Engineer of the discipline required for specific service on Project, licensed in New York.

**1.04 PROJECT CONDITIONS**

- A. Grade site to drain. Maintain excavations free of water. Provide, operate, and maintain pumping equipment.
- B. Protect site from puddling or running water. Provide water barriers as required to protect site from soil erosion. **Refer to Section 01 5713 - Temporary Erosion and Sediment Control for Specific Requirements.**
- C. Ventilate enclosed areas to assist cure of materials, to dissipate humidity, and to prevent accumulation of dust, fumes, vapors, or gases.
- D. 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.
  - 1. Provide dust-proof barriers between construction areas and areas continuing to be occupied by Owner.
- E. Erosion and Sediment Control: Plan and execute Work by methods to control surface drainage from cuts and fills, from borrow and waste disposal areas. Prevent erosion and sedimentation.
  - 1. Minimize amount of bare soil exposed at one (1) time.
  - 2. Provide temporary measures such as berms, dikes, and drains, to prevent water flow.
  - 3. Construct fill and waste areas by selective placement to avoid erosive surface silts or clays.
  - 4. Periodically inspect earthwork to detect evidence of erosion and sedimentation; promptly apply corrective measures.
- F. Noise Control: Provide methods, means, and facilities to minimize noise produced by construction operations.
- G. Pest and Rodent Control: Provide methods, means, and facilities to prevent pests and insects from damaging the work.
- H. Rodent Control: Provide methods, means, and facilities to prevent rodents from accessing or invading premises.
- I. 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.

## **1.05 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 shown 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. Provide all required protection including, but not necessarily limited to, shoring, bracing, and support to maintain structural integrity of the Work.
- B. Vent all machinery used during the progress of the Work in this Section directly to the outside, unless otherwise instructed by the Architect/Engineer.
- C. Clean substrate surfaces prior to applying next material or substance.
- D. Seal cracks or openings of substrate prior to applying next material or substance.

- E. 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**

- A. Reference Section 01 0000 - General Requirements for Owner provided project lines and grades.
- B. The Contractors shall be responsible for the layout of his Work as follows:
  - 1. Verify locations of survey control and reference points prior to starting Work. Preserve and protection of survey control and reference points during construction.
  - 2. Promptly notify Owner's Project Representative and Architect and of any discrepancies discovered.
  - 3. Promptly report to Owner's Project Representative and Architect the loss or destruction of any reference point or relocation required because of changes in grades or other reasons.
  - 4. Have dislocated survey control points re-established based on original survey control. Make no changes without prior written notice to Owner's Project Representative and Architect.
  - 5. Establish elevations, lines, and levels. Locate and lay out the Work utilizing the services of a Licensed Land Surveyor:
    - a. Site improvements including pavements, athletic facilities, stormwater management improvements, utilities, and any and all other site improvements requiring location and layout. Provide stakes for grading, fill and topsoil placement; utility locations and elevations, slopes, and invert elevations; and [ ].
    - b. Grid or axis for structures.
    - c. Building foundation, column locations, ground floor elevations.
    - d. Any and all other survey control required to establish location, lines and grades for site improvements as outlined in the Contract Documents.
  - 6. Periodically verify layouts by same means.
  - 7. Maintain a complete and accurate log of Control and Survey Work as it progresses.

### **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 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.

### **3.06 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. Prohibit traffic from landscaped areas.
- H. Remove protective coverings when no longer needed; reuse or recycle plastic coverings if possible.

### **3.07 SYSTEM STARTUP**

- A. Coordinate schedule for start-up of various equipment and systems.
- B. Notify Architect/Engineer and Owner 7 calendar days prior to start-up of each item.
- C. 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.
- D. Verify tests, meter readings, and specified electrical characteristics agree with those required by the equipment or system manufacturer.
- E. Verify that wiring and support components for equipment are complete and tested.
- F. Execute start-up under supervision of applicable Contractor personnel and manufacturer's representative in accordance with manufacturer's instructions.
- G. 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.
- H. Submit a written report that equipment or system has been properly installed and is functioning correctly.

### **3.08 DEMONSTRATION AND INSTRUCTION**

### **3.09 ADJUSTING**

- A. **Adjust operating products and equipment. See Section 01 9113 for general commissioning requirements.** **DELETE IF NOT IN PROJECT OR UNBOLD/DELETE UNDERLINE**
- B. **Testing, adjusting, and balancing HVAC systems: See Section 23 0593.** **DELETE IF NOT IN PROJECT OR UNBOLD/DELETE UNDERLINE**

### **3.10 FINAL CLEANING**

- A. Execute final cleaning prior to Substantial Completion.
  - 1. Clean areas to be occupied by Owner prior to final completion before Owner occupancy.
- B. Use cleaning materials that are non-hazardous.
- C. Clean interior and exterior glass, and light lenses exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, wet wipe counters, casework, etc., broom clean concrete and tile surfaces, vacuum carpeted and soft surfaces.
- D. Remove all labels that are not permanent. Do not paint or otherwise cover fire test labels or nameplates on mechanical and electrical equipment.
- E. Clean equipment and fixtures to a sanitary condition with cleaning materials appropriate to the surface and material being cleaned.
- F. Clean or replace filters of operating equipment used during Construction Phase.
- G. Clean debris from roofs, gutters, downspouts, and drainage systems.
- H. Clean site; sweep paved areas, rake clean landscaped surfaces.
- I. Remove waste, surplus materials, trash/rubbish, and construction facilities from the site; dispose of in legal manner; do not burn or bury.



### **3.11 CLOSEOUT PROCEDURES**

- A. Make submittals that are required by Specification Section 01 7800 - Closeout Submittals.
- B. Accompany Resident Project Representative on preliminary inspection to determine status of completion. Itemize Work to be compiled or requiring correction and include in Contractor's Notice of Substantial Completion.
- C. Notify Architect/Engineer when Work is considered ready for Substantial Completion.
- D. Submit written certification that Contract Documents have been reviewed, Work has been inspected, and that Work is completed in accordance with Contract Documents and ready for Architect/Engineer's review.
- 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 executed Certificates of Substantial Completion and comply with requirements for access to Owner-occupied areas. Items of Work listed in executed Certificates of Substantial Completion shall be scheduled and completed within 20 working days of the date of issuance. Exterior and Site-Related Corrective Work, which may be weather dependent, will be completed within 20 business days of acceptable weather conditions.
- G. Notify Architect/Engineer when Work is considered finally complete.
- H. Schedule and complete items of Work determined by Architect/Engineer's final inspection immediately.

### **3.12 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 1 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. Include systematic examination, adjustment, and lubrication of components. Repair or replace parts whenever required. Use parts produced by the manufacturer of the original component.
- E. Maintenance service shall not be assigned or transferred to any agent or subcontractor without prior written consent of the Owner.

**END OF SECTION**

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**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 the Architectural Contract Drawings for all penetrations they are required to provide, as outlined in Article 1.05, A., 2., of this Section.
  - 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.
- B. Cutting and Patching Proposal: Submit a proposal describing procedures at least 10 days before the time cutting and patching will be performed, requesting approval to proceed. Include the following information:
  - 1. Extent: At each occurrence, describe cutting and patching, show how they will be performed, and indicate why they cannot be avoided.
  - 2. Changes to In-Place Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building's appearance and other significant visual elements.
  - 3. Products: List products to be used and firms or entities that will perform the Work.
  - 4. Dates: Indicate when cutting and patching will be performed.

5. Utility Services and Mechanical/Electrical Systems: List services/systems that cutting and patching procedures will disturb or affect. List services/systems that will be relocated and those that will be temporarily out of service. Indicate how long services/systems will be disrupted.
6. Structural Elements: Where cutting and patching involve adding reinforcement to structural elements, submit details and engineering calculations showing integration of reinforcement with original structure.
7. Design Professional's Approval: Obtain approval of cutting and patching proposal before cutting and patching. Approval does not waive right to later require removal and replacement of unsatisfactory Work.

## **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 as depicted on the Architectural Contract Drawings.
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.
- D. **For replacement of excavated materials see Division 31 for Excavating, Filling, and Grading.**

## **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. **Comply with requirements of applicable sections of Division 31 where cutting and patching requires excavating and backfilling.**
- E. 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.
- F. Restore Work with new products in accordance with requirements of Contract Documents.
- G. 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.
- H. 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.
- I. Refinish surfaces to match adjacent finish. For continuous surfaces, refinish to nearest corner, intersection or natural break. For an assembly, refinish entire unit.
- J. Perform fitting and adjustment of products to provide finished installation complying with the specified tolerances and finishes.
- K. 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. No of Contractors 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. General and Supplementary Conditions - Performance bond and labor and material payment bonds, warranty, and correction of Work.
- B. Section 01 3300 - Submittal Procedures.
- C. Section 01 7000 - Execution Requirements
- D. Individual Product Sections: Specific requirements for operation and maintenance data.
- E. Individual Product Sections: Warranties required for specific products or Work.

**1.03 SUBMITTALS**

- A. Project Record Documents: Submit documents to Architect/Engineer with claim for final Application for Payment. Refer to General and Supplementary Conditions for Price and Payment Procedure.
- B. Operation and Maintenance Data:
  - 1. Submit two (2) copies of preliminary draft or proposed formats and outlines of contents before start of Work. Architect/Engineer will review draft and return one (1) copy with comments.
  - 2. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit completed documents within 10 days after acceptance.
  - 3. Submit one (1) copy of completed documents 15 business days prior to final inspection. This copy will be reviewed and returned after final inspection, with Architect/Engineer comments. Revise content of all document sets as required prior to final submission.
  - 4. Submit two (2) sets of revised final documents in final form within 10 business days after final inspection.
  - 5. Submit an electronic copy of as-builts and Record Documents on CD for closeout.
- 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 business days after acceptance.
  - 2. Make other submittals within 10 business 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 business 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 (1) 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.
- G. Record Documents shall be turned over to the Owner at the conclusion of the Project along with the final payment.

### **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. 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 (1) 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 24 lb. 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. Provide title of Project; names, addresses, and telephone numbers of Architect/Engineer, Consultants, and Contractor with name of responsible parties.
  - 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 business 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 the 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. Include photocopies of each in operation and maintenance manuals, indexed separately on Table of Contents.

**END OF SECTION**

**PROJECT CLOSEOUT  
CHECK LIST**

**Project:** Highland Falls Fort Montgomery CSD  
James I O'Neill Renovation Project **Project No.** 2020-117

**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. \*\*

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.**

## CONTRACTOR'S WARRANTY OF TITLE

**TO (Owner):**

Highland Falls – Fort Montgomery

Central School District

**Date:**

21 Morgan Road

**Contract No.:**

Highland Falls, New York 10928

**Project No.:** 2020-117

**Project:** James I O'Neill Renovation Project

21 Morgan Road, Highland Falls NY 10928

(Name, address)

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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## CERTIFICATION

I, \_\_\_\_\_, being an officer of \_\_\_\_\_  
do hereby certify that \_\_\_\_\_ was  
the Contractor for \_\_\_\_\_ work at the Highland Falls – Fort  
Montgomery Central School District’s James I O’Neill Renovation Project (Architect’s  
Project No. 2020-117), State Education Department Control No. 44-09-01-04-0-008-017  
(James O’Neill High School); 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 \_\_\_\_\_, 201\_\_.

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

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**SECTION 02 0800  
ASBESTOS ABATEMENT PROCEDURES**

**PART I – GENERAL**

**1.01 DESCRIPTION**

- A. All work under this contract shall be performed in strict accordance with the specifications and all applicable laws for asbestos removal projects. The Abatement Contractor shall furnish all labor, materials, supervision, services, insurance and equipment necessary for the complete and total removal of Asbestos-containing Materials (ACM) as described herein, in attachments to the specification, Job Specific Variance(s) and/or as directed by Ossining UFSD (here-in-after the "Owner") and/or the Owners Representative(s) to support the Highland Falls – Fort Montgomery CSD – James I. O'Neill HS Renovation Project.
- B. Abatement Contractor shall provide for personnel air monitoring to satisfy OSHA regulation 29 CFR Parts 1926.1101(f). All work performed shall be in strict accordance with applicable provisions and regulations promulgated under New York State Department of Labor, Industrial Code 56 (ICR-56).
- C. The Abatement Contractor shall satisfy the requirements for asbestos projects issued by the New York State Department of Labor concerning licensing and certification; notification; equipment; removal and disposal procedures; engineering controls; work area preparation; decontamination and clean-up procedures; and personnel air monitoring.
- D. The Abatement Contractor shall be responsible for submittal of asbestos project notification(s) and applicable fees to EPA and NYSDOL concerning this project. Project notification(s) shall be made for the cumulative total of ACM to be removed as required by ICR-56-3.4. Work practices for each individual work area established shall be consistent with the quantity of ACM contained within that work area as defined in ICR-56-2.
- E. The scope of work under this contract shall include the following:
  - 1. All asbestos-containing materials (ACM) shall be removed in accordance with these specifications. The Abatement Contractor is responsible for field verification of estimated quantities, locations and other site conditions that may affect work.
  - 2. All fixed objects remaining within the work area(s) shall be protected as required by Title 12 NYCRR Section 56-7.10(b) and as described in these specifications.
  - 3. The containerization, labeling and disposal of all asbestos waste in accordance with applicable city, state and federal regulations and these specifications.
  - 4. The Abatement Contractor will be responsible for repairing all building components damaged during abatement including, but not limited to, ceiling tiles, ceiling finishes, wall finishes and/or floor finishes, etc.
  - 5. The Abatement Contractor shall be responsible for any and all demolition required to access materials identified in scope of work and on associated drawings.
  - 6. Concealed conditions that are exposed and may require additional work shall be brought to the attention of the Owner(s) immediately. The Abatement Contractor shall not abate these areas without a written notice to proceed. If the Abatement Contractor removes additional asbestos prior to the order to proceed the additional work will not be acknowledged.
  - 7. Permissible working hours shall be Monday through Friday 7:00 A.M. to 4:00 P.M. and/or as defined by the Owner(s) and/or Owner's Representative(s). Holidays shall be considered weekends and not included for working days. Upon written approval from the Owner, the Abatement Contractor may work past these hours. The Abatement Contractor will incur any and all costs associated for work performed beyond the defined schedule including, but not limited to: abatement activities, project/air monitoring, custodial/staffing labor, overtime, mobilizations, etc.
  - 8. Buildings will be turned over to the Abatement Contractor as is. At that time, all electrical services and HVAC systems in the proposed work areas will be shut down. Electricity and water supply will be maintained in the building for use by the Abatement Contractor. The Abatement Contractor is responsible for securing all power in the work area(s) and establishing all temporary GFCI hookups necessary to complete his work.
  - 9. The Abatement Contractor shall remove all identified Asbestos-containing Materials (ACM) to building substrate(s); in areas indicted. Subsequent to final air clearances, the substrate(s) shall be washed with a neutralizing agent to prepare the substrate to accept new floor covering and eliminate residual odors.

10. The Abatement Contractor must coordinate location of waste containers with the Facility and the Owner. Deliveries and storage of equipment must be coordinated with the Facility and the Owner.
11. All "Large" and "Small" asbestos abatement projects, as defined by 12 NYCRR56 shall not be performed while the building is occupied. The term "building" 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 exists that do not pass through the occupied portion(s) and ventilation systems must be physically separated and sealed at the isolation barriers.

## **1.02 PRE-CONTRACT SUBMITTALS**

Within three (3) days after bids are opened, the three (3) apparent low bidders shall be required to submit the following documentation:

- A. Resume': Shall include the following:
  1. Provide a list of projects of similar nature performed within the past two (2) years and include the dollar value of all projects. Provide project references to include owner, consultant, and air monitoring firms' name, contact person, address, and phone number, include location of project and date of completion.
  2. Abatement Contractor license issued by New York State Department of Labor for asbestos work in accordance with ICR-56-3.
  3. A list of owned equipment available to be used in the performance of the project.
  4. The number of years engaged in asbestos removal.
  5. An outline of the worker training courses, and medical surveillance program conducted by the Abatement Contractor.
  6. A standard operating procedures manual describing work practices and procedures, equipment, type of decontamination facilities, respirator program, special removal techniques, etc.
  7. Documentation to the satisfaction of the Owner pertaining to the Abatement Contractor's financial resources available to perform the project. Such data shall include, but not be limited to, the firm's balance sheet for the last fiscal year.
- B. Citations/Violations/Legal Proceedings
  1. Submit a notarized statement describing any citations, violations, criminal charges, or legal proceedings undertaken or issued by any law enforcement, regulatory agency, or consultant concerning performance on previous asbestos abatement contracts. Briefly describe the circumstances citing the project and involved persons and agencies as well as the outcome of any actions.
  2. Answer the question: "Has your firm or its agents been issued a Stop Work order on any project within the last two years?" If "Yes" provide details as discussed above.
  3. Answer the question: "Are you now, or have you been in the past, a party to any litigation or arbitrations arising out of your performance on Asbestos Abatement Contracts?" If "Yes" provide details as discussed in 1. above.
  4. Describe any liquidated damages assessed within the last two years.
- C. Preliminary Schedule
  1. Provide a detailed schedule including work dates, work shift times, estimate of manpower to be utilized and the start and completion date for completion of each major work area.

## **1.03 DOCUMENTATION**

- A. The Abatement Contractor shall be required to submit the following and receive the Consultant's approval prior to commencing work on this project:
  1. Provide documentation of worker training for each person assigned to the project. Documentation shall include copies of each workers valid New York State asbestos handler certificates (for those employees who may perform asbestos removal), documentation of current respirator fit test and current OSHA required training and medical examination.
  2. The attached "Asbestos Employee Medical Examination Statement" and "Asbestos Employee Training Statement" forms shall be completed, signed and submitted for each worker assigned to the project. Records of all employee training and medical surveillance shall be maintained for at least forty (40) years. Copies of the records shall be submitted to the Consultant prior to commencement.

3. The Abatement Contractor shall submit proof of a current, valid license issued by the New York State Department of Labor pursuant to the authority vested in the Commissioner by section 906 of the Labor Laws, and that the employees performing asbestos related work on this project are certified by the State of New York as required in Part 56 of Title 12 of the Official Compilation of Codes, Rules and Regulations of the State of New York latest edition. Copies of all licenses shall be submitted prior to the commencement of the project.
  4. The Abatement Contractor shall submit a written respiratory protection program meeting the requirements of 29 CFR 1910.134 to the Consultant.
  5. The name, address, social security number and NYS DOL certificate number of the person(s) who will supervise the asbestos project.
  6. The name and address of the deposit or waste disposal site or sites where the asbestos materials are to be deposited or disposed of. This site must be approved by the Owner. The manifesting procedure must also be specified.
  7. The name, address and New York State Dept. of Environmental Conservation ID Number of any transporters that are to be used to transport waste.
  8. A written Standard Operation Procedure (SOP) that is designed and implemented to maximize protection against human exposure to asbestos dust. The SOP shall take into consideration the workers, visitors, building employees, general public and environment. As a minimum the procedures must include the following:
    - a. Security for all work areas on an around-the-clock basis against unauthorized access.
    - b. Project organization chart including the phone numbers of at least two responsible persons who shall be authorized to dispatch men and equipment to the project in the event of an emergency; including weekends.
    - c. Description of protective clothing and NIOSH approved respirators to be used.
    - d. Description of all removal methods to be used, including HEPA air filtration and decontamination sequence with special emphasis on any procedure that may deviate from these specifications.
    - e. A list of manufacturers' certificates stating that all vacuums, negative air filtration equipment, respirators and air supply equipment meet OSHA and EPA requirements.
    - f. A list of all materials proposed to be furnished and used under this contract.
    - g. Emergency evacuation procedures in the event of fire, smoke or accidents such as injury from falling, heat exposure, electrical shock, etc.
    - h. The name, address and ELAP number of the New York State Department of Health Certified Analytical Testing Laboratory the Contractor proposes to use for the OSHA monitoring.
  9. A detailed plan, in triplicate, for the phasing of the project, division of work areas and location of decontamination facilities, waste containers and temporary office.
  10. Work schedule, identifying firm dates and completion for actual areas. Bar chart or critical path chart indicating phases is required.
- B. The Abatement Contractor shall post their NYS DOL contractor's license and maintain a daily log documenting the dates and time of the following items within each personal decontamination unit:
1. Meetings; purpose, attendants, discussion (brief)
  2. Sign-in and sign-out of all persons entering the work area including name, date, time, social security number, position or function and general description of daily activity.
  3. Testing of barriers and enclosure systems using smoke tubes prior to the beginning of abatement activities and at least once a day thereafter until satisfactory clearance air monitoring results have been achieved.
  4. Inspection of all plastic barriers, twice daily, by the asbestos supervisor.
  5. Loss of enclosure integrity; special or unusual events, barrier breaches, equipment failures, etc.
  6. Daily cleaning of enclosures.
  7. Personnel air monitoring test results for OSHA Compliance. Results shall be posted at the work site within 24 hours of testing and copies supplied to the Owner within five (5) days of testing. Abnormalities shall be supplied to the Owner immediately.

- C. Documentation with confirmation signature of Consultant's representative of the following shall be provided by the Abatement Contractor at the final closeout of the project.
  - 1. Testing of barriers and enclosure systems using smoke tubes shall be performed prior to the beginning of abatement activities and at least once a day thereafter until satisfactory clearance air monitoring results have been achieved.
  - 2. Inspection of all plastic barriers.
  - 3. Removal of all polyethylene barriers.
  - 4. Consultant's inspections prior to encapsulation.
  - 5. Removal of waste materials.
  - 6. Decontamination of equipment (list items).
  - 7. Consultant's final inspection/final air tests.
- D. The Abatement Contractor shall provide records of all project information, to include the following which shall be submitted upon completion of the project and prior to approval of the Abatement Contractor's payment application:
  - 1. The location and description of the abatement project.
  - 2. The name, address and social security number of the person(s) who supervised the asbestos project.
  - 3. Certified payroll documentation Pursuant to Article 8, Section 220 of the NYS Labor Law
  - 4. Copies of EPA/NYSDOL Asbestos Certificates for all Workers and Supervisors employed on the Project.
  - 5. Copies of Medical Approval and Respirator Fit Testing for all Asbestos Workers and Supervisors employed on the Project.
  - 6. Copies of Abatement Contractors Daily Sign-In Sheets & Logs for persons entering and leaving the work area. – Title 12 NYCRR Part 56-7.3.
  - 7. Copies of Abatement Contractor's personal air sampling laboratory results.
  - 8. The amounts and type of asbestos materials that was removed, enclosed, encapsulated, or disturbed.
  - 9. The name and address of the deposit or waste disposal site or sites where the asbestos waste materials were deposited or disposed of and all related manifests, receipts and other documentation associated with the disposal of asbestos waste.
  - 10. The name and address of any transporters used to transport waste and all related manifests, receipts and other documentation associated with the transport of asbestos waste.
  - 11. All other information that may be required by state, federal or local regulations.
  - 12. Copy of the Supervisor's Daily Project Log of events as described in 1.03 B, above.

#### **1.04 NOTIFICATIONS AND PERMITS**

- A. The Abatement Contractor shall be required to prepare and submit notifications to the following agencies at least ten (10) days prior to the commencement of the project:
  - 1. Asbestos NESHAPS Contact  
U.S. Environmental Protection Agency  
NESHAPS Coordinator, Air Facilities Branch  
26 Federal Plaza  
New York, New York 10007 (212) 264-7307
  - 2. State of New York Department of Labor  
Division of Safety and Health  
Asbestos Control Bureau  
State Office Building Campus, Building 12, Room 454  
Albany, New York 12240
  - 3. Owner(s): Highland Falls – Fort Montgomery CSD  
P.O. Box 287  
Highland Falls, NY 10928  
ATTN: Denise S. Cedeira, Assistant Superintendent for Business  
Ph. (845) 446-9575 Ext. 1250  
E-mail. denise.cedeira@HFFMCSD.org

4. Environmental Consultant(s): Quality Environmental Solutions & Technologies, Inc.  
(QuES&T)  
1376 Route 9  
Wappingers Falls, New York 12590  
ATTN: Rudy Lipinski, Director of Field Operations  
Ph. (845) 298-6031  
Fx. (845) 298-6251  
E-mail. rlipinski@qualityenv.com

- B. The notification shall include but not be limited to the following information:
1. Name and address of Owner.
  2. Name, address and asbestos handling license number of the Abatement Contractor.
  3. Address and description of the building, including size, age, and prior use of the building or area; the amount, in square feet or linear feet of asbestos material to be removed; room designation numbers or other local information where asbestos material is found, including the type of asbestos material (friable or non-friable).
  4. Scheduled starting and completion dates for removal.
  5. Methods to be employed in abating asbestos containing materials.
  6. Procedures and equipment, including ventilating/exhaust systems, that will be employed to comply with the Code of Federal Regulation (CFR) Title 40, Part 61 of the U.S. Environmental Protection Agency.
  7. The name and address of the carting company and of the waste disposal site where the asbestos waste will be deposited.

**NOTE:** Notifications shall be submitted using standard forms as may be used by the respective agency. For DOL (NYS) include "Asbestos Project Notification" form (DOSH-483) with proper fee, if required. For EPA include "Notification of Demolition and Renovation"; 40 CFR Part 61.

- C. The Abatement Contractor shall secure any permits required by the city, town, county, or state that may be required and the cost for obtaining the permit shall be included in his base bid.
- D. The Abatement Contractor shall erect warning signs around the work space at every point of potential entry into the work area in accordance with OSHA 1926.58k (2), (i). These signs shall bear the following information:

**DANGER**

**CANCER AND LUNG DISEASE HAZARD**  
**AUTHORIZED PERSONNEL ONLY**  
**RESPIRATORS AND PROTECTIVE**  
**CLOTHING**  
**ARE REQUIRED IN THIS AREA**

- E. The Abatement Contractor shall post at entrances to the work place and immediate adjacent areas, notifications to building occupants which include the name and license number of the contractor, project location and size, amount and type of ACM, abatement procedures, dates of expected occurrence and name and address of the air monitor and laboratory in compliance with ICR 56-3.6.
- F. The Abatement Contractor shall post a list of emergency telephone numbers at the job site which shall include the Owner's Representative, police, emergency squad, local hospital, Environmental Protection Agency, N.Y. State Department of Labor, Occupational Safety and Health Administration and the local Department of Health.

#### **1.05 APPLICABLE STANDARDS**

Except to the extent that more explicit or more stringent requirements are written directly into the contract documents, applicable standards of the construction industry have the same force and effects (and are made a part of contract documents by reference) as if copied directly into contract documents, or as if published copies were bound herewith. Resolution of overlapping and conflicting requirements, which result from the application of several different industry standards to the same unit of work, shall be by adherence to the most stringent requirement.

- A. Applicable standards listed in these Specifications form a part of this Specification and include, but are not necessarily limited to, standards promulgated by the following agencies and organizations:
1. ANSI:  
American National Standards Institute  
1430 Broadway  
New York, New York 10018
  2. ASHRAE:  
American Society for Heating, Refrigerating  
and Air Conditioning Engineers  
1791 Tullie Circle NE  
Atlanta, Georgia 30329
  3. ASTM:  
American Society for Testing and Materials  
1916 Race Street  
1916 Race Street  
Philadelphia, Pennsylvania 19103
  4. CFR  
Code of Federal Regulations Available  
from Government Printing Office  
Washington, District of Columbia 20402
  5. CGA  
Compressed Gas Association  
1235 Jefferson Davis Highway  
Arlington, Virginia 22202
  6. CS  
Commercial Standard of NBS  
(US Dept. of Commerce)  
Government Printing Office
  7. EPA  
Environmental Protection Agency, Region II  
26 Federal Plaza  
New York, New York 10007  
Asbestos Coordinator - Room 802  
(212) 264-9538  
Part 61, Sub-Parts A & B  
National Emission Standard for Asbestos
  8. FEDERAL SPECS  
Federal Specification (General Services Administration)  
7th and D Street, SW  
Washington, District of Columbia 20406
  9. NBS  
National Bureau of Standards  
(US Department of Commerce)  
Gaithersburg, Maryland 20899
  10. NEC  
National Electrical Code (by NFPA)
  11. NFPA  
National Fire Protection Association  
Quincy, Massachusetts 02269



12. NIOSH  
National Institute for Occupational Safety and Health  
26 Federal Plaza  
New York, New York 10007
  13. NYSDOH  
New York State Department of Health  
Bureau of Toxic Substance Assessment  
Room 359 - 3rd Floor  
Tower Building Empire State Plaza Albany, New York 12237
  14. NYSDEC  
New York State Department of Environmental Conservation Room 136  
50 Wolf Road  
Albany, New York 12233-3245
  15. NYSDOL  
State of New York Department of Labor  
Division of Safety and Health  
Asbestos Control Program State Campus  
Building 12  
Albany, New York 12240
  16. OSHA  
Occupational Safety and Health Administration (US Department of Labor)  
New York Regional Office - room 3445 1515 Broadway  
New York, New York 10036
  17. UL
  18. Underwriters Laboratories 333 Pfingsten Road  
333 Pfingsten Road
  19. Northbrook, Illinois 60062
- B. Federal Regulations: Those which govern asbestos abatement work or hauling and disposal of asbestos waste materials:
1. S. Department of Labor, Occupational Safety and Health Administration, (OSHA):
    - a. Asbestos Regulations  
Title 29, Part 1910, of the Code of Federal Regulations.
    - b. Respiratory Protection  
Title 29, Part 1910, Section 134 of the Code of Federal Regulations.
    - c. Construction Industry  
Title 29, Part 1926, of the Code of Federal Regulations.
    - d. Access to Employee Exposure & Medical Records  
Title 29, Part 1910, Section 20 of the Code of Federal Regulations.
    - e. Hazard Communication  
Title 29, Part 1910, Section 1200 of the Code of Federal Regulations.
    - f. Specifications for Accident Prevention Signs and Tags  
Title 29, Part 1910, section 145 of the Code of Federal Regulations
  2. U.S. Environmental Protection Agency (EPA):
    - a. Asbestos Hazard Emergency Response Act (AHERA) Regulation Asbestos Containing Materials in Schools Final Rule & Notice Title 40, Part 763, Subpart E of the Code of Federal Regulations.
    - b. Worker Protection Rule  
40 CFR Part 763, Subpart G, CPTS 62044, FLR 2843-9  
Federal Register, Vol. 50, No. 134, 7/12/85, P28530-28540
    - c. Regulation for Asbestos  
Title 40, Part 61, Subpart A of the Code of Federal Regulations
    - d. National Emission Standard for Asbestos  
Title 40, Part 61, Subpart M (Revised Subpart B) of the Code of Federal Regulations
    - e. Resource Conservation and Recovery Act (RCRA) 1976, 1980 Hazardous and Solid Waste Amendments (HSWA) 1984 Subtitle D, Subtitle C
  3. U.S. Department of Transportation (DOT):
    - a. Hazardous Substances: Final Rule Regulation 49 CFR, Part 171 and 172.

- C. State Regulations: Those which govern asbestos abatement work or hauling and disposal of asbestos waste materials:
    - 1. New York State Department of Environmental Conservation (DEC) Regulations regarding waste collection registration. Title 6, Part 364 of the New York State Official Compilation of Codes, Rules and Regulations - 6NYCRR 364.
    - 2. New York State Right-To-Know Law
    - 3. New York State Department of Labor Asbestos Regulations Industrial Code Rule 56.
    - 4. New York State Department of Health, Title 10 Part 73 Asbestos Safety Program Requirements.
  - D. Standards: Those which govern asbestos abatement work or hauling and disposal of asbestos waste materials:
    - 1. American National Standards Institute (ANSI)
      - a. Fundamentals Governing the Design and Operation of Local Exhaust Systems Publication Z9.2-79
      - b. Practices for Respiratory Protection Publication Z88.2-80
  - E. Guidance Documents: Those that discuss asbestos abatement work or hauling, and disposal of asbestos waste materials are listed below only for the Abatement Contractor's information. These documents do not describe the work and are not a part of the work of this contract.
- EPA:
- 1. Guidance for Controlling Asbestos Containing Materials in Buildings (Purple Book) EPA560/5-85-024.
  - 2. Asbestos Waste Management Guidance EPA 530-SW-85-007.
  - 3. Patents and Royalties: The Abatement Contractor shall pay all royalties and/or license fees. The Abatement Contractor shall defend all suits and claims for infringement of any patent rights and save the Owner and Consultant harmless from loss including attorney fees on account thereof.

## 1.06 DEFINITIONS

As used in or in connection with these specifications the following are terms and definitions.

**Abatement** - Procedure to control release from asbestos material. This includes removal, encapsulation and enclosure.

**Aggressive sampling** - A method of sampling in which the person collecting the air sample creates activity by the use of mechanical equipment during the sampling period to stir up settled dust and simulate activity in that area of the building.

**AIHA** - The American Industrial Hygiene Association, 475 Wolf Ledges Parkway, Akron, Ohio 44311.

**Airlock** - A system for permitting entrance and exit while restricting air movement between a containment area and an uncontaminated area. It consists of two curtained doorways separated by a distance of at least three feet such that one passes through one doorway into the airlock, allowing the doorway sheeting to overlap and close off the opening before proceeding through the second doorway, thereby preventing flow-through contamination.

**Air sampling** - The process of measuring the content of a known volume of air collected during a specific period of time.

**Amended water** - Water to which a surfactant has been added.

**Approved asbestos safety program** - A program approved by the Commissioner of Health providing training in the various disciplines that may be involved in an asbestos project.

**Area air sampling** - Any form of air sampling or monitoring where the sampling device is placed at some stationary location.

**Asbestos** - Any naturally occurring hydrated mineral silicate separable into commercially usable fibers, including chrysotile (serpentine), amosite (cummingtonite-gunerite), crocidolite (riebeckite), tremolite, anthophyllite and actinolite.

**Asbestos contract** - An oral or written agreement contained in one or more documents for the performance of work on an asbestos project and includes all labor, goods and service.

**Asbestos handler** - An individual who installs, removes, applies, encapsulates, or encloses asbestos or asbestos material, or who disturbs friable asbestos. Only individuals certified by NYS Department of Labor shall be acceptable for work under this specification.

**Asbestos handling certificate** - A certificate issued by the Commissioner of Labor of the State of New York, to a person who has satisfactorily completed an approved asbestos safety program.

**Asbestos project** - Work undertaken by a contractor which involves the installation, removal, encapsulation, application or enclosure of any ACM or the disturbance of friable ACM.

**Asbestos Safety Technician (AST)** - Individual designated to represent the Consultant, perform third party monitoring and perform compliance monitoring at the job site during the asbestos project.

**Asbestos waste material** - Asbestos material or asbestos contaminated objects requiring disposal.

**Authorized visitor** - The building owner, his or her representative or any representative of a regulatory or other agency having jurisdiction over the project.

**Background level monitoring** - A method used to determine ambient airborne concentrations inside and outside of a building or structure prior to starting an abatement project.

**Building owner** - The person in whom legal title to the premises is vested unless the premises are held in land trust, in which instance Building Owner means the person in whom beneficial title is vested.

**Clean room** - An uncontaminated area or room that is a part of the personal decontamination enclosure with provisions for storage of persons' street clothes and protective equipment.

**Cleanup** - The utilization of HEPA vacuuming to control and eliminate accumulations of asbestos material and asbestos waste material.

**Clearance air monitoring** - The employment of aggressive sampling techniques with a volume of air collected to determine the airborne concentration of residual fibers upon conclusion of an asbestos abatement project.

**Commissioner** - Commissioner of the New York State Department of Labor.

**Contractor** - A company, unincorporated association, firm, partnership or corporation and any owner or operator thereof, which engages in an asbestos project or employs persons engaged in an asbestos project.

**Curtained doorway** - A device that consists of at least three overlapping sheets of plastic over an existing or temporarily framed doorway. One sheet shall be secured at the top and left side, the second sheet at the top and right side, and the third sheet at the top and the left side. All sheets shall have weights attached to the bottom to ensure that the sheets hang straight and maintain a seal over the doorway when not in use.

**Decontamination enclosure system** - A series of connected rooms, separated from the work area and from each other by air locks, for the decontamination of persons, materials, equipment, and authorized visitors.

**Encapsulant (sealant) or encapsulating agent** - A liquid material that can be applied to asbestos material and which prevents the release of asbestos from the material by creating a membrane over the surface.

**Enclosure** - The construction of airtight walls, ceilings and floors between the asbestos material and the facility environment, or around surfaces coated with asbestos materials, or any other appropriate procedure that prevents the release of asbestos materials.

**Equipment room** - A contaminated area or room that is part of the personal decontamination enclosure system with provisions for the storage of contaminated clothing and equipment.

**Fixed object** - A unit of equipment, furniture or other fixture in the work area which cannot be readily removed from the work area.

**Friable Asbestos Material** - That condition of crumbled, pulverized, powdered, crushed or exposed asbestos capable of being released into the air by hand pressure.

**Friable material containment** - The encapsulation or enclosure of any friable asbestos material.

**Glovebag technique** - A method for removing asbestos material from heating, ventilating, and air conditioning (HVAC) ducts, piping runs, valves, joints, elbows, and other nonplanar surfaces in a noncontained work area. The glovebag assembly is a manufactured device consisting of a glovebag constructed of at least six mil transparent plastic, two inward-projecting longsleeve gloves, which may contain an inward projecting waterwand sleeve, an internal tool pouch, and an attached, labeled receptacle or portion for asbestos waste. The glovebag is constructed and installed in such a manner that it surrounds the object or area to be decontaminated and to contain all asbestos fibers released during the abatement process.

**HEPA filter** - A high efficiency particulate air filter capable of trapping and retaining 99.97 percent of particulate greater than 0.3 microns equivalent aerodynamic diameter.

**HEPA vacuum equipment** - Vacuuming equipment with a high efficiency particulate air filtration system.

**Holding area** - A chamber in the waste decontamination enclosure located between the washroom and an adjacent uncontaminated area.

**Homogeneous work area** - A site within the abatement work area that contains one type of asbestos material and where one type of abatement is used.

**Large asbestos project** - An asbestos project involving the installation, removal, disturbance, enclosure, or encapsulation of 160 square feet or more of asbestos or asbestos material or 260 linear feet or more of asbestos or asbestos material.

**Minor asbestos project** - An asbestos project involving the installation, removal, disturbance, enclosure, or encapsulation of 10 square feet or less of asbestos or asbestos material, or 25 linear feet or less of asbestos or asbestos material.

**Movable object** - A unit of equipment, furniture or fixture in the work area that can be readily removed from the work area.

**Negative air pressure equipment** - A local exhaust system equipped with HEPA filtration. The system shall be capable of creating and maintaining a negative pressure differential between the outside and the inside of the work area.

**Non-asbestos material** - Any material containing one percent or less asbestos by weight. Occupied area - Any frequented portion of the work site where abatement is not taking place. Outside air - The air outside the building or structure.

**Personal air monitoring** - A method used to determine an individual's exposure to airborne contaminants. The sample is collected outside the respirator in the person's breathing zone.

**Plasticize** - To cover floors, walls, ceilings and other surfaces with 6 mil fire retardant plastic sheeting as herein specified.

**Project** - Any form of work performed in connection with the abatement of asbestos or alteration, renovation, modification or demolition of a building or structure that may disturb asbestos or asbestos material.

**Removal** - The stripping of any asbestos material.

**Repair** - Corrective action using required work practices to control fiber release from damaged areas.

**Respiratory protection** - Respiratory protection required of licensed asbestos workers and authorized visitors in accordance with the applicable laws.

**Satisfactory clearance air monitoring results** - For all post- abatement samples, airborne concentrations of total fibers that are less than 0.01 fibers per cubic centimeter or background levels, whichever are greater, using phase contrast microscopy (PCM).

**Shower room** - A room between the clean room and the equipment room in the personal decontamination enclosure with hot and cold running water controllable at the top and arranged for complete showering during decontamination.

**Small asbestos project** - An asbestos project involving the installation, removal, disturbances, enclosure, or encapsulation of more than 10 and less than 160 square feet of asbestos or asbestos material of more than 25 and less than 260 linear feet of asbestos or asbestos material.

**Staging area** - The area near the waste transfer airlock where containerized asbestos waste has been placed prior to removal from the work area.

**Surfactant** - A chemical wetting agent added to water to improve its penetration.

Visible emissions - An emission of particulate material that can be seen without the aid of instruments.

**Washroom** - A room between the work area and the holding area in the waste decontamination enclosure system, where equipment and waste containers are wet cleaned and/or HEPA vacuumed.

**Waste decontamination enclosure system** - An area, consisting of a washroom and a holding area, designated for the controlled transfer of materials and equipment.

**Wet cleaning** - The process of eliminating asbestos contamination from surfaces, equipment or other objects by using cloths, mops, or other cleaning tools.

**Work area** - Designated rooms, spaces, or areas where asbestos abatement takes place.

**Work site** - Premises where asbestos abatement is taking place.

**Work Surface** - Substrate surface from which asbestos-containing material has been removed.

#### 1.07 UTILITIES, SERVICE AND TEMPORARY FACILITIES

- A. The Owner shall make available to the Abatement Contractor all reasonable amounts of water and electrical power at no charge.
- B. The Abatement Contractor shall provide, at his own expense, all electrical, water, and waste connections, extensions, and construction materials, supplies, etc. All connections must be approved in advance by the Owner and all work relative to the utilities must be in accordance with the applicable building codes.
- C. The Abatement Contractor shall provide scaffolding, ladders and staging, etc. as necessary to accomplish the work of this contract. The type, erection and use of all scaffolding, ladders and staging, etc. shall comply with all applicable OSHA provisions.
- D. All connections to the Owner's water system shall include reduced pressure backflow protection or double check and double gate valves. Valves shall be temperature and pressure rated for operation of the temperatures and pressures encountered. After completion of use, connections and fittings shall be removed without damage or alteration to existing water piping and equipment. Leaking or dripping valves shall be piped to the nearest drain or located over an existing sink or grade where water will not damage existing finishes or equipment.
- E. The Abatement Contractor shall use only heavy-duty abrasion resistant hoses with a pressure rating greater than the maximum pressure of the water distribution system to provide water to each work area and to each decontamination unit. Provide fittings as required to allow for connection to existing wall hydrants or spouts, as well as temporary water heating equipment, branch piping, showers, shut-off nozzles and equipment. All water must be shut off at the end of each shift.
- F. The Abatement Contractor shall provide service to decontamination unit electrical subpanel with minimum 60-amp, 2 pole circuit breaker or fused disconnect and ground-fault circuit interrupters (GFCI), reset button and pilot light, connected to the building's main distribution panel. Subpanel and disconnect shall be sized and equipped to accommodate all electrical equipment required for completion of the work. This electrical subpanel shall be used for hot water heater, PAPR battery recharging and air sampling pumps.
- G. The Abatement Contractor shall provide UL rated 40-gallon electric hot water heater to supply hot water for the decontamination unit shower. Activate from 30-amp circuit breaker on the electrical subpanel located within the decontamination unit. Provide with relief valve compatible with water heater operation, relief valve down to drip pan on floor with type L copper. Wiring of the hot water heater shall follow NEMA, NEC, and UL standards.
- H. The Abatement Contractor shall provide identification warning signs at power outlets, which are other than 110-120-volt power. Provide polarized outlets for plug-in type outlets, to prevent insertion of 110-120 plugs into higher voltage outlets. Dry transformers shall be provided where required to provide voltages necessary for work operations. All outlets or power supplies shall be protected by ground fault circuit interrupter (GFCI) at the power source.
- I. The Abatement Contractor shall use only grounded extension cords; use "hard-service" cords where exposed to abrasion and traffic. Use single lengths or use waterproof connectors to connect separate lengths of electric cords, if single lengths will not reach

areas of work.

- J. The Abatement Contractor shall provide general service incandescent lamps of wattage indicated or required for adequate illumination; Protect lamps with guard cages or tempered glass enclosures; Provide exterior fixtures where fixtures are exposed to moisture.
- K. The Abatement Contractor shall provide temporary heat or air conditioning as necessary to maintain comfortable working temperatures inside and immediately outside the work areas. Heating and A/C equipment shall have been tested and labeled by UL, FM or another recognized trade association related to the fuel being used. Fuel burning heaters shall not be used inside containment areas. The Contractor shall also provide a comfortable working environment for occupied areas that are impacted by the asbestos removal.
- L. The Abatement Contractor shall comply with recommendations of the NFPA standard in regard to the use and application of fire extinguishers. Locate fire extinguishers where they are most convenient and effective for their intended purpose but provide not less than one extinguisher in each work area, equipment room, clean room and outside the work area.

#### **1.08 REMOVAL OF FIXTURES**

- A. In locations where the Abatement Contractor is directed to dispose of fixtures, he shall either decontaminate the fixtures and dispose of them as non-asbestos containing materials or he shall place them in an appropriate container and dispose of them as asbestos containing material.
- B. In locations where the Abatement Contractor is directed to remove and reinstall fixtures, the fixtures shall be removed, decontaminated, labeled, protected with plastic and stored by the contractor in a location as directed by the Owner.
- C. Upon completion of the asbestos removal and upon receiving satisfactory clearance air monitoring results, all items to be replaced shall be restored to their original location and reinstalled by the Abatement Contractor.

### **PART 2 – PRODUCTS**

#### **2.01 MATERIALS AND EQUIPMENT**

- A. GENERAL REQUIREMENTS
  - 1. Materials shall be stored off the ground, away from wet or damp surfaces and under protective cover to prevent damage or contamination.
  - 2. Damaged or deteriorating materials shall not be used and shall be removed from the premises.
  - 3. Power tools used to drill, cut into, or otherwise disturb asbestos material shall be equipped with HEPA filtered local exhaust ventilation.
  - 4. The Abatement Contractor shall make available to authorized visitors, ladders and/or scaffolds of sufficient dimension and quantity so that all work surfaces can be easily and safely reached for inspection. Scaffold joints and ends shall be sealed with tape to prevent incursion of asbestos. Scaffolds and ladders shall comply with all applicable codes.
- B. PLASTIC BARRIERS (POLYETHYLENE)
  - 1. In sizes and shapes to minimize the number of joints.
    - a. Six mil. (.006") fire-retardant for vertical protection (walls, entrances and openings).
    - b. Six mil. (.006") fire-retardant for horizontal protection (fixed equipment) and heating grilles.
    - c. Six mil. (.006") reinforced fire-retardant for floors of decon units.
  - 2. Provide two (2) layers over all roof, wall and ceiling openings. Floor penetrations shall be sealed with a rigid material prior to plasticizing to prevent tripping and fall hazards. All seams within a layer shall be separated by a minimum distance of six feet and sealed airtight. All seams between layers shall be staggered.
  - 3. Barrier Attachment - Commercially available duct tape (fabric or paper) and spray-on adhesive. Duct tape shall be capable of sealing joints of adjacent sheets of plastic, facilitating attachment of plastic sheets to finished or unfinished surfaces of dissimilar materials and adhering under both dry and wet conditions.
- C. SIGNS

1. Danger signs shall be provided and shall conform to 29 CFR 1926.1101 and be 14" x 20". These signs shall bear the following information:

**DANGER  
ASBESTOS  
CANCER AND LUNG DISEASE HAZARD  
RESPIRATORS AND PROTECTIVE  
CLOTHING  
ARE REQUIRED IN THIS AREA**

**D. DANGER LABELS AND TAPE**

1. Labels shall be affixed to any asbestos contaminated material in accordance with the requirements of 29 CFR 1910.1200 (f) of OSHA's Hazard Communication Standard, and shall contain the following information:

**DANGER  
CONTAINS ASBESTOS FIBERS  
AVOID BREATHING DUST  
CANCER AND LUNG DISEASE HAZARD**

2. A label shall be affixed on each container of asbestos waste in accordance with the requirements of 49 CFR Parts 171 and 172, Hazardous Substances; Final Rule (U.S. Department of Transportation), and shall contain the following information:

**RQ HAZARDOUS SUBSTANCE  
SOLID, NOS, ORM-E, NA 9188  
(ASBESTOS)**

3. A label shall be affixed on each container of asbestos waste in accordance with the requirements of 40 CFR Part 61.150, NESHAP; Asbestos; Final Rule (USEPA) and shall contain the name of the waste generator and the location at which the waste was generated.

NOTE: All containers marked as above (1,2 and 3) shall be disposed of as asbestos waste.

4. Provide 3" red barrier tape printed with black lettered "DANGER ASBESTOS REMOVAL". Locate barrier tape across all corridors, entrances and access routes to asbestos work area.

**E. PROTECTIVE EQUIPMENT**

1. Respiratory Requirements

- a. Where fiber levels permit, and in compliance with regulatory requirements, Powered Air Purifying Respirators are the minimum allowable respiratory protection permitted to be utilized during removal operations.
- b. Where not in violation of NIOSH, OSHA, and any other regulatory requirements, the Abatement Contractor shall provide the following minimum respiratory protection to the maximum use concentrations indicated:

MSHA/NIOSH Approved <u>Respiratory Protection</u> Half-Mask Air Purifying with HEPA Filters	Maximum Use Concentration 10x PEL
Full-Facepiece Air Purifying HEPA Filters and Quantitative Fit Test	10x PEL
Powered Air Purifying (PAPR), Loose fitting Helmet or Hood, HEPA Filter	25x PEL
Powered Air Purifying (PAPR), Full Facepiece, HEPA Filter	50x PEL

- |   |           |
|---|-----------|
| Supplied Air, Continuous Flow<br>Loose fitting Helmet or Hood   | 25x PEL   |
| Supplied Air, Continuous Flow<br>Full Facepiece, HEPA Filter  | 50x PEL   |
| Full Facepiece-Supplied Air<br>Pressure Demand, HEPA Filter   | 100x PEL  |
| Full Facepiece-Supplied Air<br>Pressure Demand, with Aux. SCBA,<br>Pressure Demand or Continuous Flow | >100x PEL |
2. Disposable Clothing - "Tyvek" manufactured by Dupont or approved equal.
  3. NIOSH approved safety goggles to protect eyes.
  4. Polyethylene bags, 6 mil. (.006") thick (use double bags).  
NOTE: Workers must always wear disposable coveralls and respirator masks while in the work area. Contaminated coveralls or equipment must be left in work area and not worn into other parts of the building.
- F. TOOLS AND EQUIPMENT
1. Airless Sprayer - An airless sprayer, suitable for application of encapsulating material, shall be used.
  2. Scaffolding - Scaffolding, as required to accomplish the specified work, shall meet all applicable safety regulations.
  3. Transportation Equipment - Transportation equipment, as required, shall be suitable for loading, temporary storage, transport and unloading of contaminated waste without exposure to persons or property. Watertight, hard wall containers shall be provided to retain and dispose of any asbestos waste material with sharp-edged components that may tear plastic bags or sheeting. The containers shall be marked with danger labels.
  4. Surfactant - Wetting Agents - "Asbestos-Wet" - Aquatrols Corp. of America or approved equal and shall be non-carcinogenic.
  5. Portable (negative air pressure) asbestos filtration system - by Micro-Trap or approved equal.
  6. Vacuum, HEPA type equal to "Nilfisk" #GA73, or "Pullman/Holt" #75 ASA.
  7. Amended Water Sprayer - The water sprayer shall be an airless or other low-pressure sprayer for amended water application.
  8. Other Tools and Equipment - The Abatement Contractor shall provide other suitable tools for the stripping, removal, encapsulation, and disposal activities including but not limited to: hand-held scrapers, nylon brushes, sponges, rounded edge shovels, brooms, and carts.

## **PART 3 – EXECUTION**

### **3.01 PRE-ABATEMENT WORK AREA PREPARATION**

- A. The work area shall be vacated by the occupants prior to work area preparation and not reoccupied until satisfactory clearance air monitoring results have been achieved.
  1. Caution signs shall be posted at all locations and approaches to a location where airborne concentrations of asbestos may exceed ambient background levels. Signs shall be posted that permit a person to read the sign and take the necessary protective measures to avoid exposure.
- B. Shut down and lock out electric power to all work areas. The Abatement Contractor shall provide temporary power and lighting and ensure safe installation of temporary power sources and equipment used where high humidity and/or water shall be sprayed in accordance with all applicable codes. All power to work areas shall be brought in from outside the area through a ground-fault interrupter at the source.
- C. Isolate the work area HVAC system.
- D. The personnel decontamination enclosure system shall be installed or constructed prior to preparatory work in the work area and in particular before the disturbance of asbestos



material. The waste decontamination enclosure system shall be installed or constructed prior to commencement of abatement activities.

- E. Movable objects within the work area shall be pre-cleaned using HEPA filtered vacuum equipment and/or wet cleaning and such objects shall be removed from the work area to an uncontaminated location. If disposed of as asbestos waste material, cleaning is not required.
- F. Fixed objects and other items, which are to remain within the work area, shall be pre-cleaned using HEPA filtered vacuum equipment and/or wet cleaning. Such objects shall be enclosed with two layers of at least six mil plastic sheeting and sealed with tape.
- G. The work area shall be pre-cleaned using HEPA filtered vacuum equipment and/or wet cleaning. Methods that raise dust, such as dry sweeping or vacuuming with equipment not equipped with HEPA filters, shall be prohibited. Asbestos material shall not be disturbed during pre-cleaning.
- H. Isolation barriers that seal off all openings, including windows, corridors, doorways, ducts, and any other penetrations of the work area, shall be constructed using two layers of at least six mil fire-retardant plastic sheeting sealed with tape. Also, all seams in mechanical system components that pass through the work area shall be sealed. Doorways and corridors, which shall not be used for passage during work, shall also be sealed.
- I. Removal of mounted objects. After isolation barriers are in place, objects such as light fixtures, electrical track, alarm systems, ventilation equipment and other items not previously sealed, shall be double sealed with six mil fire-retardant plastic sheeting. Localized HEPA filtered vacuum equipment shall be used during fixture removal to reduce asbestos dispersal.
- J. Individual roof and floor drains shall be sealed watertight using two layers of 6-mil fire-retardant plastic sheeting and tape prior to plasticizing. Openings in floor shall be fully covered with plywood sheeting secured to the floor in such a way as to minimize a tripping hazard prior to plasticizing.
- K. Emergency and fire exits from the work area shall be maintained or alternate exits shall be established according to all applicable codes.
- L. Adequate toilet facilities shall be supplied by the Abatement Contractor and shall be located either in the clean area of the personnel decontamination enclosure or shall be readily accessible to the personnel decontamination enclosure.

### **3.02 LARGE ASBESTOS PROJECT PERSONNEL DECONTAMINATION ENCLOSURE SYSTEM (ICR 56- 7.5)**

- A. The personnel decontamination enclosure shall be constructed prior to preparatory work in the work area and in particular before the disturbance of asbestos material.
  - 1. Construction and use of personnel decontamination enclosure systems shall be in accordance with ICR- 56 and any Applicable or Site-Specific Variances utilized on this project. Such systems may consist of existing rooms outside of the work area, if the layout is appropriate, that can be enclosed is plastic sheeting and are accessible from the work area. When this situation does not exist, enclosure systems may be constructed out of metal, wood or plastic support.
  - 2. The personnel decontamination enclosure system shall consist of a clean room, a shower room, and an equipment room, in series, separated from each other and from the work area by three airlocks.
  - 3. There shall be one shower per six full shift abatement persons calculated on the basis of the largest shift.
  - 4. The personnel decontamination enclosure system shall be fully framed, sheathed for safety and constructed to prevent unauthorized entry.
  - 5. Personnel decontamination enclosure systems constructed at the work site shall utilize at least six mil fire-retardant opaque plastic sheeting. At least two layers of six mil fire-retardant reinforced plastic sheeting shall be used for the flooring of this area.
  - 6. All prefabricated decontamination units shall be completely decontaminated and sealed prior to separation and removal from the work area. Mobile decontamination units shall remain in place until satisfactory clearance results have been attained.
  - 7. The clean room shall be sized to accommodate all authorized persons. Benches, lockers and hooks shall be provided for street clothes. Shelves for storing respirators

shall also be provided. Clean clothing, replacement filters for respirators, towels and other necessary items shall be provided. The clean room shall not be used for the storage of tools, equipment or materials. It shall not be used for office space. A lockable door shall be provided to permit access to the clean room from outside the work area or enclosure. It shall be used to secure the work area and decontamination enclosure during off-shift hours.

8. The shower room shall contain one or more showers. Each shower head shall be supplied with hot and cold water adjustable at the tap. The shower enclosure shall be constructed to ensure against leakage of any kind. Uncontaminated soap, shampoo and towels shall be available at all times. Shower water shall be drained, collected and filtered through a system with at least 5.0 micron particle size collection capability. A system containing a series of several filters with progressively smaller pore sizes shall be used to avoid rapid clogging of the filtration system by large particles. Filtered wastewater shall be discharged in accordance with applicable codes. Contaminated filters shall be disposed of as asbestos waste. The shower room shall be constructed in such way that travel through the decontamination unit shall be through the shower.
9. The equipment room shall be used for the storage of equipment and tools after decontamination using a HEPA filtered vacuum and/or wet cleaning. A one day supply of replacement filters, in sealed containers, for HEPA vacuums and negative pressure ventilation equipment, extra tools, containers of surfactant and other materials and equipment that may be required during the abatement project may also be stored here. A walk-off pan filled with water shall be located in the work area just outside the equipment room for persons to clean foot covering when leaving the work area. A drum lined with a labeled, at least six mil plastic bag is required for collection of clothing and shall be located in this room. Contaminated footwear and work clothes shall be stored in this area.

### **3.03 WASTE DECONTAMINATION ENCLOSURE SYSTEM (ICR 56-7.5)**

#### **A. General Requirements**

1. A waste decontamination enclosure system shall consist of the following:
  - a. A washroom/cleanup room shall be constructed with an airlock doorway to the work area and another airlock doorway to the holding area.
  - b. The holding area shall be constructed with an airlock doorway to the washroom/cleanup room and another lockable door to the outside.
2. Where there is only one egress from the work area, the holding area of the waste decontamination enclosure system may branch off from the equipment decontamination room, which doubles as a waste washroom, of the personnel decontamination enclosure.
3. The waste washroom shall be equipped with a drain installed to collect water and deliver it to the shower drain where it shall be filtered through a system with at least 5.0 micron particle size collection capability. A system containing a series of several filters with progressively smaller pore sizes shall be used to avoid rapid clogging of the filtration system by large particles. Filtered wastewater shall be discharged in accordance with applicable codes. Contaminated filters shall be disposed of as asbestos waste.
4. The waste washroom shall be constructed in such a way that travel through the rooms shall be through the waste washroom

### **3.04 WORK AREA ENTRY AND EXIT PROCEDURES**

- #### **A. The following procedures shall be followed throughout the asbestos abatement project until satisfactory clearance air monitoring results have been achieved:**
1. All persons shall enter and exit the work area through the personnel decontamination enclosure system.
  2. All persons who enter the work area or an enclosure shall sign the entry/exit log, located in the clean room, upon every entry and exit.
  3. All persons, before entering the work area, or an enclosure shall read and be familiar with all posted regulations, personal protection requirements, including work area entry and exit procedures, and emergency procedures. The entry/exit log headings shall indicate, and the signatures shall be used to acknowledge, that these have been reviewed and understood by all persons prior to entry.

4. All persons shall proceed first to the clean room, remove all street clothing, store these items in clean sealable plastic bags or lockers and don coveralls, head covering, foot covering and gloves. All persons shall also don NIOSH approved respiratory protection. Clean respirators and protective clothing shall be utilized, by each person, for each separate entry into the work area. Respirators shall be inspected prior to each use and tested for proper seal using quantitative or qualitative fit checks.
5. Persons wearing designated personal protective equipment shall proceed from the clean room through the shower room to the equipment room, where necessary tools are collected and any additional clothing shall be donned, before entry into the work area.
6. Before leaving the work area, all persons shall remove gross contamination from the outside of respirators and protective clothing by brushing, wet cleaning, and/or HEPA vacuuming.
7. Persons shall proceed to the equipment room where all coveralls, head covering, foot covering and gloves shall be removed. Disposable clothing shall be deposited into labeled containers for disposal. Reusable contaminated clothing, footwear, head gear and gloves shall be stored in the equipment room when not being used in the work area.
8. Still wearing respirators, persons shall proceed to the shower area, clean the outside of the respirator and the exposed face area under running water prior to removal of the respirator, and then fully and vigorously shower and shampoo to remove residual asbestos contamination. Respirators shall be washed thoroughly with soap and water. Some types of respirators will require slight modification of these procedures. An airline respirator with HEPA filtered disconnect protection shall be disconnected in the equipment room and worn into the shower. A powered air-purifying respirator facepiece shall be disconnected from the filter/power pack assembly prior to entering the shower.
9. After showering and drying, all persons shall proceed to the clean room and don clean personal protective equipment if returning to the work area or street clothing if exiting the enclosure.

### **3.05 EQUIPMENT AND WASTE CONTAINER DECONTAMINATION & REMOVAL PROCEDURES**

- A. The following procedures shall be followed throughout the asbestos abatement project until satisfactory clearance air monitoring results have been achieved.
  1. External surfaces of contaminated containers and equipment shall be cleaned 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. These work area persons shall not enter the airlock.
  2. These contaminated items shall be removed from the airlock by persons stationed in the washroom during waste removal operations. These washroom persons shall remove gross contamination from the exterior of their respirators and protective clothing by brushing, HEPA vacuuming and/or wet cleaning.
  3. Once in the waste decontamination enclosure system, external surfaces of contaminated containers and equipment shall be cleaned a second time by wet cleaning.
  4. 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 and sealed airtight.
  5. The clean recontainerized items shall be moved into the airlock that leads to the holding area. The washroom persons shall not enter this airlock or the work area until waste removal is finished for that period.
  6. Containers and equipment shall be moved from the airlock and into the holding area by persons dressed in clean personal protective equipment, who have entered from uncontaminated areas.
  7. The cleaned containers of asbestos material and equipment shall be placed in water tight carts with doors or tops that shall be closed and secured. These carts shall be held in the holding area pending removal. The carts shall be wet cleaned and/or HEPA vacuumed at least once each day.
  8. The exit from the decontamination enclosure system shall be secured to prevent unauthorized entry.

9. Where the waste removal enclosure is part of the personnel decontamination enclosure, waste removal shall not occur during shift changes or when otherwise occupied. Precautions shall be taken to prevent short circuiting and cycling of air outward through the shower and clean room.
10. Containers labeled with Asbestos hazard warnings shall not be used to dispose of non asbestos waste.

### **3.06 ENGINEERING CONTROLS**

#### **A. Ventilation**

1. The Abatement Contractor shall employ HEPA equipped vacuums or negative air pressure equipment for ventilation as required.
2. All negative air pressure equipment ventilation units shall be equipped with HEPA filtration. The Contractor shall provide a manufacturer's test certificate for each unit documenting the capability of trapping and retaining 99.97 percent of asbestos fibers greater than 0.3 microns equivalent aerodynamic diameter.
3. A power supply shall be available to satisfy the requirements of the total of all ventilating units.
4. On electric power failure, abatement shall stop immediately and shall not resume until power is restored and exhaust units are operating fully. On extended power failure, longer than one hour, the decontamination facilities, after the evacuation of all persons from the work area, shall be sealed airtight.
5. If extending the exhaust of the ventilation units 50 feet from the building would result in an exhaust location either in the road, blocking driveway access to the facility or within 50 feet of other buildings, a second unit will be run in series with the primary unit.

### **3.07 MAINTENANCE OF DECONTAMINATION ENCLOSURE SYSTEMS AND WORK AREA BARRIERS**

#### **A. GENERAL REQUIREMENTS**

1. The Consultant must review and approve installation before commencement of work. Upon completion of the construction of all plastic barriers and decontamination system enclosures and prior to beginning actual abatement activities.
2. All plastic barriers inside the work area, in the personnel decontamination enclosure system, in the waste decontamination enclosure system and at partitions constructed to isolate the work area from occupied areas, shall be inspected by the asbestos supervisor at least twice daily. The barriers shall be inspected before the start of and following the completion of the day's abatement activities. Inspections and observations shall be documented in the project log.
3. Damage and defects in the barriers and/or enclosure systems shall be repaired immediately upon discovery and prior to resumption of abatement activities.
4. At any time during the abatement activities, if visible emissions are observed outside of the work area or if damage occurs to the barriers, work shall be stopped, repairs made and visible residue immediately cleaned up using HEPA vacuuming methods prior to the resumption of abatement activities.
5. The Abatement Contractor shall HEPA vacuum and/or wet clean the waste decontamination enclosure system and the personnel decontamination enclosure system at the end of each day of abatement activities.

### **3.08 HANDLING AND REMOVAL PROCEDURES**

The Abatement Contractor may utilize existing provisions of ICR-56, Applicable Variances or a Site Specific Variance, approved by the Owner's Consultant, to permit the conduct of this work.

### **3.09 ABATEMENT PROCEDURES**

#### **A. AIR SAMPLING - By Owner**

1. Air sampling and analysis shall be conducted according to the requirements of Subpart 56-4 before the start, during and after the completion of the asbestos removal project.
2. In addition to the requirements of Subpart 56-4, air monitoring shall be conducted in accordance with any approved job specific variance(s) or applicable variance utilized.
3. Clearance samples may be analyzed using PCM to maintain compliance with ICR-56.
4. If applicable, clearance samples will be analyzed using TEM to maintain compliance with ICR-56 and 40 CFR 763.90[i].

- B. The provisions of the Applicable Variances or a Job Specific Variance shall apply only in those areas where approval has been granted by the NYS DOL and the Contractor has obtained concurrence from the Owner's Consultant. All other applicable provisions of Industrial Code Rule 56-1 through 56-12 shall be complied.
- C. A copy of the NYS DOL Job Specific or Applicable Variance, if applicable, shall be conspicuously posted at the work area(s).
- D. The Abatement Contractor shall construct a decontamination unit at the work site. The Abatement Contractor shall, as a minimum, comply with the requirements of 29 CFR 1926.1101(j); Hygiene facilities and practices for employees.

### **3.10 ENCAPSULATION PROCEDURES**

The following procedures shall be followed to seal in non-visible residue, after obtaining satisfactory clearance air monitoring results, while conducting lockdown encapsulation on any surfaces which were the subject of removal or other remediation activities:

- A. Only encapsulants rated as acceptable or marginally acceptable on the basis of Battelle Columbus Laboratory test procedures and rating requirements developed under the 1978 USEPA contract shall be used for lockdown encapsulation.
- B. Sealants considered for use in encapsulation shall first be tested to ensure that the sealant is adequate for its intended use. A section of the work surface shall be evaluated following this initial test application of the sealant to quantitatively determine the sealant's effectiveness in terms of penetrating and locking down the asbestos fibers. The American Society of Testing and Materials (ASTM) Committee E06.21.06E on Encapsulation of Building Materials has developed a guidance document to assist in the selection of an encapsulant.
- C. The encapsulant solvent or vehicle shall not contain a volatile hydrocarbon.
- D. Encapsulants shall be applied using airless spray equipment.
  - 1. Spraying is to occur at the lowest pressure range possible to minimize fiber release from encapsulant impact at the surface. It shall be applied with a consistent horizontal or vertical motion.
- E. Encapsulation shall be utilized as a surface sealant once all asbestos containing materials have been removed in a work area. In no event shall encapsulant be applied to any surface that was the subject of removal or other remediation activities prior to obtaining satisfactory clearance air monitoring.

### **3.11 CLEANUP PROCEDURES**

- A. The following cleanup procedures shall be required.
  - 1. Cleanup of accumulations of loose asbestos material shall be performed whenever enough loose asbestos materials have been removed to fill a single leak tight container of the type commensurate with the material properties. In no case shall cleanup be performed less than once prior to the close of each working day. Asbestos material shall be kept wet until cleaned up.
  - 2. Accumulations of dust shall be cleaned off all surfaces on a daily basis using HEPA vacuum cleaning methods.
  - 3. Decontamination enclosures shall be HEPA vacuumed at the end of each shift.
  - 4. Accumulations of asbestos waste material shall be containerized utilizing HEPA vacuums or rubber or plastic dust pans, squeegees or shovels. Metal shovels shall not be used to pick up or move waste.
  - 5. Excessive water accumulation or flooding in the area shall require work to stop until the water is collected and disposed of properly.
- B. The following cleanup procedures shall be required after completion of all removal activities.
  - 1. All accumulations of asbestos waste material shall be containerized utilizing HEPA vacuums or rubber or plastic dust pan, squeegees or shovels. Metal shovels shall not be used to pick up or move waste. HEPA vacuums shall be used to clean all surfaces after gross cleanup.
  - 2. Cleaning. All surfaces in the work area shall be HEPA vacuumed. To pick up excess liquid and wet debris, a wet purpose shop vacuum may be used and shall be decontaminated prior to removal from the work area.

3. Windows, doors, HVAC system vents and all other openings shall remain sealed. Decontamination enclosure systems shall remain in place and be utilized.
4. All containerized waste shall be removed from the work area and the holding area.
5. All tools and equipment shall be decontaminated and removed from the work area.
6. A final visual inspection and clearance air monitoring, as per the schedule for air sampling and analysis, shall be conducted.
7. The isolation barriers and decontamination unit shall be removed only after satisfactory clearance air monitoring results have been achieved.

### **3.12 SAFETY MONITORING – CONSULTANT:**

The Consultant will designate an Asbestos Safety Technician (AST) to represent the Owner during the removal program. The AST must be on the job site at all times during abatement work. Absolutely no abatement or preparation work will occur without the presence of the AST.

- A. The AST will conduct four (4) milestone inspections.
  1. Pre-commencement inspection shall be conducted as follows:
    - a. Notification in writing to the Consultant shall be made by the Abatement Contractor to request a pre-commencement inspection at least 48 hours in advance of the desired date of inspection. This inspection shall be requested prior to beginning preparatory work in another work area.
  2. The AST shall ensure that:
    - 1) The job site is properly prepared and that all containment measures are in place;
    - 2) The designated supervisor shall present to the inspector a valid supervisor's license issued by the New York Department of Labor;
    - 3) All workers shall present to the inspector a valid handler's license issued by the New York Department of Labor;
    - 4) Measures for the disposal of removed asbestos material are in place and shall conform to the adopted standards;
    - 5) The Abatement Contractor has a list of emergency telephone numbers at the job site which shall include the monitoring firm employed by the Owner and telephone numbers for fire, police, emergency squad, local hospital and health officer.
  3. Progress inspection shall be conducted as follows:
    - a. Primary responsibility for ensuring that the abatement work progresses in accordance with these technical specifications and regulatory requirements rests with the Abatement Contractor. The AST shall continuously be present to observe the progress of work and perform required tests.
    - b. If the AST observes irregularities at any time, he shall direct such corrective action as may be necessary. If the Abatement Contractor fails to take the corrective action required, or if the Abatement Contractor or any of their employees habitually and/or excessively violate the requirements of any regulation, then the AST shall inform the Owner who shall issue a Stop Work Order to the Abatement Contractor and have the work site secured until all violations are abated.
  4. Clean-up inspections shall be conducted as follows:
    - a. Notice for clean-up inspection shall be requested by the Abatement Contractor at least 24 hours in advance of the desired date of inspection;
    - b. The clean-up inspection shall be conducted prior to the removal of any isolation or critical barriers and before final air clearance monitoring;
    - c. The AST shall ensure that:
      - 1) The work site has been properly cleaned and is free of visible asbestos containing material and debris.
      - 2) All removed asbestos has been properly placed in a locked secure container outside of the work area.
    - d. If all is in order, the AST shall issue a written notice of authorization to remove surface barriers from the work area. All isolation barriers shall remain in place

- until satisfactory clearance air sampling has been completed.
5. Clearance Visual Inspection shall be conducted after the removal of non-critical plastic sheeting. The AST shall insure that:
    - a. The work area is free of all visible asbestos or suspect asbestos debris and residue.
    - b. All waste has been properly bagged and removed from the work area.
    - c. Should clearance visual inspection identify residual debris, as determined by the AST, the Abatement Contractor is responsible for recleaning the area at his own cost and shall bear all costs of reinspection until acceptable levels are achieved.
  - B. The Abatement Contractor shall be required to receive written approval before proceeding after each milestone inspection.

### **3.13 PERSONNEL AIR MONITORING – CONTRACTOR (29 CFR 1926.1101)**

- A. Personnel air monitoring shall be provided to determine both short-term (STEL) and full shift during when abatement activities occur. Personnel sampling shall be performed in each work area in order to accurately determine the concentrations of airborne asbestos to which workers may be exposed.
- B. The Abatement Contractor shall have a qualified "Competent Person" (as specified in 29 CFR 1926 OSHA) to conduct personnel air monitoring.
- C. The laboratory performing the air sample analysis shall be certified by NYS DOH ELAP and approved by the consultant.
- D. Personnel air monitoring test results for OSHA Compliance. Results shall be posted at the work site within 24 hours of testing and copies supplied to the Owner within five (5) days of testing. Abnormalities shall be supplied to the Owner immediately.

### **3.14 CLEARANCE AIR MONITORING**

- A. Air samples will be collected in and around the work areas at the completion of abatement activities.
- B. Clearance samples may be analyzed using PCM to maintain compliance with ICR-56.
- C. If applicable, clearance samples will be analyzed using TEM to maintain compliance with ICR-56 and 40 CFR part 763 "Asbestos-Containing Materials in Schools; Final Rule and Notice" section 763.90.
- D. \*\*\*RETESTING\*\*\*  
  
Should clearance air monitoring yield fiber concentrations above the "Clearance" criteria of either 0.01 fibers per CC and/or background levels (PCM) –OR- seventy (70) structures per square millimeter (TEM/AHERA), the Abatement Contractor is responsible for re-cleaning the area at his own cost and shall bear all costs associated with the retesting of the work area(s) including monitoring labor, sampling, analysis, etc. until such levels are achieved.

### **3.15 RESPIRATORY PROTECTION REQUIREMENT**

- A. Respiratory protection shall be worn by all individuals inside the work area from the initiation of the asbestos project until all areas have successfully passed clearance air monitoring in accordance with these specifications. The Abatement Contractor shall keep available at all times two PAPR's with new filters and charged batteries for use by authorized visitors.
- B. All respiratory protection shall be MSHA/NIOSH approved in accordance with the provisions of 30 CFR Part II. All respiratory protection shall be provided by the Abatement Contractor, and used by workers in conjunction with the written respiratory protection program.
- C. The Abatement Contractor shall provide respirators that meet the requirements of 29 CFR Parts 1910 and 1926.
  1. Full facepiece Type C supplied-air respirators operated in pressure demand mode equipped with an auxiliary self-contained breathing apparatus, operated in pressure demand or continuous flow, shall be worn during gross removal, demolition, renovation and/or other disturbance of ACM whenever airborne fiber concentrations inside the work area are greater than 10.0 f/cc.
  2. Full facepiece Type C supplied-air respirators operated in pressure demand mode with HEPA filter disconnect protection shall be worn during gross removal, demolition, renovation and/or other disturbance of ACM with an amphibole content and/or whenever airborne fiber concentrations inside the work area are equal to or greater

- than 0.5 f/cc and less than or equal to 10.0 f/cc.
3. Full facepiece powered air-purifying respirators (PAPR) equipped with HEPA filters shall be worn during the removal, encapsulation, enclosure, repair and/or other disturbance of friable ACM if airborne fiber concentrations inside the work area are less than 0.5 f/cc. A supply of charged replacement batteries, HEPA filters and flow test meter shall be available in the clean room for use with powered air-purifying respirators. HEPA filters shall be changed daily or as flow testing indicates change is necessary. Any Type C supplied-air respirator operated in continuous flow, with HEPA filter disconnect protection, may be substituted for a powered air-purifying respirator.
  4. Loose fitting helmets or hoods with powered air-purifying respirators (PAPR) equipped with HEPA filters may be worn during the removal, encapsulation, enclosure, repair and/or other disturbance of friable ACM if airborne fiber concentrations inside the work area are less than 0.25 f/cc. A supply of charged replacement batteries, HEPA filters and flow test meter shall be available in the clean room for use with powered air-purifying respirators. HEPA filters shall be changed daily or as flow testing indicates change is necessary. Any Type C supplied-air respirator operated in continuous flow may be substituted for a powered air-purifying respirator.
  5. Half-mask or full-face air-purifying respirators with HEPA filters shall be worn only during the preparation of the work area and final clean up procedures provided airborne fiber concentrations inside the work area are less than 0.1 f/cc.
  6. Use of single use dust respirators is prohibited for the above respiratory protection.
- D. Workers shall be provided with personally issued and individually marked respirators. Respirators shall not be marked with any equipment that will alter the fit of the respirator in any way. Only waterproof identification markers shall be used.
  - E. The Abatement Contractor shall ensure that the workers are qualitatively or quantitatively fit tested by an Industrial Hygienist initially and every six months thereafter with the type of respirator he/she will be using.
  - F. Whenever the respirator design permits, workers shall perform the positive and negative air pressure fit test each time a respirator is worn. Powered air-purifying respirators shall be tested for adequate flow as specified by the manufacturer.
  - G. No facial hair, which interferes with the face-to-mask sealing surface, shall be permitted to be worn when wearing respiratory protection that requires a mask-to-face seal.
  - H. Contact lenses shall not be worn in conjunction with respiratory protection.
  - I. If a worker wears glasses, a spectacle kit to fit their respirator shall be provided by the Abatement Contractor at the Abatement Contractor's expense.
  - J. Respiratory protection maintenance and decontamination procedures shall meet the following requirement:
    1. Respiratory protection shall be inspected and decontaminated on a daily basis in accordance with OSHA 29 CFR 1910.134(b); and
    2. HEPA filters for negative pressure respirators shall be changed after each shower; and
    3. Respiratory protection shall be the last piece of worker protection equipment to be removed. Workers must wear respirators in the shower when going through decontamination procedures; and
    4. Airline respirators with HEPA filtered disconnect shall be disconnected in the equipment room and worn into the shower. Powered air-purifying respirator facepieces shall be worn into the shower. Filtered/power pack assemblies shall be decontaminated in accordance with manufacturers' recommendations; and
    5. Respirators shall be stored in a dry place and in such a manner that the facepiece and exhalation valves are not distorted; and
    6. Organic solvents shall not be used for washing of respirators.
  - K. No visitors shall be allowed to enter the contaminated area if they do not have their medical certification and training certificate. Authorized visitors shall be provided with suitable PAPR respirators and instructions on the proper use of respirators whenever entering the work area.

### **3.16 DISPOSAL OF WASTE**

#### **A. APPLICABLE REGULATIONS**



1. All asbestos waste shall be stored, transported and disposed of as per, but not limited to, the following Regulations:
  - a. NYS Code Rule 56
  - b. U.S. Department of Transportation (DOT) Hazardous Substances Title 29, Part 171 and 172 of the code of Federal Regulations regarding waste collector registration
  - c. Regulations regarding waste collector registration Title 6, part 364 of the New York State Official Compilation of Codes, Rules and Regulations – 6 NYCRR 364
  - d. USEPA NESHAPS 40 CRF 61
  - e. USEPA ASBESTOS WASTE MANAGEMENT GUIDANCE EPA/530-SW-85-007
- B. TRANSPORTER OR HAULER - The Abatement Contractor shall bear full responsibility for proper characterization, transportation and disposal of all solid or liquid waste, generated during the project, in a legal manner. The Owner shall approve all transportation and disposal methods.
  1. The Abatement Contractor's Transporter (hauler) and disposal site shall be approved by the Owner. The Abatement Contractor shall remove within 48 hours all asbestos waste from the site after completing the clean up.
  2. The Transporter must possess and present to the Owner's representative a valid New York State Department of Environmental Conservation Part 364 asbestos hauler's permit to verify license plate and permit numbers. The Owner's representative will verify the authenticity of the hauler's permit with the proper authority.
  3. The Abatement Contractor shall give 24 hour notification prior to removing any waste from the site. All waste shall be removed from site only during normal working hours. No waste may be taken from the site without authorization from the Owner's representative.
  4. The Abatement Contractor shall have the Transporter give the date and time of arrival at the disposal site.
  5. The Transporter with the Abatement Contractor and Owner's consultant shall inspect all material in the transport container prior to taking possession and signing the Waste Manifest. The Transporter shall not have any off site transfers or be combined with any other off-site asbestos material.
  6. The Transporter must travel directly to the disposal site with no unauthorized stops.
- C. WASTE STORAGE CONTAINER
  1. During loading and on site storage, the asbestos waste container shall be labeled with EPA Danger signage:
 

**DANGER**

**CONTAINS ASBESTOS FIBERS**

**AVOID CREATING DUST**

**CANCER AND LUNG DISEASE HAZARD**
  2. The NYS DEC Hauler's Permit number shall be on both sides and back of the container.
  3. The Container will not be permitted to leave the site without the proper signage.
  4. A copy of the completed waste manifest shall be forwarded directly to the Owner's Consultant by the disposal facility.
  5. Packaging of Non-friable Asbestos. Use of an open top container shall require written request, by the Contractor, and written approval by the Owners Representative, and be performed in compliance with all applicable regulations.
    - a. A chute, if used, shall be air/dust tight along its lateral perimeter and at the terminal connection to the dumpster at ground level (solid wall and top container). The upper end of the chute shall be furnished with a hinged lid, to be closed when the chute is not being used.
    - b. The container shall be lined with a minimum of two (2) layers of 6 mil. Fire-retardant polyethylene draped loosely over the sides so as to facilitate being wrapped over the top of the load and sealed prior to transport from the site.
    - c. Prior to transport from the work site the Dumpster will be disconnected from the chute and sealed air/dust tight utilizing six mil plastic and tape. The waste material will be transported as an asbestos containing material by appropriate

- legal methods.
6. Packaging Friable Asbestos.
    - a. The container shall be a solid wall, hard top and lockable container.
    - b. The container shall be locked upon arrival at the site to restrict access. Security shall be provided at the entrance to the container during the loading process and immediately locked upon completion.
    - c. The interior walls, floor and ceiling shall be lined with two (2) layers of 6 mil. Fire-retardant polyethylene.
    - d. The waste shall be loaded in such a manner as to protect the integrity of the individual waste packages.
    - e. Prior to transport from the work site the interior of the Dumpster will be sealed air/dust tight utilizing six mil plastic and tape. The waste material will be transported as an asbestos containing material by appropriate legal methods.
- D. WASTE DISPOSAL MANIFEST
1. The Asbestos Waste Manifest shall be equivalent to the "Waste Shipment Record" included in 40 CFR61. A copy of the Contractor's manifest shall be reviewed by the Owner's Consultant and shall be the only manifest used.
  2. The Manifest shall be verified by the Owner's Consultant indicating that all the information and amounts are accurate and the proper signatures are in place.
  3. The Manifest shall have the signatures of the Abatement Contractor and the Transporter prior to any waste being removed from the site.
  4. The Manifest shall be signed by the Disposal Facility owner or operator to certify receipt of asbestos containing materials covered by the manifest.
  5. A copy of the completed manifest shall be provided by the Abatement Contractor to the Owner's Consultant and remain on site for inspection.
- E. Abatement Contractor shall maintain a waste disposal log which indicates load number, date and time left site, container size, type of waste, quantity of waste, name of hauler, NYS DES permit number, trailer and tractor license number, and date manifest was returned to Consultant.
- F. The Disposal Facility owner or operator shall return a signed copy of the Waste Manifest directly to:
- Highland Falls – Fort Montgomery CSD  
P.O. Box 287  
Highland Falls, New York 10928  
ATTN: Denise S. Cedeira
1. Copies of the completed Waste Manifest are to be sent by the disposal facility to the Hauler and Abatement Contractor.
  2. Submit signed dump tickets and manifests with final payment request.
  3. Final payment request will not be honored without signed dump ticket or manifests accounting for all asbestos waste removed from the site.
- G. VIOLATIONS OF SPECIFICATIONS
1. Violations of the safety, hygiene, environmental, procedures herein, any applicable federal, state or local requirements or failure to cooperate with the Owner's representative shall be grounds for dismissal and/or termination of this contract.
- H. VIOLATIONS OF NO SMOKING POLICY
1. The Federal Pro Children Act of 1994 prohibits School District Officials from smoking in any buildings or on the grounds that is property of the School District. The District shall be considered smoke free. The School District strongly enforces its' No Smoking Policy. It is the Contractor's responsibility to inform all workers of this policy. Any worker(s) involved with this project that are found smoking or using tobacco products will be informed that they are in violation of the Federal and State Law and School Board Policy and will be removed from site.

### 3.17 LOCATION OF "ABATEMENT WORK"

(Please see attached Drawings for approximate locations)

1. **James I. O'Neill High School (Auditorium Abatement – BASE BID)**
  - a. Abatement Contractor responsible for spot removal of friable asbestos-containing sprayed-on fireproofing from the bottom flange of the structural steel beams to facilitate the installation of new light fixtures within the Auditorium. Spot removals

will be required for light fixture/switch anchor points, as well as for routing of conduit to supply power to the light fixtures/switches. Approx. quantity of spot removals will be 20 SF of sprayed-on fireproofing per structural steel beam, for a total of 140 SF of sprayed-on fireproofing removals, as outlined on abatement drawing HM-100.

**Special Conditions and Project Notes for Base Bid:**

- 1) **Abatement Contractor to refer to drawing E-300 and coordinate with Electrical Contractor for actual routing and spacing in the field for exact spot removal locations, as well as removal quantity at each spot removal location.**
- 2) **Abatement Contractor is responsible for installation of lighting fixture/equipment support clamps to structural steel beam and applying new, non-asbestos fireproofing (As approved by BCA Architects & Engineers) to the exposed structural steel beam spot removal locations within their existing negative pressure tent regulated abatement work area enclosures, prior to clearance air sampling. Clamps to be provided by GC/Electrical Contractor.**
- 3) **Abatement Contractor responsible for removal/cleaning of existing conduit and clamps attached to the structural steel beams within their negative pressure tent regulated abatement work area and turn them over to Electrical Contractor for re-installation later.**
- 4) **Abatement Contractor to provide scaffolding to access each structural steel beam for spot removals and leave up for use by the Electrical Contractor for lighting installations.**
- 5) **Each structural steel beam will be considered a separate work area, with a negative pressure tent regulated abatement work area enclosure constructed over the entire length of the scaffolding below each structural steel beam in compliance with ICR56.**
- 6) **Each negative pressure tent regulated abatement work area enclosure shall utilize an attached small project combined personal and waste decontamination system enclosure constructed in compliance with ICR56.**

2. **James I. O'Neill High School (Auditorium Abatement – ALTERNATE BID)**

- a. **Abatement Contractor responsible for complete removal of friable asbestos-containing sprayed-on fireproofing from the entire length of the bottom flange (top and bottom of bottom flange) of the structural steel beams to facilitate the installation of new light fixtures within the Auditorium. Approx. quantity of removals will be 157.50 SF of sprayed-on fireproofing per structural steel beam, for a total of 1,102.50 SF of sprayed-on fireproofing removals, as outlined on abatement drawing HM-100.**

**Special Conditions and Project Notes for Alternate Bid:**

- 1) **Abatement Contractor to coordinate with Electrical Contractor for demarcation and exact removal locations on each structural steel beam.**
- 2) **Abatement Contractor responsible for removal/cleaning of existing conduit and clamps attached to the structural steel beams within their negative pressure tent regulated abatement work area and turn them over to Electrical Contractor for re-installation later.**
- 3) **Abatement Contractor to provide scaffolding to access each structural steel beam for spot removals and leave up for use by the Electrical Contractor for lighting installations.**
- 4) **Each structural steel beam will be considered a separate work area, with a negative pressure tent regulated abatement work area enclosure constructed over the entire length of the scaffolding below each structural steel beam in compliance with ICR56.**
- 5) **Each negative pressure tent regulated abatement work area enclosure shall utilize an attached small project combined personal and waste decontamination system enclosure constructed in compliance with ICR56.**

**END OF LOCATION OF WORK**

### **3.18 GENERAL**

- A. The Abatement Contractor will be responsible for repairing all building components damaged during abatement including, but not limited to: ceiling tiles, ceiling finishes, wall finishes, floor finishes, etc.
- B. The Abatement Contractor shall be responsible for all demolition required to access materials identified in scope of work and on associated drawings.
- C. Concealed conditions that are exposed and may require additional work shall be brought to the attention of the Owner immediately. The Abatement Contractor shall not abate these areas without a written notice to proceed. Additional asbestos abatement performed prior to the order to proceed will not be acknowledged.
- D. The Abatement Contractor shall remove asbestos-containing floor covering to the building substrate beneath; in areas indicted. Subsequent to final air clearance the substrate shall be washed with a neutralizing agent to prepare the substrate to accept new floor covering and eliminate residual odors.
- E. Power tools used to drill, cut into or otherwise disturb asbestos containing material shall be equipped with HEPA filtered local exhaust ventilation.
- F. The Abatement Contractor shall provide access to GFCI electrical power, required to perform the area air monitoring for this project, within and immediately adjacent to each work area.
- G. Unwrapped or unbagged ACM shall be immediately placed in an impermeable waste bag or wrapped in plastic sheeting.
- H. Coordinate all removal operations with the Owner.

**Asbestos Employee Medical Examination Statement  
Certificate of Worker Release  
Asbestos Employee Training Statement  
CERTIFICATE OF WORKERS ACKNOWLEDGEMENT**

PROJECT NAME: **HFFM CSD: James I. O'Neill Renovation Project**

CONTRACTOR'S

NAME: \_\_\_\_\_

WORKING WITH ASBESTOS INVOLVES POTENTIAL EXPOSURE TO AIRBORNE ASBESTOS FIBERS. INHALING ASBESTOS FIBERS HAS BEEN LINKED WITH VARIOUS TYPES OF CANCER AND RESPIRATORY DISEASES. SMOKING CIGARETTES AND INHALATION OF ASBESTOS FIBERS INCREASES THE RISK THAT YOU WILL DEVELOP LUNG CANCER ABOVE THAT OF THE NON-SMOKING PUBLIC.

The Contract for this project requires your employer to 1) supply proper respiratory protection devices and training on their use 2) provide training on safe work practices and on use of the equipment used on the project 3) provide a medical examination meeting the requirements of 29 CFR 1926.1101. Your signature on this certificate, documents that your employer has fulfilled these contractual obligations and you understand the information presented to you.

**\*\*\*DO NOT SIGN THIS FORM UNLESS YOU FULLY UNDERSTAND THIS INFORMATION\*\*\***

RESPIRATORY PROTECTION: I have been trained in the proper use and limitations of the type of respiratory protection devices to be used on this project. I have reviewed the written respiratory protection program manual and a copy is available for my use. Respiratory protection equipment has been provided, by the Contractor, at no cost to me.

TRAINING COURSE: I have been trained in the risks and dangers associated with handling asbestos, breathing asbestos dust, proper work procedures, personal protection and engineering controls. I have satisfactorily completed and Asbestos Safety Training Program for New York State and have been issued a New York State Department of Health Certificate of Asbestos Safety Training.

MEDICAL EXAMINATION: I have satisfactorily completed a medical examination within the last 12 months that meets the OSHA requirement for an asbestos worker and included at least 1) medical history 2) pulmonary function 3) medical examination 4) approval to wear respiratory protection devices and may have included an evaluation of a chest x-ray.

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

Printed Name: \_\_\_\_\_ SS#: \_\_\_\_\_

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

HFFM CSD: James I. O'Neill Renovation Project

ESTIMATE OF ACM QUANTITIES

\*\*\*\*\*

\*\*\*EACH ABATEMENT CONTRACTOR SHALL READ AND ACKNOWLEDGE THE FOLLOWING NOTICE. A SIGNED AND DATED COPY OF THIS ACKNOWLEDGMENT SHALL BE SUBMITTED WITH THE ABATEMENT CONTRACTOR'S BID FOR THIS PROJECT. FAILURE TO DO SO MAY, AT THE SOLE DISCRETION OF THE OWNER, RESULT IN THE BID BEING CONSIDERED NON-RESPONSIVE AND RESULT IN DISQUALIFICATION OF THE ABATEMENT CONTRACTOR'S BID ON THIS PROJECT.

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\*\*\*NOTICE\*\*\*

The linear and square footages listed within this specification are approximates. Abatement Contractor is required to visit the work locations prior to bid submittal in order to take actual field measurements within each listed location. The Abatement Contractor shall base their bid on actual quantities determined, by them, at the site walkthrough. Estimates provided in these specifications are for informational purposes only and shall not be considered a basis for Change Orders on this project.

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**Acknowledgment:** I have read and understand the above NOTICE regarding removal quantity estimates and understand that estimates provided in these specifications are for informational purposes only and shall not be considered a basis for Change Orders on this project. The Abatement Contractor's signatory represents to the Owner that he/she has the authority of the entity he/she represents to sign this agreement on its behalf.

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

Type or Print

By: \_\_\_\_\_

—

Signature

Title

Date

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

**ASSOCIATED ASBESTOS REMOVAL LOCATION DRAWINGS**

**> HFFM CSD: JAMES I. O'NEILL RENOVATION PROJECT**

> HM-000 – James I. O'Neill High School – Asbestos Abatement Notes – Area A

> HM-100 – James I. O'Neill High School – Asbestos Abatement Plan – Area A

**END OF SECTION**

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**SECTION 02 4119  
MINOR DEMOLITION**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Selective demolition of building elements for additions/renovations/reconstruction purposes.
- B. Abandonment and removal of existing utilities and utility structures.

**1.02 REGULATORY REQUIREMENTS**

- A. Conform to applicable code for Demolition Work, dust control, products requiring electrical disconnection and re-connection.
- B. Do not close or obstruct egress from any building exit or site exit.
- C. Do not disable or disrupt building fire or life safety systems without 3 days' prior written notice to Owner. Fire alarm system shall be reactivated and re-certified prior to Owner occupancy.
- D. Conform to applicable regulatory procedures when hazardous or contaminated materials are discovered.
- E. Conform with the Fire Code of New York State and Building Code of New York State during all demolition activities.
  - 1. Provide demolition schedule to Architect.

**1.03 PROJECT CONDITIONS**

- A. Conduct demolition to minimize interference with adjacent and occupied building areas if applicable.
- B. Cease operations immediately if structure appears to be in danger and notify Architect/Engineer. Do not resume operations until directed.

**PART 2 PRODUCTS -- NOT USED**

**PART 3 EXECUTION**

**3.01 GENERAL PROCEDURES AND PROJECT CONDITIONS**

- A. Provide, erect, and maintain temporary barriers at locations indicated. Pedestrian protection shall be provided during all demolition and construction activities being performed on a building with a height of 8 feet or greater, when the distance from the pedestrian walkway or lot line is 5 feet or more but not less than 1/4 the height of construction. The General Contractor shall provide pedestrian protection which shall include, but not be limited to, barriers and overhead protection.
- B. Erect and maintain temporary partitions to prevent spread of dust, odors, and noise to permit continued building occupancy.
- C. Protect existing materials and equipment that are not to be demolished.
- D. Protect walls, ceilings, floors and other existing finish work that are to remain and are exposed during demolition operations.
- E. Cover and protect furniture, furnishings and equipment that have not been removed.
- F. Protect existing structures and other elements that are not to be removed.
  - 1. Provide bracing and shoring.
  - 2. Prevent movement or settlement of adjacent structures.
  - 3. Stop work immediately if adjacent structures appear to be in danger.
- G. Provide appropriate temporary signage including signage for exit or building egress.
- H. Protection of adjoining property: Adjoining property shall be protected from damage during construction, remodeling, and demolition Work. The Contractor shall provide written notice to the adjoining property Owner(s) prior to any excavation. Written notice to adjoining property Owner(s) shall be provided not less than 10 days prior to scheduled excavation.

**3.02 EXISTING UTILITIES**

- A. Coordinate Work with utility companies; notify before starting Work and comply with their requirements; and obtain required permits.
- B. Protect existing utilities to remain from damage.

- C. Do not disrupt public utilities without permit from authority having jurisdiction.
- D. Do not close, shut off, or disrupt existing life safety systems that are in use without at least 7 days prior written notification to Owner.
- E. Do not close, shut off, or disrupt existing utility branches or take-offs that are in use without at least 3 days prior written notification to Owner.
- F. Locate and mark utilities to remain; mark using highly visible tags or flags, with identification of utility type; protect from damage due to subsequent construction, using substantial barricades if necessary.
- G. Remove exposed piping, valves, meters, equipment, supports, and foundations of disconnected and abandoned utilities.
- H. Prepare building demolition areas by disconnecting and capping utilities outside the demolition zone; identify and mark utilities to be subsequently reconnected, in same manner as other utilities to remain.

### **3.03 SELECTIVE DEMOLITION**

- 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 shown.
  - 2. Report discrepancies to Architect before disturbing existing installation.
  - 3. Beginning of demolition work constitutes acceptance of existing conditions.
- B. Maintain weatherproof exterior building enclosure except for interruptions required for replacement or modifications; take care to prevent water and humidity damage.
- C. Remove existing Work as indicated and as required to accomplish new Work.
  - 1. Remove items indicated on Drawings.
- D. Services (Including but not limited to Electrical): Remove existing systems and equipment as indicated.
  - 1. Maintain existing active systems that are to remain in operation; maintain access to equipment and operational components.
  - 2. 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.
  - 3. Verify that abandoned services serve only abandoned facilities before removal.
  - 4. 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.
- E. 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.
    - a. Restore exposed finishes or patched areas and extend finish restoration into adjoining construction to remain in a manner that eliminates evidence of patching and refinishing.
  - 4. Patch as Specified for Patching New Work.
    - a. Patch, and repair floor and wall surfaces in the new space where demolished walls or partitions extend one (1) finish area into another. Provide a flush and even surface uniform color and appearance.
  - 5. Reinstall Existing Batt Insulation.
    - a. During the removal of an existing ceiling system, if existing batt insulation is discovered, the Contractor shall provide and install new batt insulation that conforms to Paragraph 719.2 of the Building Code of New York State. Existing batt insulation can be reused if the Owner has documentation proving that the existing batt insulation meets the aforementioned requirements.

### **3.04 DEBRIS AND WASTE REMOVAL**

- A. Remove debris, junk, and trash from site. Do not burn or bury materials on-site.
- B. Leave site in clean condition, ready for subsequent Work.

- C. Remove the material and equipment identified on the Contract Drawings as that to be retained by the Owner. Store or deliver as directed.
- D. Sweep the building broom clean on completion of selective demolition.
- E. Clean existing appurtenances of dust, dirt and debris caused by demolition operations.

**END OF SECTION**

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**SECTION 03 1000  
CONCRETE FORMING AND ACCESSORIES**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Formwork for cast-in place concrete with shoring, bracing, and anchorage.
- B. Openings for other Work.
- C. Form accessories.

**1.02 RELATED REQUIREMENTS**

- A. Section 03 2000 - Concrete Reinforcing.
- B. Section 03 3000 - Cast-in-Place Concrete.

**1.03 REFERENCE STANDARDS**

- A. ACI 301 - Specifications for Structural Concrete 2016.
- B. ACI 318 - Building Code Requirements for Structural Concrete and Commentary; American Concrete Institute; 2014.
- C. ACI 347R - Guide to Formwork for Concrete 2014, with Errata (2017).

**1.04 SUBMITTALS**

- A. See Section 01 3300 - Submittal Procedures for submittal process.
- B. Product Data: Provide data on void form materials.
- C. Shop Drawings: Indicate pertinent dimensions, materials, bracing, and arrangement of joints and ties.

**1.05 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver pre-fabricated forms and installation instructions in manufacturer's packaging.
- B. Store prefabricated forms off ground in ventilated and protected manner to prevent deterioration from moisture.

**PART 2 PRODUCTS**

**2.01 FORMWORK - GENERAL**

- A. Provide concrete forms, accessories, shoring, and bracing as required to accomplish Cast-in-Place Concrete Work.
- B. Design and construct to provide resultant concrete that conforms to 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.
- D. Comply with relevant portions of ACI 301, ACI 301, and ACI 301.
  - 1. Maintain one (1) copy of standards on Project Site.

**2.02 WOOD FORM MATERIALS**

- A. Form Materials: At the discretion of the Contractor:
  - 1. Construct formwork for exposed (painted or unpainted) concrete surfaces with smooth face of undamaged plywood or other panel type materials acceptable to the Architect/Engineer, to provide continuous, straight, smooth cast surfaces. Furnish in largest practicable sizes to minimize the number of joints.
  - 2. Construct formwork for concrete concealed from view or covered with cement plaster with rough sawn boards of sound grade, as approved by the Architect/Engineer, to provide a mechanical bond for subsequent application of plaster.
- B. Provide form material with sufficient thickness to withstand pressure of newly placed concrete without excessive and objectionable bow or deflection.

**2.03 REMOVABLE PREFABRICATED FORMS**

- A. Pre-formed Steel Forms: Minimum 16 gauge, 0.0598 inch thick, matched, tight fitting, stiffened to support weight of concrete without deflection detrimental to tolerances and

appearance of finished surfaces.

- B. Preformed Plastic Forms: Thermoplastic polystyrene form liner, tight fitting, stiffened to support weight of concrete without deflection detrimental to tolerances and appearance of finished surfaces.
- C. Glass Fiber Fabric Reinforced Plastic Forms: Matched, tight fitting, stiffened to support weight of concrete without deflection detrimental to tolerances and appearance of finished concrete surfaces.

## **2.04 FORMWORK ACCESSORIES**

- A. Form Ties: Snap-off type, galvanized metal, adjustable length, with waterproofing washer, 1-1/2 inch back break dimension, free of defects that could leave holes larger than 1 inch in concrete surface.
- B. Form Release Agent: Capable of releasing forms from hardened concrete without staining or discoloring concrete or forming bugholes and other surface defects, compatible with concrete and form materials, and not requiring removal for satisfactory bonding of coatings to be applied.
  - 1. Composition: Colorless reactive, mineral oil-based, soy-based, or vegetable-oil based compound.
- C. Embedded Anchor Shapes, Plates, Angles and Bars: As specified in Section 05 1200 - Structural Steel Framing.
- D. Waterstops: Polyvinyl chloride, minimum 2,000 psi tensile strength, minimum 50 degrees F to plus 175 degrees F working temperature range, 6 inches in height, maximum possible lengths, ribbed profile, preformed corner sections, heat welded jointing.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify lines, levels and centers before proceeding with formwork. Ensure that dimensions agree with Drawings.

### **3.02 ERECTION - FORMWORK**

- A. Arrange and assemble formwork to permit dismantling and stripping. Do not damage concrete during stripping. Permit removal of remaining principal shores.
- B. Align joints and make watertight. Keep form joints to a minimum.
- C. Provide chamfer strips on external corners of beams, joists, and columns.
- D. Coordinate this Section with other Sections of Work that require attachment of components to formwork.

### **3.03 APPLICATION - FORM RELEASE AGENT**

- A. Apply prior to placement of reinforcing steel, anchoring devices, and embedded items.
- B. Do not apply form release agent where concrete surfaces will receive special finishes or applied coverings that are affected by agent. Soak inside surfaces of untreated forms with clean water. Keep surfaces coated prior to placement of concrete.

### **3.04 INSERTS, EMBEDDED PARTS, AND OPENINGS**

- A. Locate and set in place items that will be cast directly into concrete.
- B. Coordinate with Work of other Sections in forming and placing openings, slots, reglets, recesses, sleeves, bolts, anchors, other inserts, and components of other Work.
- C. Install accessories in accordance with manufacturer's instructions, so they are straight, level, and plumb. Ensure items are not disturbed during concrete placement.
- D. Install waterstops in accordance with manufacturer's instructions, so they are continuous without displacing reinforcement. Heat seal joints so they are watertight.

### **3.05 FORM CLEANING**

- A. Clean formed cavities of debris prior to placing concrete.
  - 1. During cold weather, remove ice and snow from within forms. Do not use de-icing salts. Do not use water to clean out forms unless formwork and concrete construction proceed within heated enclosure. Use compressed air or other means to remove

foreign matter.

### **3.06 FORMWORK TOLERANCES**

- A. Construct formwork to maintain tolerances required by ACI 117, unless otherwise indicated.
- B. Construct and align formwork for elevator hoistway in accordance with ASME A17.1.

### **3.07 FIELD QUALITY CONTROL**

- A. An independent testing agency will perform field quality control tests, as specified in Section 01 4000 - Quality Requirements.
- B. Inspect erected formwork, shoring, and bracing to ensure that Work is in accordance with formwork design and to verify that supports, fastenings, wedges, ties, and items are secure.
- C. Do not reuse wood formwork more than two (2) times for concrete surfaces to be exposed to view. Do not patch formwork.

### **3.08 FORM REMOVAL**

- A. Loosen forms carefully. Do not wedge pry bars, hammers, or tools against finish concrete surfaces scheduled for exposure to view.
- B. Store removed forms to prevent damage to form materials or to fresh concrete. Discard damaged forms.
- C. Rubbing out of all exposed concrete: The Contractor shall provide smooth finish texture on all areas exposed to view by surface rubbing concrete wall with an applied coating of silica sand and Portland cement. Rub to an even texture to achieve a uniform smooth finish. Use an admixture of Acryl 30, or equal, with mixing water to achieve proper strength of applied coating.

**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 1000 - Concrete Forming and Accessories.
- B. Section 03 3000 - Cast-in-Place Concrete.
- C. Section 04 2000 - Unit Masonry: Reinforcement for masonry.

**1.03 REFERENCE STANDARDS**

- A. ACI 301 - Specifications for Structural Concrete 2016.
- B. ACI 302.1R-04 Guide for Concrete Floor and Slab Construction.
- C. ACI 318 - Building Code Requirements For Structural Concrete and Commentary; American Concrete Institute International; 2014.
- D. ASTM A615/A615M - Standard Specification for Deformed and Plain Carbon-Steel Bars for Concrete Reinforcement 2020.
- E. ASTM A704/A704M - Standard Specification for Welded Steel Plain Bar or Rod Mats for Concrete Reinforcement 2019, with Editorial Revision.
- F. ASTM A1064/A1064M - Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete 2018a.
- G. AWS D1.4/D1.4M - Structural Welding Code - Reinforcing Steel 2018.
- H. CRSI (DA4) - Manual of Standard Practice 2009.
- I. CRSI (P1) - Placing Reinforcing Bars 2011.

**1.04 SUBMITTALS**

- A. See Section 01 3300 - Submittal Procedures for submittal process.
- B. Shop Drawings: Comply with requirements of ACI SP-66 Include bar schedules, shapes of bent bars, spacing of bars, and location of splices.
- 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.

**1.05 QUALITY ASSURANCE**

- A. Perform work of this Section in accordance with CRSI (DA4), ACI 301, and ACI 318.
  - 1. Maintain one (1) copy of each document on Project Site.
- B. Delivery: Deliver reinforcement to the Job Site bundled, tagged and marked. Use metal tags indicating bar size, lengths and other information corresponding to marking shown on placement diagrams.
- C. Storage: Store reinforcement at the Job Site in a manner to prevent damage and accumulation of dirt and excessive rust.

**PART 2 PRODUCTS**

**2.01 REINFORCEMENT**

- A. Reinforcing Steel: ASTM A 615/A 615M Grade 60 (420) deformed bars uncoated.
- B. Steel Welded Wire Reinforcement (WWR): Galvanized, deformed type; ASTM A1064/A1064M.
  - 1. Form: Flat Sheets.
  - 2. Mesh Size and Wire Gauge: As indicated on drawings.
- C. Reinforcement Accessories:
  - 1. Tie Wire: Annealed, minimum 16 gauge, 0.0508 inch.

2. Chairs, Bolsters, Bar Supports, Spacers: Sized and shaped for adequate support of reinforcement during concrete placement. Use of wood, clay brick, concrete block for chairs, bolsters is strictly prohibited.

## **2.02 FABRICATION**

- A. Fabricate concrete reinforcing in accordance with CRSI (DA4) - Manual of Standard Practice and ACI 318. In the case of fabrication errors, do not re-bend or straighten reinforcement in a manner that will injure or weaken the material.
- B. Unacceptable materials: Reinforcement with any of the following defects will not be permitted in the work:
  1. Bar lengths, depths, and bends exceeding specified fabrication tolerances.
  2. Bends or kinks not indicated on the Drawings or on the final Shop Drawings.
  3. Bars with reduced cross-section due to excessive rusting or other causes.
- C. Welding of reinforcement is permitted only with the specific approval of Architect/Engineer. Perform welding in accordance with AWS D1.4.
- D. Locate reinforcing splices not indicated on Drawings at point of minimum stress.

## **PART 3 EXECUTION**

### **3.01 PLACEMENT**

- A. Place, support and secure reinforcement against displacement. Do not deviate from required position.
- B. Maintain concrete cover around reinforcing as follows:
  1. Walls (exposed to weather or backfill): 2 inch.
  2. Footings and Concrete Formed Against Earth: 3 inch.
  3. Slabs on Fill: 3/4 inch.
- C. Conform to applicable code for concrete cover over reinforcement.
- D. All reinforcing shall be a minimum of 2 inches clear from all vertical forms at exterior exposed surfaces. This includes columns, beams, and girders.
- E. Cutting of bars to clear openings in walls or slabs is strictly prohibited. Wrap bars around such openings. Provide two (2) #5 diagonal bars at each corner of every rectangular opening in slabs or walls unless shown otherwise on the Contract Drawings.
- F. Minimum clear distance between parallel bars, except in columns shall not be less than:
  1. Nominal diameter of the bar, or
  2. 1-1/3 times the maximum aggregate size, or
  3. 1 inch, whichever is greater.
- G. Provide bent bars 4 feet long of same size and spacing as horizontal bars for all corners of foundation walls.
- H. Welded wire mesh in slabs to be supported in upper third of slab.
- I. All wall dowels in footings shall be tied in position before placing of concrete.

### **3.02 FIELD QUALITY CONTROL**

- A. Placing of concrete shall not be scheduled until all of the reinforcing for this Section is in place and the reinforcing been approved by the Owner's testing laboratory. The Contractor shall notify the testing laboratory 24 hours prior to a concrete pour.
- B. The Owner's independent testing agency, as specified in Section 01 4000 - Quality Requirements, will inspect installed reinforcement for conformance to Contract Documents before concrete placement.

## **END OF SECTION**

**SECTION 03 3000  
CAST-IN-PLACE CONCRETE**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Concrete Floor Slabs.
- B. Slabs on grade.
- C. Concrete foundation walls.
- D. Sidewalks and curbs.
- E. Joint devices associated with Concrete Work.
- F. Concrete curing.

**1.02 RELATED REQUIREMENTS**

- A. Section 03 1000 - Concrete Forming and Accessories: Forms and accessories for formwork.
- B. Section 03 2000 - Concrete Reinforcing.

**1.03 REFERENCE STANDARDS**

- A. ACI 211.1 - Standard Practice for Selecting Proportions for Normal, Heavyweight, and Mass Concrete 1991 (Reapproved 2009).
- B. ACI 211.2 - Standard Practice for Selecting Proportions for Structural Lightweight Concrete 1998 (Reapproved 2004).
- C. ACI 301 - Specifications for Structural Concrete 2016.
- D. ACI 302.1R - Guide to Concrete Floor and Slab Construction 2015.
- E. ACI 304R - Guide for Measuring, Mixing, Transporting, and Placing Concrete 2000 (Reapproved 2009).
- F. ACI 305R - Guide to Hot Weather Concreting 2010.
- G. ACI 306R - Guide to Cold Weather Concreting 2016.
- H. ACI 308R - Guide to External Curing of Concrete 2016.
- I. ACI 318 - Building Code Requirements for Structural Concrete and Commentary; American Concrete Institute International; 2014.
- J. ASTM C33/C33M - Standard Specification for Concrete Aggregates 2018.
- K. ASTM C39/C39M - Standard Test Method for Compressive Strength of Cylindrical Concrete Specimens 2021.
- L. ASTM C94/C94M - Standard Specification for Ready-Mixed Concrete 2020.
- M. ASTM C143/C143M - Standard Test Method for Slump of Hydraulic-Cement Concrete 2020.
- N. ASTM C150/C150M - Standard Specification for Portland Cement 2020.
- O. ASTM C171 - Standard Specification for Sheet Materials for Curing Concrete 2016.
- P. ASTM C173/C173M - Standard Test Method for Air Content of Freshly Mixed Concrete by the Volumetric Method 2016.
- Q. ASTM C260/C260M - Standard Specification for Air-Entraining Admixtures for Concrete 2010a (Reapproved 2016).
- R. ASTM C309 - Standard Specification for Liquid Membrane-Forming Compounds for Curing Concrete 2019.
- S. ASTM C618 - Standard Specification for Coal Fly Ash and Raw or Calcined Natural Pozzolan for Use in Concrete 2019.
- T. ASTM C1059/C1059M - Standard Specification for Latex Agents for Bonding Fresh to Hardened Concrete 2013.
- U. ASTM C1107/C1107M - Standard Specification for Packaged Dry, Hydraulic-Cement Grout (Nonshrink) 2017.

- V. ASTM C 1116 - Standard Specification for Fiber-Reinforced Concrete and Shotcrete.
- W. ASTM D1751 - Standard Specification for Preformed Expansion Joint Filler for Concrete Paving and Structural Construction (Nonextruding and Resilient Bituminous Types) 2018.
- X. N.Y.S.D.O.T. - Standard Specifications Construction and Materials.

#### 1.04 SUBMITTALS

- A. See Section 01 3300 - Submittal Procedures for submittal process.
- 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 method of removal in the event of incompatibility with floor covering adhesives.
- C. Mix Design: Submit proposed concrete mix design.
  - 1. Indicate proposed mix design complies with requirements of ACI 301, Section 4 - Concrete Mixtures.
  - 2. Indicate proposed mix design complies with requirements of ACI 318, Chapter 5 - Concrete Quality, Mixing and Placing.
  - 3. Provide laboratory test results which demonstrate proposed mix designs meet project specified 28 day compressive strengths.
- D. Test Reports: Submit report for each test or series of tests specified.
- E. Manufacturer's Installation Instructions: For concrete accessories, indicate installation procedures and interface required with adjacent construction.
- F. Project Record Documents: Accurately record actual locations of embedded utilities and components that will be concealed from view upon completion of Concrete Work.
- G. All test and certifications shall be within a 12 month period of the Project start date.

#### 1.05 QUALITY ASSURANCE

- A. Perform Work of this Section in accordance with ACI 301, ACI 302.1R and ACI 318.
  - 1. Maintain 1 copy of each document on-site.
- B. Follow recommendations of ACI 305R when concreting during hot weather.
- C. Follow recommendations of ACI 306R when concreting during cold weather.

#### 1.06 CONCRETE FLOOR CLASSIFICATION & FINISH REQUIREMENTS

- A. Table A

Class	Locations	Finish	Flatness Ff	Levelness FI
1	Interior Slabs on Metal Deck	Normal steel-troweled finish	20	15
2	Not Used	Light steel-troweled finish	25	20
3	Exterior concrete slabs	Broom finish	35	25
4	Not Used	Normal steel-troweled finish	35	25
5	Not Used	Hard steel-troweled finish	35	25

- B. Table B

Class	Locations	28-Day Strength	Slump (Max.)
1	Interior Slabs on Metal Deck	4000 psi	5"
2	Not Used	4000 psi	5"
3	Exterior concrete slabs/sidewalks	5000 psi	3"
4	Not Used	4000 psi	5"
5	Not Used	4000 psi	4"

## **PART 2 PRODUCTS**

### **2.01 FORMWORK**

- A. Comply with requirements of Section 03 1000.

### **2.02 REINFORCEMENT**

- A. Comply with requirements of Section 03 2000 - Concrete Reinforcing..

### **2.03 CONCRETE MATERIALS**

- A. Cement: ASTM C 150, Type I - Normal.
  - 1. Acquire all cement for entire Project from same source.
- B. Fine and Coarse Aggregates: ASTM C 33.
  - 1. Acquire all aggregates for entire Project from same source.
  - 2. Course aggregates shall be strong, clean crushed limestone complying with ASTM C33, size No. 67 provided from one (1) source.
  - 3. The maximum aggregate size shall not be larger than 1/5 of the narrowest dimension between sides of forms, 1/3 of the depth of slabs, not 3/4 of minimum clear spacing between individual reinforcing bars or bundles of bars.
  - 4. Sand: Clean sharp, natural sand, graded in accordance with ASTM C33.
- C. Lightweight Aggregate: ASTM C330/C330M.
- D. Fly Ash: ASTM C618, Class C or F.
- E. Water: Clean and not detrimental to concrete. Water used as a ingredient in concrete shall be clean, potable, and free from injurious amounts of foreign matter.

### **2.04 ADMIXTURES**

- A. Air Entrainment Admixture: ASTM C260/C260M.

### **2.05 ACCESSORY MATERIALS**

- A. Non-Shrink Cementitious Grout: Pre-mixed compound consisting of non-metallic aggregate, cement, water reducing, and plasticizing agents.
  - 1. ASTM C1107/C1107M; Grade A, B, or C.
  - 2. Minimum Compressive Strength at 48 Hours, ASTM C109/C109M: 2,000 pounds per square inch.
  - 3. Minimum Compressive Strength at 7 Days: 5,000 psi.
  - 4. Products:
    - a. Five Star Grout, or approved equal.
  - 5. Minimum Compressive Strength at 28 Days: 7,500 psi.

### **2.06 BONDING AND JOINTING PRODUCTS**

- A. Latex Bonding Agent: Non-redispersable acrylic latex, complying with ASTM C1059/C1059M, Type II.
  - 1. Products:
    - a. W.R. Meadows, Inc.; ACRY-LOK-: [www.wrmeadows.com/#sle](http://www.wrmeadows.com/#sle).
- B. Joint Filler: Nonextruding, resilient asphalt impregnated fiberboard complying with ASTM D 1751, 1/2 inch thick and depth as indicated; tongue and groove profile.
- C. Sealant and primer as specified in Section 07 9005 - Joint Sealers.

### **2.07 CURING MATERIALS**

- A. Membrane Curing Compound: ASTM C309 Type 1 - Clear or translucent, Class A (Vertical) Surfaces Only.
  - 1. Acrylic type.
  - 2. Provide Kure-N-Seal manufactured by Sonneborn or approved equal.
- B. Moisture-Retaining Sheet: ASTM C171.
  - 1. Polyethylene film, clear, minimum nominal thickness of 0.0040 inch.
  - 2. White-burlap-polyethylene sheet, weighing not less than 10 ounces per linear yard, 40 inches wide.
- C. Water: Potable, not detrimental to concrete.

## 2.08 CONCRETE MIX DESIGN

- A. Proportioning Normal Weight Concrete: Comply with ACI 211.1 recommendations.
- B. Water Cement Ratio:
  - 1. All exterior concrete: 0.42
  - 2. Interior Slabs: 0.50 maximum.
- C. Proportioning Structural Lightweight Concrete: Comply with ACI 211.2 recommendations.
  - 1. Replace as much Portland cement as possible with fly ash, ground granulated blast furnace slag, silica fume, or rice hull ash as is consistent with ACI recommendations.
- D. Admixtures: Add acceptable admixtures as recommended in ACI 211.1 and at rates recommended or required by manufacturer.
- E. Fiber Reinforcement: Add to mix at rate of 7.5 pounds per cubic yard, or as recommended by manufacturer for specific project conditions on exterior grade, sidewalks, and curbs.
- F. Normal Weight Concrete:
  - 1. Compressive Strength, when tested in accordance with ASTM C39/C39M at 28 days: 5,000 pounds per square inch.
    - a. Refer to Article 1.06 for the required strength of concrete slabs on grade, sidewalks, interior composite floor deck.
  - 2. Fly Ash Content: Maximum 15 percent of cementitious materials by weight.
  - 3. Total Air Content (Interior Slabs): 3 percent Max., determined in accordance with ASTM C173/C173M.
  - 4. Air Content for all concrete flatwork exposed to weather shall be 6 percent. Provide mix design with air entraining agent.
  - 5. Maximum Slump: Refer to Article 1.06 for maximum slump for slabs on grade. Sidewalks, exterior pads, and slabs on metal deck shall not exceed 3 inches.
  - 6. Maximum Slump: Walls, piers, and columns shall not exceed 4 inches
  - 7. Maximum Slump: Footings shall not exceed 4 inches.

## 2.09 MIXING

- A. All concrete shall be mixed until there is a uniform distribution of materials and shall be discharged completely before mixer is recharged.
- B. Ready-mixed concrete shall be mixed and delivered in accordance with requirements of 'Specification of Ready-Mixed Concrete', (ASTM C94).
- C. If concrete is not placed within 90 minutes after batched or if the concrete has become partially set, the concrete will be rejected and shall be disposed of off-site.
- D. Should project conditions prevent the ready-mixed concrete from being transported and placed within the specified time, the concrete shall be mixed according to Article 2.08 or 2.09 of this Specification Section.

## 2.10 MIXING ALTERNATE

- A. Transit Mixers: Comply with ASTM C 94. The concrete shall be mixed in an approved truck drum mixer. The truck mixer shall be equipped with a tank for carrying the mixing water, and the water shall be added to the tank at the proportioning plant. Water added to the mixer shall be measured to the nearest gallon by use of a water meter. The mixing equipment shall be capable of combining the aggregate, cement and water within the specified time in a thoroughly mixed uniform mass, and be capable of discharging the mixture without segregation of the ingredients.
- B. Any drum mixers suspected of not producing uniform mixes shall be tested for uniformity as outlined in ASTM C94. Slump variation in excess of one inch or air content variation in excess of 1 percent shall be cause for rejection of the truck drum mixer for use on this Project. Trucks rejected may be retested at less than rated capacity and if found acceptable may be utilized on the Project at the reduced capacity.
- C. A written delivery slip or ticket, prepared and signed by the licensed weighmaster, shall be made out at the proportioning plant for each truck drum mixer. The delivery slip shall be given to the Architect/Engineer/ Construction Manager as soon as the truck arrives at the Job Site. The Contractor shall provide a copy of below listed information directly to the Architect/Engineer/ Construction Manager at not less than weekly intervals. Each slip shall show the following

1. Date and truck number; ticket number; mix designation of concrete; cubic yards of concrete; cement brand; type and weight in pounds; weight in pounds of fine aggregate (sand); weight in pounds of #1 aggregate (stone); weight in pounds of #2 aggregate; weight in pounds of other aggregate, if required; air entraining agent, brand, and weight in pounds and ounces; other admixtures, brand and weight in pounds and ounces; water in gallons stored in attached tank; water in gallons, actually used (by the driver); time of loading; and time of delivery of material to the Job Site (by truck driver).
- D. Any truck drum mixer delivering concrete to the Job Site, which is not accompanied by a delivery slip showing the above information, will be rejected and such truck shall immediately depart from the Job Site.
- E. If the concrete is not poured within 1 hour after the addition of the water, or if the concrete has become partially set, the concrete will be subject to review for temperature and consistency. If mix has developed signs of advanced hydration, load may be rejected. Mixing shall be in accordance with the recommendations of ACI 614-59.
- F. THE MIX SHALL BE DELIVERED TO THE JOB SITE WHEN STILL DRY. Any materials which have had water added before or during the delivery to the Job Site shall be rejected. The mixers may be started and the correct volume of water shall be measured and added only after receiving permission from the Architect/Engineer/Construction Manager. Mixing shall continue for minimum of 70 revolutions at rated speed. If at any time additional water is added, mix 20 revolutions after such water is in the drum. Total mixing shall not exceed 150 revolutions at rated speed. If the concrete is not poured within 1 hour after the addition of the water, or if the concrete has become partially set, the concrete will be rejected and shall be disposed of off the Job Site. Mixing shall be in accordance with the recommendations of ACI 614-59.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Confirm slab classifications, finish, and flatness and levelness requirements.
- B. Verify lines, levels, and dimensions before proceeding with Work of this Section.
- C. Examine the areas and conditions under which Work of this Section will be performed. Correct conditions detrimental to the proper and timely completion of the Work. Do not proceed until unsatisfactory conditions have been corrected.

### **3.02 PREPARATION**

- A. Verify that forms are clean and free of rust before applying release agent.
- B. Coordinate placement of embedded items with erection of concrete formwork and placement of form accessories.
- C. Interior Slabs on Grade: Install vapor retarder under interior slabs on grade. Lap joints minimum 6 inches. Seal joints, seams and penetrations watertight with manufacturer's recommended products and follow manufacturer's written instructions. Repair damaged vapor retarder before covering.

### **3.03 PLACING CONCRETE**

- A. Review floor classification and finish requirement schedule (Paragraph 1.06).
- B. Notify Architect not less than 24 hours prior to commencement of placement operations.
- C. Maintain records of concrete placement. Record date, location, quantity, air temperature, and test samples taken.
- D. Ensure reinforcement, inserts, waterstops, embedded parts, and formed construction joint devices will not be disturbed during concrete placement.

### **3.04 CONCRETE CONVEYING**

- A. Handle concrete from the point of delivery and transfer to the concrete conveying equipment, and to the locations of final deposit, as rapidly as practicable and in methods which will prevent segregation and loss of concrete mix materials.
- B. Provide runways for wheeled concrete conveying equipment from the concrete delivery point to the locations of final deposit.

- C. Keep interior surfaces of conveying equipment, including chutes and tremies, free from hardened concrete, debris, water and other deleterious materials.
- D. Pumps may be used only if they can pump the mix designed. Do not add fine aggregate or water to the mix to satisfy needs of a pumping device.
- E. Use chutes or tremies for placing concrete where a drop of more than 72 inches is required. Where the free drop through tremies exceed 18 feet, use flow checking devices.

### **3.05 COLD WEATHER PLACEMENT**

- A. Concrete Work in cold weather placing shall comply with ACI 306 to protect all Concrete Work from physical damage and reduced strength which would be caused by frost, freezing actions, or low temperatures.
- B. The Architect/Engineer may prohibit the placing of concrete at any time when atmospheric conditions are unsuitable. If permitted, concrete delivered when the surrounding air temperature is 40 degrees F or lower shall have a minimum temperature, as placed, of 55 degrees F, and a maximum temperature, as placed, of 75 degrees F.
- C. All aggregate and water shall be preheated, and all reinforcement, forms, and ground with which the concrete is to come in contact shall be defrosted by an approved method. No concrete shall be placed on frozen ground.
- D. Precautions shall be taken to avoid the possibility of flash set, if aggregate or water is required to be heated to a temperature in excess of 100 degrees F, in order to meet concrete temperature requirements. The requirements of MIXING METHODS, Ready Mixed Concrete, with respect to delivering the concrete mix to the job site while still dry, may be waived upon written request to the Engineer under these conditions.
- E. Unless otherwise ordered by the Engineer, suitable means shall be provided for maintaining the deposited concrete at a temperature of at least 70 degrees F for 72 hours after placing, or at least 50 degrees F for 5 days after placing. The concrete shall be kept above freezing until 28-day strength is met.
- F. The methods of protecting the concrete shall be approved by the Engineer and shall be such as will prevent local drying. Equipment and materials approved for this purpose shall be on the Site in sufficient quantity before the Work begins. The Contractor shall assist the Engineer by providing holes in the forms and the concrete in which thermometers can be placed to determine the adequacy of heating and protection. All such thermometers shall be furnished by the Contractor in quantity and type which the Engineer directs. The addition of chemicals to the concrete to prevent freezing will not be permitted.

### **3.06 HOT WEATHER PLACING**

- A. Concrete Work in Hot Weather: When air temperatures exceed 85 degrees F, or when extremely dry conditions exist even at lower temperatures, particularly if accompanied by high winds, the Contractor and his concrete supplier shall exercise special and precautionary measures in preparing, delivering, placing, finishing, curing and protecting the concrete mix. The Contractor shall consult with the Engineer regarding such measures prior to each day's pouring operation, and the Engineer reserves the right to modify the proposed measures consistent with the requirements of this Section of the Specifications. All necessary materials and equipment shall be on hand and in position prior to each pouring operation.
- B. The temperatures of the concrete mix when placed shall not exceed 80 degrees F. Temperature of mixing water and aggregates shall be carefully controlled and monitored at the supplier's plant, with haul distance to the Job Site being taken into account. Stockpiled aggregates shall, if necessary, be shaded from the sun and sprinkled intermittently with water. If ice is used in the mixing water for cooling purposes, it must be entirely melted prior to addition of the water to the dry mix.
- C. Delivery schedules shall be carefully planned in advance so that concrete is placed as soon as it arrives at the pouring locations, allowance being made for mixing time as specified elsewhere.
- D. The Contractor shall arrange for an ample work force to be on hand to accomplish transporting, placing, vibrating, finishing, and covering of the fresh concrete as rapidly as possible. Preparatory Work at the Job Site shall include thorough wetting of all forms, reinforcing steel, and in the case of slab pours on ground or sub-grade, spraying the ground



surface on the preceding evening and again just prior to pouring. No standing puddles of water shall be permitted in those areas which are to receive the concrete.

- E. Extra care in placing and finishing techniques shall be utilized to avoid formation of cold joints and plastic shrinkage cracking. If ordered by the Engineer, temporary sun shades and/or windbreaks shall be erected to guard against such developments, including generous use of wet burlap coverings and fog sprays to prevent drying out of the exposed concrete surfaces.
- F. Immediately after screeding, horizontal surfaces shall receive an application of dissipating curing compound, Master Builders Confilm or approved equal. Apply in accordance with manufacturer's instructions. Final Finish Work shall begin as soon as the mix has stiffened sufficiently to support the workmen.
- G. Curing and protection of the concrete shall begin immediately after completion of the finishing operation. Continuous moist-curing is mandatory for at least the first 24 hours. Wood forms shall be intermittently sprayed with water while still in place, and all exposed concrete surfaces shall be kept moist by fine spray techniques. Wet burlap coverings may be used if the finished surface is not marred or blemished during contact with the coverings. Burlap must be kept wet by continuous sprinkling with water.
- H. At the end of the initial 24 hour period, curing and protection of the concrete shall continue for at least four (4) additional days using one (1) of the following techniques:
  - 1. Moist curing procedure utilized during the initial 24-hour period shall be continued.
  - 2. Curing paper or heat-reflecting plastic sheet coverings of all exposed concrete surfaces shall be installed. Such coverings shall be installed while the surface is still damp and shall be secured against action and escape of moisture.
  - 3. Approved chlorinated rubber based pigmented curing compounds shall be applied to expose concrete surfaces, provided that the compound will not jeopardize subsequent appearance, painting or other treatment of the surface. Surface shall be damp or prewetted prior to application of the compound, consistent with the manufacturer's instructions. Compound itself shall be applied in strict accordance with the manufacturer's instructions, and shall meet ASTM Specifications C309.

### **3.07 CONSOLIDATION**

- A. General:
  - 1. Consolidate all concrete in accordance with provisions of ACI 309.
  - 2. Consolidate each layer of concrete immediately after placing, by use of internal concrete vibrators supplemented by hand-spading, rodding, or tamping.
  - 3. Do not use vibrators to transport concrete inside the forms.
  - 4. During all phases of operation, maintain a frequency of not less than 10,000 vibrations per minute per internal vibrator.
  - 5. Do not vibrate forms or reinforcement.

### **3.08 EQUIPMENT**

- A. Provide adequate number of units and power source at all times. Maintain spare units on hand to ensure adequacy.
- B. If, in the opinion of the Engineer, the equipment being used is not adequate to accomplish proper consolidation, the Engineer may order delay in further placement of concrete until such equipment is available for use at the location of placement of concrete.

### **3.09 PROCEDURES**

- A. Limit duration of vibration to time necessary to produce satisfactory consolidation without causing segregation of aggregates.
- B. Insert the vibrator so as to penetrate the lift to immediately below that one (1) being placed, and manipulate to blend the two (2) lifts.
- C. Do not insert the vibrator into lower courses which have begun to set.
- D. Use the vibrator to melt down the concrete as it is being placed, and use the vibrator to consolidate the mass of concrete.
- E. In the case of wall construction, assign at least one (1) vibrator and vibrator-operator to melting down the mix; and assign at least one (1) other vibrator and vibrator-operator to consolidating the mass of concrete.

- F. Spacing between insertions of the vibrator which is unused to consolidate phase be more than 18 inches apart.
- G. Maintenance of vibrators: Initiate a maintenance program for the vibrators to assure that they are operating at peak efficiency at all times, and to facilitate effective consolidation of the concrete.

### **3.10 JOINTS**

- A. Construction joints:
  - 1. Horizontal construction joints will not be permitted except as may be shown on the Drawings.
  - 2. If construction joints necessary for the progress of the Work are not shown on the Drawings, show them in complete detail on the Shop Drawings required under Paragraph 1.05.
  - 3. For slabs on grade, locate the unindicated joints in a manner to divide the slab into areas not in excess of 600 square feet, with one (1) dimension being not greater than 120 percent of the other dimension.
  - 4. Provide keyways at least 1-1/2 inches deep in all construction joints in walls, slabs, and between footings and walls.
  - 5. Place construction joints perpendicular to the main reinforcement.

### **3.11 CONTROL JOINTS IN SLABS ON GRADE**

- A. Provide control joints in slabs on grade to form panels or patterns as shown on Drawings or at a maximum of 30 feet square.
- B. In hot weather, control joints shall be cut within 4 hours following slab finishing. In cold weather, control joints shall be cut within 12 hours following slab finishing.
- C. Caulk in accordance with provisions of Section 07 9005 - Joint Sealers.
- D. Prepare previously placed concrete by cleaning with sandblasting and apply bonding agent in accordance with the manufacturer's instructions.

### **3.12 CONCRETE FINISHING**

- A. Finish of Formed Surfaces:
  - 1. Rough Form Finish:
    - a. Provide as-cast rough form finish to formed concrete surfaces that are to be concealed in the Finish Work or by any other construction.
    - b. Standard rough form finish shall be the concrete surface having the texture imparted by the form facing material used, with tie holes and defective areas repaired and patched, and all fins and other projections exceeding 1/4 inch in height rubbed down or chipped off.
  - 2. Smooth Form Finish:
    - a. Provide as-cast smooth form finish for formed architectural concrete surfaces that are to be exposed to view, or that are to be covered with a coating material other than cement plaster applied directly to the concrete.
    - b. Produce smooth form finish by selecting form material to impart a smooth, hard, uniform texture and arranging them orderly and symmetrically with a minimum of seams. Place smooth form material on finish side of form face to implement acceptable/approved intent of finish appearance. Submit plan to Architect for approval of method and verification of conformance requirement.
    - c. Repair and patch defective areas with all fins and other projections completely removed and smoothed.
    - d. Related unformed surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces occurring adjacent to formed surfaces, strike off smooth and finish with a smooth troweled finish.
    - e. Proportion concrete mixtures to maintain designated colors and uniformity of color. Use the same material and proportions throughout the project. Avoid changes in quantity of cementitious materials per unit volume of concrete. Use only one type and one (1) brand of cement from one (1) mill, only one (1) source and one (1) nominal maximum size of coarse aggregate, only one (1) source of fine aggregate, and only one (1) placing consistency.
    - f. Do not allow vibrators to contact formwork for exposed concrete surfaces. Where a smooth-rubbed or similar finish is specified, work the coarse aggregate back

- from the forms by spading or form vibration, leaving a full surface of mortar but avoiding surface voids.
- g. Prevent damage to concrete from formwork removal. Do not pry against face of concrete. Use only wooden wedges to separate forms from concrete.
- h. Where as-cast finishes are specified, the total area requiring repair shall not exceed 2 square feet in each 1,000 square foot of as-cast surface. This is in addition to tie-hole patches.
- i. Repairs in as-cast architectural concrete shall match color and texture of surrounding surfaces.
- B. Repair surface defects, including tie holes, immediately after removing formwork.
- C. Unexposed Form Finish: Rub down or chip off fins or other raised areas 1/4 inch or more in height.
- D. Exposed Form Finish: Rub down, chip off and smooth fins and other raised areas 1/8 inch or more in height. Provide finish as follows:
  1. Smooth Rubbed Finish: Wet concrete and rub with carborundum brick or other abrasive, not more than 24 hours after form removal. Apply surface coating of silica sand and Portland cement to achieve uniform smooth texture. Use Acryl 60 admixture with water, reference Section 03 1000 - Concrete Forming and Accessories.

### 3.13 TOLERANCES

- A. Measure for F(F) and F(L) tolerances for floors in accordance with ASTM E 1155, within 72 hours after slab installation. Submit tolerance readings to Engineer.
- B. Reference Table A in this Section for tolerances.
- C. Finish concrete to achieve the following tolerances:
  1. Sand bed terrazzo and ceramic tile:
    - a. Test Area: F(F): 35, F(L): 25.
    - b. Minimum Local F Number: F(F): 15, F(L): 10.
  2. Carpeted areas, thin-set terrazzo flooring, resilient flooring, and exposed concrete floors:
    - a. Test Area: F(F): 25, F(L): 20.
    - b. Minimum Local F Number: F(F): 17, F(L): 15.
  3. Wood flooring in gymnasiums:
    - a. Test Area: F(F): 50, F(L): 30.
    - b. Minimum Local F Number: F(F): 35, F(L): 20.
- D. Levelness F-number does not apply to suspended slabs.
- E. Correction of the slab surface is required.
  1. If the composite value of the entire floor installation measures less than either of the specified overall F-numbers.
  2. If any individual section measures less than either of the specified minimum local F(F)/F(L) number.
- F. Correct slab surfaces by grinding, planing, or by removal and replacement of the defective area(s) as determined by the Architect/Engineer.

### 3.14 MISCELLANEOUS CONCRETE ITEMS

- A. Junction with existing concrete building construction:
- B. At floor slab and below, clean existing concrete of earth and foreign materials, and place new concrete against the existing construction.

### 3.15 CONCRETE SIDEWALKS

- A. Expansion Joints: Expansion joints shall be of the pre-molded type and not less than 1/2 inch thick. The joint filler shall consist of cane or other long fibers of cellular nature, uniformly impregnated with asphalt. The asphalt content shall be between 35 percent and 50 percent by weight.
  1. After sidewalk has cured, cut down expansion joints 1/2 inch below the surface of sidewalk. Apply sealant per Section 07 9005 - Joint Sealers.
- B. Mixing Concrete: All concrete shall be machine mixed or transit mixed. Transit mixing shall conform to the requirements for transit mixed concrete as described in Serial Designation C94-48 of the American Society of Testing Materials, or later revision thereof.

- C. Mixing shall not be started sooner than 3 minutes before the concrete is to be poured. Transit mixed concrete shall not be mixed while traveling.
- D. Mixing shall be continued at least one minute after all materials are in the drum, at a speed between 12 and 18 revolutions per minute. The volume per batch shall not exceed the manufacturers rated capacity of the mixer.
- E. Placing Concrete: Before pouring, all hardened concrete and other foreign materials shall be removed from the space between the forms. All forms, unless oiled, shall be thoroughly wetted. The subgrade shall also be thoroughly wetted.
  - 1. Concrete shall be conveyed from the mixer to the forms as rapidly as possible and by such methods which will prevent the separation or loss of ingredients. If conveyed by chuting, the angle of the chute with the horizontal shall be such as to allow the concrete to flow without separation. The end of the chute shall be as close as possible to the point of deposit.
  - 2. Concrete shall be placed in the forms as near to the final position as possible in order to avoid rehandling.
- F. Forming: Forms for concrete sidewalks shall be set to the line and grade shown on the Drawings or as established by the Engineer. Forms shall be set so as the finished slab shall pitch toward the street 1/4 inch per 1 foot of sidewalk width or as indicated on the Drawings.
  - 1. In general, walks shall be 4 inches thick. The entire thickness shall be made in one (1) monolithic pour.
  - 2. The type of form used, whether metal or wood, shall be of proper dimensions to provide the required depth for the full width of the slab.
- G. Wood forms shall be of sound lumber, free from knot holes, loose knots or other defects. Dressed 2 inches x 4 inches will not be allowed. Full dimensions must be maintained.
  - 1. Forms shall be properly anchored and braced to prevent any movement or bowing of the forms during pouring.
  - 2. Expansion joints of the type previously specified shall be placed along all curbs or structures, and transversely across the slab at each property line as determined by the Engineer. Joints shall extend for the full depth of the slab.
- H. Dividers shall be placed so as to produce a transverse joint for the full depth of the slab at intervals of four (4) times the sidewalk width, up to 7 feet or as directed by the Engineer. Dividers shall be of the same material as the side forms and shall produce a smooth surface for the full depth of the slab. Dividers are not to be removed until the concrete has hardened.
  - 1. After the dividers have been removed and before the next adjoining section of walk is poured, one (1) thickness of tar paper shall be placed between the finished slab and the new poured concrete.
  - 2. In addition, transverse control joints shall be scored on the surface of the walk at 4 foot intervals for 4 foot wide walks and at 5 foot intervals for 5 foot wide walks and so on, up to 7 feet in width. Sidewalk of greater than 7 feet width shall be scored so no blocks less than 4 feet x 4 feet and greater than 7 feet x 7 feet. Scoring shall be done with an approved edging tool of 1/4 inch radius.
- I. Surface Finish: The surface of concrete sidewalks shall have a wood float or light broom finish. Care shall be taken that the surface is not over floated. All edges and joints shall be finished with an approved edging tool of 1/4 inch radius.
- J. Curing: Immediately after finishing, the concrete shall be protected from fast drying by covering with heavy paper and straw or burlap. The covering should be kept damp and remain in place for at least 7 days.
- K. Subgrading: Subgrading work shall be performed as specified under Sections 31 2316 - Excavating, 31 2323 - Fill, and 31 2200 - Grading. Finish grading and performed seeding shall be as specified under Section 31 2200 - Grading.

### **3.16 CONCRETE CURB**

- A. Concrete curb shall be conventionally formed or slip formed to the size and shape shown on the Detail Sheets.
- B. Conventionally Formed Curb:

1. Casting Segments: Curb shall be cast in segments having a uniform length of approximately 20 feet.
  2. Segments shall be separated by construction joints with provisions made at each joint for 1/4 inch expansion. When the curb is constructed next to cement concrete pavement, the construction joint adjacent to the end of pavement slab shall line up with the pavement joint.
  3. Expansion Joints: Expansion joints 3/4 inch in width shall be formed with "Premolded Bituminous Joint Filler, "N.Y.S.D.O.T. Standard Specification, Section 705-07, placed at 20 foot intervals or as shown on the plans.
  4. The filler material shall be cut to conform to the cross section of the curb. When curb is cast adjacent to cement concrete pavement constructed with expansion joints, expansion joints in the curb shall be located at expansion joints in the pavement.
- C. Forms shall be steel or wood, straight, free from warp, and of such construction that there will be no interference to inspection for grade or alignment. All forms shall extend for the full curb depth and shall be braced and secured adequately so that no displacement from alignment will occur during placing of concrete.
- D. Concrete Placing and Vibrating: Concrete shall be placed in the forms in accordance with the applicable requirements and shall be compacted with an approved, immersion type mechanical vibrator. The vibrator shall be of the size and weight capable of thoroughly vibrating the entire mass without damaging or malaligning the forms and shall be approved by the Engineer. Forms shall be left in place for 24 hours or until the concrete has sufficiently hardened, as determined by the Engineer, so that they can be removed without injury to the curb or curb and gutter. Upon removal of the forms, the exposed faces of the curb or curb and gutter shall be immediately rubbed to uniform surface. Rubbing shall be accomplished by competent finishers. No plastering will be permitted.
- E. Concrete Curing: Curing of the curb or curb and gutter shall comply with the requirements of N.Y.S.D.O.T. Standard Specification, Section 502-3.10, Curing. Minimum curing periods for the various types of curing materials used shall comply with the requirements of Table 502-2.
- F. Protection: The Contractor shall keep the curb or curb and gutter clean, aligned, and protected from damage until final acceptance of the Work. Any curb or curb and gutter damaged prior to the final acceptance of the Work shall be repaired or replaced at the Contractor's expense.

### **3.17 REMEDIAL WORK**

- A. General: Reinforce or replace Deficient Work as directed by the Engineer and at no additional cost to the Owner.
- B. Patching: Repair defective areas and fill form-tie holes and similar defects in accordance with Chapter 9 of ACI 301. Where, in the opinion of the Engineer, surface defects such as honeycomb occur, repair the defective areas as directed by the Engineer.

### **3.18 CURING AND PROTECTION**

- A. Comply with requirements of ACI 308R. Immediately after placement, protect concrete from premature drying, excessively hot or cold temperatures, and mechanical injury.
- B. Maintain concrete with minimal moisture loss at relatively constant temperature for period necessary for hydration of cement and hardening of concrete.
  1. Normal concrete: Not less than 7 days.
- C. Formed Surfaces: Cure by moist curing with forms in place for full curing period.
- D. Surfaces Not in Contact with Forms:
  1. Slabs and Floors to Receive Adhesive-Applied Flooring: Curing compounds and other surface coatings are usually considered unacceptable by flooring and adhesive manufacturers. If such materials must be used, either obtain the approval of the flooring and adhesive manufacturers prior to use or remove the surface coating after curing to flooring manufacturer's satisfaction.
  2. Initial Curing: Start as soon as free water has disappeared and before surface is dry. Keep continuously moist for not less than three days by saturated burlap.
    - a. Saturated Burlap: Saturate burlap-polyethylene and place burlap-side down over floor slab areas, lapping ends and sides; maintain in place.
  3. Final Curing: Begin after initial curing but before surface is dry.

- a. Moisture-Retaining Sheet: Lap strips not less than 3 inches and seal with waterproof tape or adhesive; secure at edges.
- b. Curing Compound: Apply in two (2) coats at right angles, using application rate recommended by manufacturer.

### **3.19 FIELD QUALITY CONTROL**

- A. An independent testing agency will perform field quality control tests, as specified in Section 01 4000 - Quality Requirements.
- B. Provide free access to concrete operations at Project Site and cooperate with appointed firm.
- C. Submit proposed mix design of each class of concrete to inspection and testing firm for review prior to commencement of concrete operations.
- D. Tests of concrete and concrete materials may be performed at any time to ensure conformance with specified requirements.
- E. Compressive Strength Tests: ASTM C 39/C 39M. For each test, mold and cure three (3) concrete test cylinders. Obtain test samples for every of each class 50 cubic yards.
- F. Take one (1) additional test cylinder during cold weather concreting, cured on Job Site under same conditions as concrete it represents.
- G. Perform one (1) slump test for each set of test cylinders taken, following procedures of ASTM C143/C143M.
- H. Perform one (1) air content test for each set of test cylinders taken following procedures of ASTM C231 or ASTM C173.

### **3.20 DEFECTIVE CONCRETE**

- A. Defective Concrete: Concrete not conforming to required lines, details, dimensions, tolerances or specified requirements.
- B. Repair or replacement of defective concrete will be determined by the Architect/Engineer. The cost of additional testing shall be borne by Contractor when defective concrete is identified.
- C. Do not patch, fill, touch-up, repair, or replace exposed concrete except upon express direction of Architect/Engineer for each individual area.

### **3.21 PROTECTION**

- A. Do not permit traffic over unprotected concrete floor surface until fully cured.

**END OF SECTION**

## **SECTION 04 2000 UNIT MASONRY**

### **PART 1 GENERAL**

#### **1.01 SECTION INCLUDES**

- A. Concrete block.
- B. Mortar and grout.
- C. Reinforcement and anchorage.

#### **1.02 REFERENCE STANDARDS**

- A. ASTM A641/A641M - Standard Specification for Zinc-Coated (Galvanized) Carbon Steel Wire 2019.
- B. ASTM A951/A951M - Standard Specification for Steel Wire for Masonry Joint Reinforcement 2016, with Editorial Revision (2018).
- C. ASTM A1064/A1064M - Standard Specification for Carbon-Steel Wire and Welded Wire Reinforcement, Plain and Deformed, for Concrete 2018a.
- D. ASTM C129 - Standard Specification for Nonloadbearing Concrete Masonry Units 2017.
- E. ASTM C140/C140M - Standard Test Methods for Sampling and Testing Concrete Masonry Units and Related Units 2020a.
- F. ASTM C270 - Standard Specification for Mortar for Unit Masonry 2019.
- G. TMS 402/602 - Building Code Requirements and Specification for Masonry Structures 2016.

#### **1.03 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Product Data: Provide data for masonry units, fabricated wire reinforcement, and mortar.
- C. Manufacturer's Certificate: Certify that masonry units meet or exceed specified requirements.

#### **1.04 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.
- B. Manufacturer Qualifications: Company specializing in manufacturing the type of products specified in this section with minimum three years of documented experience.
- C. Installer Qualifications: Company specializing in performing work of the type specified and with at least three years of documented experience.

#### **1.05 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver, handle, and store masonry units by means that will prevent mechanical damage and contamination by other materials.

### **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 depth of 6 inches.
  - 2. Non-Loadbearing Units: ASTM C129.
    - a. Hollow block.
    - b. Manufacturers:
      - 1) Substitutions: See Section 01 6000 - Product Requirements.

#### **2.02 REINFORCEMENT AND ANCHORAGE**

- A. Manufacturers:
  - 1. Substitutions: See Section 01 6000 - Product Requirements.
- B. Joint Reinforcement: Use ladder type joint reinforcement where vertical reinforcement is involved and truss type elsewhere, unless otherwise indicated.

- C. Single Wythe Joint Reinforcement: ASTM A951/A951M.
  - 1. Type: Truss.
  - 2. Material: ASTM A1064/A1064M steel wire, mill galvanized to ASTM A641/A641M Class 3.
  - 3. Size: 0.1483 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.

### **2.03 MORTAR AND GROUT MIXING**

- A. Mortar for Unit Masonry: ASTM C270, using the Proportion Specification.
  - 1. Interior, non-loadbearing masonry: Type O.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that field conditions are acceptable and are ready to receive masonry.
- B. Verify that related items provided under other sections are properly sized and located.
- C. Verify that built-in items are in proper location, and ready for roughing into masonry work.

### **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 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: Stacked.
  - 2. Coursing: One unit and one mortar joint to equal 8 inches.
  - 3. Mortar Joints: Concave.

### **3.04 PLACING AND BONDING**

- A. Lay hollow masonry units with face shell bedding on head and bed joints.
- B. Buttering corners of joints or excessive furrowing of mortar joints is not permitted.
- C. Remove excess mortar and mortar smears as work progresses.
- D. Do not shift or tap masonry units after mortar has achieved initial set. Where adjustment must be made, remove mortar and replace.
- E. Perform job site cutting of masonry units with proper tools to provide straight, clean, unchipped edges. Prevent broken masonry unit corners or edges.

### **3.05 REINFORCEMENT AND ANCHORAGE - GENERAL AND SINGLE WYTHE MASONRY**

- A. Unless otherwise indicated on drawings or specified under specific wall type, install horizontal joint reinforcement 16 inches on center.
- B. Embed longitudinal wires of joint reinforcement in mortar joint with at least 5/8 inch mortar cover on each side.
- C. Lap joint reinforcement ends minimum 6 inches.

### **3.06 TOLERANCES**

- A. Install masonry within the site tolerances found in TMS 402/602.

### **3.07 FIELD QUALITY CONTROL**

- A. An independent testing agency will perform field quality control tests, as specified in Section 01 4000 - Quality Requirements.
- B. Concrete Masonry Unit Tests: Test each variety of concrete unit masonry in accordance with ASTM C140/C140M for compliance with requirements of this specification.



### **3.08 CLEANING**

- A. Remove excess mortar and mortar droppings.
- B. Clean soiled surfaces with cleaning solution.

**END OF SECTION**

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## **SECTION 05 3100 STEEL DECKING**

### **PART 1 GENERAL**

#### **1.01 SECTION INCLUDES**

- A. Metal form deck.
- B. Bearing plates and angles.

#### **1.02 RELATED REQUIREMENTS**

- A. Section 03 2000 - Concrete Reinforcing.
- B. Section 03 3000 - Cast-in-Place Concrete: Concrete topping over metal deck.
- C. Section 04 2000 - Unit Masonry: Placement of anchors for bearing plates embedded in unit masonry assemblies.
- D. Section 05 5000 - Metal Fabrications: Steel angle concrete stops at deck edges.

#### **1.03 REFERENCE STANDARDS**

- A. ASTM A36/A36M - Standard Specification for Carbon Structural Steel 2014.
- B. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products 2017.
- 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. AWS D1.1/D1.1M - Structural Welding Code - Steel 2020.
- E. AWS D1.3/D1.3M - Structural Welding Code - Sheet Steel 2018.
- F. SDI (DM) - Publication No.30, Design Manual for Composite Decks, Form Decks, and Roof Decks 2007.

#### **1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittals procedures.
- B. Product Data: Provide deck profile characteristics, dimensions, structural properties, and finishes.
- C. Shop Drawings: Indicate deck plan, support locations, projections, openings, reinforcement, pertinent details, and accessories.

#### **1.05 QUALITY ASSURANCE**

- A. Design deck layout, spans, fastening, and joints under direct supervision of a Professional Structural Engineer experienced in design of this work and licensed in the State in which the Project is located.
- B. Welder Qualifications: Welding processes and welding operators qualified in accordance with AWS D1.1/D1.1M and AWS D1.3/D1.3M and dated no more than 12 months before start of scheduled welding work.

#### **1.06 DELIVERY, STORAGE, AND HANDLING**

- A. Cut plastic wrap to encourage ventilation.
- B. Separate sheets and store deck on dry wood sleepers; slope for positive drainage.

### **PART 2 PRODUCTS**

#### **2.01 MANUFACTURERS**

- A. Steel Deck:
  - 1. Nucor-Vulcraft Group: [www.vulcraft.com/#sle](http://www.vulcraft.com/#sle).

#### **2.02 STEEL DECK**

- A. All Deck Types: Select and design metal deck in accordance with SDI Design Manual.
  - 1. Calculate to structural working stress design and structural properties specified.
  - 2. Maximum Vertical Deflection of Form Deck: 1/360 of span.
- B. Metal Form Deck: Corrugated sheet steel:
  - 1. Galvanized Steel Sheet: ASTM A653/A653M, Structural Steel (SS) Grade 33/230, with G90/Z275 galvanized coating.

2. Minimum Base Metal Thickness: 20 gage.
3. Nominal Height: 1 Inch inch.
4. Formed Sheet Width: 32 inch.
5. Side Joints: Lapped, welded.
6. End Joints: Lapped, welded.

### **2.03 ACCESSORY MATERIALS**

- A. Bearing Plates and Angles: ASTM A36/A36M steel, galvanized per ASTM A123/A123M.
- B. Welding Materials: AWS D1.1/D1.1M.
- C. Fasteners: Galvanized hardened steel, self tapping.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify existing conditions prior to beginning work.

### **3.02 INSTALLATION**

- A. Erect metal deck in accordance with SDI Design Manual and manufacturer's instructions. Align and level.
- B. On steel supports provide minimum 1-1/2 inch bearing.
- C. At mechanically fastened male/female side laps fasten at 24 inches on center maximum.
- D. At welded male/female side laps weld at 18 inches on center maximum.
- E. Weld deck in accordance with AWS D1.3/D1.3M.
- F. Immediately after welding deck and other metal components in position, coat welds, burned areas, and damaged surface coating, with touch-up primer.

**END OF SECTION**

**SECTION 05 4000  
COLD-FORMED METAL FRAMING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Formed steel stud interior wall framing.
- B. Non-load bearing cold formed steel stud partition wall framing.

**1.02 REFERENCE STANDARDS**

- A. AISI S100-12 - North American Specification for the Design of Cold-Formed Steel Structural Members 2012.
- B. AISI S-100 - North American Specification for the Design of Cold Formed Steel Structural Members; American Iron and Steel Institute; Latest edition with supplements.
- C. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware 2016a.
- 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 A1003/A1003M - Standard Specification for Steel Sheet, Carbon, Metallic- and Nonmetallic-Coated for Cold-Formed Framing Members.
- F. ASTM C955 - Standard Specification for Cold-Formed Steel Structural Framing Members 2018, with Editorial Revision.
- G. ASTM C1007 - Standard Specification for Installation of Load Bearing (Transverse and Axial) Steel Studs and Related Accessories 2020.
- H. ASTM C1007 - Standard Specification for Installation of Load Bearing (Transverse and Axial) Steel Studs and Related Accessories.
- I. ASTM C1513 - Standard Specification for Steel Tapping Screws for Cold-Formed Steel Framing Connections.
- J. AWS D1.1/D1.1M - Structural Welding Code - Steel 2020.
- K. AWS D1.3/D1.3M - Structural Welding Code - Sheet Steel 2018.
- L. SSPC-Paint 20 - Zinc-Rich Primers (Type I, "Inorganic," and Type II, "Organic") 2002 (Ed. 2004).
- M. Steel Stud Manufacturer's Association (SSMA) - Member Directory.

**1.03 SUBMITTALS**

- A. See Section 01 3300 - Submittal Procedures for submittal process.
- B. Product Data: Provide data on standard framing members; describe materials and finish, product criteria, and limitations and [\_\_\_\_\_].
- C. Manufacturer's Installation Instructions: Indicate special procedures, conditions requiring special attention and special fastening requirements.

**1.04 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 New York State.
- 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 3 years documented experience and approved by manufacturer.

**1.05 DELIVERY, STORAGE, AND PROTECTION**

- A. Prevent exposure to weather by impervious cover or shelter. Material shall be stored flat and in a manner to prevent distortion.

**PART 2 PRODUCTS**

**2.01 MANUFACTURERS**

- A. Metal Framing:

1. ClarkDietrich Building Systems: [www.clarkdietrich.com](http://www.clarkdietrich.com).
  2. Marino: [www.marinoware.com](http://www.marinoware.com).
  3. The Steel Network, Inc.: [www.SteelNetwork.com](http://www.SteelNetwork.com).
  4. Substitutions: See Section 01 6000 - Product Requirements.
- B. Framing Connectors and Accessories:
1. Same manufacturer as metal framing.
  2. ClarkDietrich Building Systems: [www.clarkdietrich.com](http://www.clarkdietrich.com).
  3. Substitutions: See Section 01 6000 - Product Requirements.

## **2.02 FRAMING SYSTEM**

- A. Design Criteria: Provide completed framing system having the following characteristics:
1. Design: Calculate structural characteristics of cold-formed steel framing members according to AISI S100-12.
  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. 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.
  5. Able to accommodate construction tolerances, deflection of building structural members, and clearances of intended openings.
- B. Shop fabricate framing system to the greatest extent possible.
- C. Deliver to Site in largest practical sections.

## **2.03 FRAMING MATERIALS**

- A. Studs and Track: ASTM C 955; 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 of 33,000 psi. SSMA 600SXXX-54 studs are to be Grade 50 possessing a minimum yield of 50,000psi.
    - a. Exterior Studs: SSMA XXXS162-54 (1-5/8 inch flange, 16 gauge)
    - 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 gauge or heavier.
  2. Stud Depth: Depth of studs shall be as indicated.
  3. Galvanized in accordance with ASTM A 955, G60/Z180 coating.

## **2.04 ACCESSORIES**

- A. Bracing, Furring, and 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.

## **2.05 FASTENERS**

- A. Self-Drilling, Self-Tapping Screws, Bolts, Nuts and Washers: Hot dip galvanized per ASTM A153/A153M.
- B. Anchorage Devices: Powder actuated, Drilled expansion bolts, and anchor bolts.

# **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. Screws:
  - 1. Screw shall be self-tapping type, size, and locations shall be as required for situation. Screws shall be DrillFlex Structural Fasteners as manufactured by Elco Industries, Inc., or equal.
  - 2. Screw penetration through joined materials shall not be less than three (3) exposed screw threads.
  - 3. Contractor shall refer to installation instructions published by the screw manufacturer and ASTM C 954 for minimum spacing and edge distance requirements and torque requirements.
- B. Concrete Anchors:
  - 1. Anchor Bolts, Epoxy Bolts, Screw Type Fasteners, and Powder Actuated Fasteners: Fasteners shall be type as indicated on the Drawings and approved by the Architect/Engineer. Locations of fasteners shall be as indicated on the Drawings and recommended by the cold form metal framing manufacturer.

### **3.03 INSTALLATION OF STUDS**

- A. Install components in accordance with ASTM C1007 requirements and ASTM C1007 requirements.
- B. Track shall rest on a continuous bearing surface. If not provided, set bottom track in high strength non-shrink grout.
- C. Studs shall be installed seated squarely against the web of the top and bottom track to assure transfer of axial load. Studs shall be plumbed, aligned and secured to the continuous runner track at each end and each side before the installation of components with induce axial load.
- D. Bridging, as approved in the Shop Drawings, shall be installed before loading.
- E. Provide sealant to concrete or masonry surfaces prior to anchoring tracks.
- F. Attach cross studs to studs for attachment of fixtures anchored to walls.
- G. Install framing between studs for attachment of mechanical and electrical items and to prevent stud rotation.
- H. Cutting of steel framing shall be by saw, shear, or plasma cutting equipment. Oxyacetylene torch cutting shall not be permitted.
- I. Install diagonal flat strap bracing as recommended by manufacturer.
- J. Install blocking as required for attachment of handrails.

**END OF SECTION**

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## **SECTION 05 5000 METAL FABRICATIONS**

### **PART 1 GENERAL**

#### **1.01 SECTION INCLUDES**

- A. Shop fabricated steel items.

#### **1.02 RELATED REQUIREMENTS**

- A. Section 03 3000 - Cast-in-Place Concrete: Placement of metal fabrications in concrete.
- B. Section 09 9000 - Painting and Coating.

#### **1.03 REFERENCE STANDARDS**

- A. ANSI A14.3 - American National Standard for Ladders -- Fixed -- Safety Requirements 2018.
- B. ASTM A36/A36M - Standard Specification for Carbon Structural Steel 2014.
- C. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products 2017.
- D. ASTM A283/A283M - Standard Specification for Low and Intermediate Tensile Strength Carbon Steel Plates 2018.
- E. ASTM A307 - Standard Specification for Carbon Steel Bolts, Studs, and Threaded Rod 60 000 PSI Tensile Strength 2014, with Editorial Revision (2017).
- F. ASTM A325 - Standard Specification for Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength 2014.
- G. ASTM A325M - Standard Specification for Structural Bolts, Steel, Heat Treated 830 MPa Minimum Tensile Strength (Metric) 2014.
- H. 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.
- I. AWS A2.4 - Standard Symbols for Welding, Brazing, and Nondestructive Examination 2012.
- J. AWS D1.1/D1.1M - Structural Welding Code - Steel 2020.
- K. SSPC-Paint 15 - Steel Joist Shop Primer/Metal Building Primer 1999 (Ed. 2004).
- L. SSPC-Paint 20 - Zinc-Rich Primers (Type I, "Inorganic," and Type II, "Organic") 2002 (Ed. 2004).
- M. SSPC-SP 2 - Hand Tool Cleaning 2018.
- N. CABO/ANSI A117.1 - 1992 - American National Standard; Accessible and Usable Buildings and Facilities.

#### **1.04 SUBMITTALS**

- A. See Section 01 3300 - Submittal Procedures for submittal process.
- 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.
- C. Welders' Certificates: Submit certification for welders employed on the Project, verifying AWS qualification within the previous 12 months.

### **PART 2 PRODUCTS**

#### **2.01 MATERIALS - STEEL**

- A. Steel Sections (W Shapes): A992.
- B. S, M, HP, and Channels: ASTM 572, Grade 50.
- C. Angles: ASTM A 36.
- D. Pipe: ASTM A 53, Grade B.

- E. General Plates: ASTM A 36.
- F. Plates: Plates to be bent or cold form; ASTM A 283, Grade C.
- G. Steel Bars and Bar-Size Shapes: ASTM A306, Grade 65, or ASTM A36.
- H. Fasteners: Provide zinc-coated fasteners for exterior use and where built into exterior walls. Select fasteners for the type, grade, and class required.
- I. Bolts, Nuts, and Washers: ASTM A307, Grade A, plain.
  - 1. Bolts, Nuts, and Washers: ASTM A 325 (ASTM A 325M), Type 1, Grade A, galvanized to ASTM A 153/A 153M where connecting galvanized components.
  - 2. Lag bolts: Square-head type, Fed. Spec. FF-B-561.
  - 3. Machine screws: Cadmium plated steel, Fed. Spec. FF-S-92.
  - 4. Wood Screws: Flat-head carbon steel, Fed. Spec. FF-S-111.
  - 5. Plain Washers: Round, carbon steel, Fed. Spec. FF-W-92.
  - 6. Masonry anchorage devices: Expansion shields, Fed. Spec. FF-S-325
  - 7. Toggle bolts: Tumble-wing type, Fed. Spec. FF-B-588, type, class, and style as required.
  - 8. Lock washers: Helical spring type carbon steel, Fed. Spec. FF-W-84.
- J. Welding Materials: AWS D1.1/D1.1M; type required for materials being welded.
- K. Shop and Touch-Up Primer: SSPC-Paint 15. Primer selected shall be compatible with finish coats of paint. Coordinate selection of metal primer with actual finish paint provided under Section 09 9000 - Painting and Coating.
- L. Touch-Up Primer for Galvanized Surfaces: SSPC-Paint 20, Type I - Inorganic, complying with VOC limitations of authorities having jurisdiction.

## **2.02 FABRICATION**

- A. Work to dimensions shown or accepted on the Shop Drawings using proven details of fabrication and support.
- B. Fit and shop assemble items in largest practical sections for delivery to the Site.
- C. Fabricate items with joints tightly fitted and secured.
- D. Continuously seal joined members by intermittent welds and plastic filler.
- E. 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. Supply components required for anchorage of fabrications. Fabricate anchors and related components of same material and finish as fabrication except where specifically noted otherwise.

## **2.03 FABRICATED ITEMS**

- A. Channels and Plates Not Attached to Structural Framing: For support of partial partition support; prime paint finish.

## **2.04 FINISHES - STEEL**

- A. Prime Paint Steel Items:
  - 1. Exceptions:
    - a. Galvanize items to be embedded in concrete and items to be imbedded in masonry.
    - b. 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: 2 coats.

## **2.05 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 60 inches.

- E. Maximum Deviation From Plane: 1/16 inch in 60 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, and free from distortion or defects.
- B. Provide for erection load, and for sufficient temporary bracing to maintain true alignment until completion of erection and installation of permanent attachments.
- C. Perform field welding in accordance with AWS D1.1/D1.1M.
- D. Obtain approval prior to site cutting or making adjustments not scheduled.
- E. After erection, prime welds, abrasions, and surfaces not shop primed or galvanized, 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**

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**SECTION 05 5213  
PIPE AND TUBE RAILINGS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Wall mounted handrails.

**1.02 RELATED REQUIREMENTS**

- A. Section 09 2116 - Gypsum Board Assemblies: Placement of backing plates in stud wall construction.

**1.03 REFERENCE STANDARDS**

- A. AAMA 611 - Voluntary Specification for Anodized Architectural Aluminum 2014 (2015 Errata).
- B. ADA Standards - Americans with Disabilities Act (ADA) Standards for Accessible Design 2010.
- C. ASTM B241/B241M - Standard Specification for Aluminum and Aluminum-Alloy Seamless Pipe and Seamless Extruded Tube 2016.
- D. ASTM B429/B429M - Standard Specification for Aluminum-Alloy Extruded Structural Pipe and Tube 2020.
- E. ASTM B483/B483M - Standard Specification for Aluminum and Aluminum-Alloy Drawn Tubes for General Purpose Applications 2020.
- F. ASTM E935 - Standard Test Methods for Performance of Permanent Metal Railing Systems and Rails for Buildings 2013, with Editorial Revision.

**1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. Shop Drawings: Indicate profiles, sizes, connection attachments, anchorage, size and type of fasteners, and accessories.
- C. Samples: Submit two, 12 inch long samples of handrail. Submit two samples of elbow, wall bracket, and end stop.

**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: Welding processes and welding operators qualified within previous 12 months.
- C. Fabricator Qualifications:
  - 1. A company specializing in manufacturing products specified in this section, with not less than ten years of documented experience.

**PART 2 PRODUCTS**

**2.01 MANUFACTURERS**

- A. Handrails and Railings:
  - 1. Avcon Railing Systems; Presidential Aluminum: [www.avcon.com/#sle](http://www.avcon.com/#sle).
  - 2. ATR Technologies Inc; Aluminum Multi-Line Railing: <http://www.atr-technologies.com/#sle>.
  - 3. Superior Aluminum Products, Inc; Series 500: [www.superioraluminum.com/#sle](http://www.superioraluminum.com/#sle).

**2.02 RAILINGS - GENERAL REQUIREMENTS**

- A. Design, fabricate, and test railing assemblies in accordance with the most stringent requirements of applicable local code.
- B. Distributed Loads: Design railing assembly, wall rails, and attachments to resist distributed force of 75 pounds per linear foot applied to the top of the assembly and in any direction, without damage or permanent set. Test in accordance with ASTM E935
- C. Allow for expansion and contraction of members and building movement without damage to connections or members.

- D. Dimensions: See drawings for configurations and heights.
- E. 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 stud walls, provide backing plates, for bolting anchors.
- F. Provide slip-on non-weld mechanical 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.

## **2.03 ALUMINUM MATERIALS**

- A. Aluminum Pipe: Schedule 40; ASTM B429/B429M, ASTM B241/B241M, or ASTM B483/B483M.
- B. Welding Fittings: No exposed fasteners; cast aluminum.

## **2.04 FABRICATION**

- A. Accurately form components to suit specific project conditions and for proper connection to building structure.
- B. Fit and shop assemble components in largest practical sizes for delivery to site.
- C. Fabricate components with joints tightly fitted and secured. Provide spigots and sleeves to accommodate site assembly and installation.
- D. 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.

## **2.05 ALUMINUM FINISHES**

- A. Class I Natural Anodized Finish: AAMA 611 AA-M12C22A41 Clear anodic coating not less than 0.7 mils thick.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that field conditions are acceptable and are ready to receive work.

### **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. Install railings in compliance with ADA Standards for accessible design at applicable locations.
- D. Anchor railings securely to structure.
- E. Conceal anchor bolts and screws whenever possible. Where not concealed, use flush countersunk fastenings.

**END OF SECTION**

**SECTION 06 1000  
ROUGH CARPENTRY**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Miscellaneous framing and sheathing.
- B. Concealed wood blocking, nailers, and supports.

**1.02 RELATED REQUIREMENTS**

- A. Section 01 6116 - Volatile Organic Compound (VOC) Content Restrictions.
- B. Section 05 5000 - Metal Fabrications: Miscellaneous steel connectors and support angles for wood framing.

**1.03 REFERENCE STANDARDS**

- A. AFPA (WFCM) - Wood Frame Construction Manual for One- and Two-Family Dwellings 2012.
- 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. AWPAC2 - Lumber, Timber, Bridge Ties and Mine Ties -- Preservative Treatment by Pressure Processes; American Wood-Preservers' Association; 2003.
- E. AWPAC20 - Structural Lumber -- Fire Retardant Treatment by Pressure Processes; American Wood-Preservers' Association; 2003.
- F. PS 1 - Structural Plywood 2009 (Revised 2019).
- G. PS 20 - American Softwood Lumber Standard 2020.
- H. SPIB (GR) - Grading Rules 2014.

**1.04 SUBMITTALS**

- A. See Section 01 3300 - Submittal Procedures for submittal process.
- B. Manufacturer's Certificate: Certify that wood products supplied for rough carpentry meet or exceed specified requirements.

**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.

**PART 2 PRODUCTS**

**2.01 GENERAL REQUIREMENTS**

- A. Dimension Lumber: Comply with PS 20 and requirements of specified grading agencies.
  - 1. 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.
- B. Lumber fabricated from old growth timber is not permitted.

**2.02 DIMENSION LUMBER**

- A. Grading Agency: National Lumber Grades Authority (NGLA).
- B. Grading Agency: Southern Pine Inspection Bureau, Inc; SPIB (GR).
- C. Douglas Fir/Southern Yellow Pine.
- D. Fb: 1200 psi
- E. Sizes: Nominal sizes as indicated on Drawings, S4S.
- F. Moisture Content: S-dry or MC19.
- G. Stud Framing (2 x 2 through 2 x 6):
  - 1. Species: Spruce-Pine-Fir (SPF).

2. Grade: No. 2.
- H. Miscellaneous Framing, Blocking, Nailers, Grounds, and Furring: Lumber: S4S, No. 2 or Standard Grade.
  1. Lumber: S4S, No. 2 or Standard Grade.
  2. Fire Resistance Characteristics: UL Flame Spread of 130-195.

### **2.03 ACCESSORIES**

- A. Fasteners and Anchors:
  1. Metal and Finish: Hot-dipped galvanized steel per ASTM A 153/A 153M, stainless steel, and/or galvanized G185 for high humidity and preservative-treated wood locations, unfinished steel elsewhere.
  2. Anchors: Toggle bolt type for anchorage to hollow masonry.

## **PART 3 EXECUTION**

### **3.01 INSTALLATION - GENERAL**

- A. Select material sizes to minimize waste.
- B. Re-use scrapS to the greatest extent possible; clearly separate scrapS for use on-site as accessory components including shims, bracing, and blocking.
- C. Contractor shall plumb and level existing conditions as required to provide a flat surface for new or existing equipment or material.

### **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.

### **3.03 SCHEDULES**

- A. Miscellaneous Blocking: S/P/F species, 19 percent maximum moisture content.

**END OF SECTION**



## **SECTION 07 9005 JOINT SEALERS**

### **PART 1 GENERAL**

#### **1.01 SECTION INCLUDES**

- A. Sealants and joint backing.

#### **1.02 RELATED REQUIREMENTS**

- A. Section 03 3000 - Cast In Place Concrete.

#### **1.03 REFERENCE STANDARDS**

- A. ASTM C834 - Standard Specification for Latex Sealants 2017.
- B. ASTM C920 - Standard Specification for Elastomeric Joint Sealants 2018.
- C. ASTM C1193 - Standard Guide for Use of Joint Sealants 2016.
- D. ASTM C 1330 - Standard Specification for Cylindrical Sealant Backing for Use with Cold Liquid-Applied Sealants.

#### **1.04 SUBMITTALS**

- A. See Section 01 3300 - Submittal Procedures for submittal process.
- B. Product Data: Provide data indicating sealant color availability.

#### **1.05 QUALITY ASSURANCE**

- A. Maintain one (1) copy of each referenced document covering installation requirements on-site.
- B. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this Section with minimum 7 years documented experience.
- C. Applicator Qualifications: Company specializing in performing the Work of this Section with minimum 7 years documented experience and approved by manufacturer.

#### **1.06 FIELD CONDITIONS**

- A. Maintain temperature and humidity recommended by the sealant manufacturer during and after installation.

### **PART 2 PRODUCTS**

#### **2.01 SEALANTS**

- A. Interior and Exterior Joint Sealant: 1-part, cold applied, non-sag silicone; ASTM C D5893.
  - 1. Approved by manufacturer for wide joints up to 1 inch.
  - 2. Color: To be selected by Architect/Engineer from manufacturer's standard range.
  - 3. Product: 888 manufactured by Dow Corning or equal.
  - 4. Applications: Use for:
    - a. Concrete to concrete expansion joints in floors.
  - 5. Warranty: Installers 5 year workmanship warranty and manufacturer's 10 year material warranty.

#### **2.02 ACCESSORIES**

- A. Primer: Non-staining type, recommended by sealant manufacturer to suit application.
- B. Joint Cleaner: Non-corrosive and non-staining type, recommended by sealant manufacturer; and compatible with joint forming materials.
- C. Joint Backing: Round foam rod compatible with sealant; ASTM C 1330, closed cell PVC; oversized 25 to 30 percent larger than joint width; Soft Backer-rod manufactured by Sonneborn or equal.
- D. Bond Breaker: Pressure sensitive tape recommended by sealant manufacturer to suit application.

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

- A. Verify that substrate surfaces are ready to receive Work.
- B. Verify that joint backing and release tapes are compatible with sealant.

### **3.02 PREPARATION**

- A. Remove loose materials and foreign matter that could impair adhesion of sealant.
- B. Clean and prime joints in accordance with manufacturer's instructions.
- C. Perform preparation in accordance with manufacturer's instructions and ASTM C1193.
- D. Protect elements surrounding the Work of this Section from damage or disfigurement.

### **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 where joint backing is not used.
- F. Install sealant free of air pockets, foreign embedded matter, ridges, and sags.
- G. Apply sealant within recommended application temperature ranges. Consult manufacturer when sealant cannot be applied within these temperature ranges.
- H. Tool joints concave unless otherwise indicated on Contract Drawings.

### **3.04 CLEANING**

- A. Clean adjacent soiled surfaces.

### **3.05 PROTECTION**

- A. Protect sealants until cured.

**END OF SECTION**

**SECTION 09 2116  
GYPSUM BOARD ASSEMBLIES**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Metal stud wall framing.
- B. Cementitious backing board.
- C. Joint treatment and accessories.

**1.02 RELATED REQUIREMENTS**

- A. Section 06 1000 - Rough Carpentry: Building framing and sheathing.
- B. Section 07 9200 - Joint Sealants: Sealing acoustical gaps in construction other than gypsum board or plaster work.
- C. Section 09 2216 - Non-Structural Metal Framing.
- D. Section 09 3000 - Tiling: Tile backing board.

**1.03 REFERENCE STANDARDS**

- A. ANSI A108.11 - American National Standard Specifications for Interior Installation of Cementitious Backer Units 2018.
- B. ANSI A118.9 - American National Standard Specifications for Test Methods and Specifications for Cementitious Backer Units 1999 (Reaffirmed 2016).
- C. ASTM A36/A36M - Standard Specification for Carbon Structural Steel 2014.
- D. ASTM A1003/A1003M - Standard Specification for Steel Sheet, Carbon, Metallic- and Nonmetallic-Coated for Cold-Formed Framing Members 2015.
- E. ASTM C475/C475M - Standard Specification for Joint Compound and Joint Tape for Finishing Gypsum Board 2017.
- F. ASTM C645 - Standard Specification for Nonstructural Steel Framing Members 2018.
- G. ASTM C754 - Standard Specification for Installation of Steel Framing Members to Receive Screw-Attached Gypsum Panel Products 2020.
- H. ASTM C840 - Standard Specification for Application and Finishing of Gypsum Board 2020.
- I. ASTM C1047 - Standard Specification for Accessories For Gypsum Wallboard and Gypsum Veneer Base 2019.
- J. ASTM C1396/C1396M - Standard Specification for Gypsum Board 2017.
- K. ASTM C1629/C1629M - Standard Classification for Abuse-Resistant Nondecorated Interior Gypsum Panel Products and Fiber-Reinforced Cement Panels 2019.
- L. ASTM D3273 - Standard Test Method for Resistance to Growth of Mold on the Surface of Interior Coatings in an Environmental Chamber 2016.
- M. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2021.
- N. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials 2020.
- O. GA-216 - Application and Finishing of Gypsum Panel Products 2016.
- P. ICC (IBC) - International Building Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- Q. UL 723 - Standard for Test for Surface Burning Characteristics of Building Materials Current Edition, Including All Revisions.

**1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Product Data: Provide data on metal framing, accessories, joint finishing system, and cement backer panel.

## **1.05 QUALITY ASSURANCE**

- A. Installer Qualifications: Company specializing in performing gypsum board installation and finishing, with minimum 3 years of experience.
- B. Manufacturer Qualifications: Member of Steel Stud Manufacturers Association (SSMA): [www.ssma.com/#sle](http://www.ssma.com/#sle).

## **PART 2 PRODUCTS**

### **2.01 GYPSUM BOARD ASSEMBLIES**

- A. Provide completed assemblies complying with ASTM C840 and GA-216.
  - 1. See PART 3 for finishing requirements.

### **2.02 METAL FRAMING MATERIALS**

- A. Manufacturers - Metal Framing, Connectors, and Accessories:
  - 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.
- B. 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:
  - 2. Runners: U shaped, sized to match studs.
- C. Non-structural Framing Accessories:
  - 1. Partial Height Wall Framing Support: Provides stud reinforcement and anchored connection to floor.
    - a. Materials: ASTM A36/A36M formed sheet steel support member with factory-welded ASTM A1003/A1003M steel plate base.
    - b. Products:
      - 1) ClarkDietrich; Pony Wall (PW): [www.clarkdietrich.com/#sle](http://www.clarkdietrich.com/#sle).
      - 2) Substitutions: See Section 01 6000 - Product Requirements.

### **2.03 BOARD MATERIALS**

- A. Manufacturers - Gypsum-Based Board:
  - 1. USG Corporation; [ ]: [www.usg.com/#sle](http://www.usg.com/#sle).
  - 2. Substitutions: See Section 01 6000 - Product Requirements.
- B. 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. Regular Board Thickness: 1/2 inch.
  - 4. Edges: Tapered.
  - 5. Products:
    - a. USG Corporation; Durock brand Cement Board with "Edgeguard"; [www.usg.com/#sle](http://www.usg.com/#sle).

### **2.04 GYPSUM WALLBOARD ACCESSORIES**

- A. Beads, Joint Accessories, and Other Trim: ASTM C1047, rigid plastic, galvanized steel, or rolled zinc, unless noted otherwise.
- B. Joint Materials: ASTM C475/C475M and as recommended by gypsum board manufacturer for project conditions.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that project conditions are appropriate for work of this section to commence.

### **3.02 FRAMING INSTALLATION**

- A. Metal Framing: Install in accordance with ASTM C754 and manufacturer's instructions.

- B. Studs: Space studs at 16 inches on center.
  - 1. Extend partition framing to structure in all locations.

### **3.03 BOARD INSTALLATION**

- A. Comply with ASTM C840, GA-216, and manufacturer's instructions.
- B. Cementitious Backing Board: Install over steel framing members and plywood substrate where indicated, in accordance with ANSI A108.11 and manufacturer's instructions.

### **3.04 INSTALLATION OF TRIM AND ACCESSORIES**

- A. Control Joints: Place control joints consistent with lines of building spaces and as indicated.
- B. Corner Beads: Install at external corners, using longest practical lengths.

### **3.05 JOINT TREATMENT**

- A. Finish gypsum board in accordance with levels defined in ASTM C840, as follows:
  - 1. Level 1: Fire-resistance-rated wall areas above finished ceilings, whether or not accessible in the completed construction.
- B. 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.
- C. Fill and finish joints and corners of cementitious backing board as recommended by manufacturer.

### **3.06 TOLERANCES**

- A. Maximum Variation of Finished Gypsum Board Surface from True Flatness: 1/8 inch in 10 feet in any direction.

**END OF SECTION**

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## **SECTION 09 3000 TILING**

### **PART 1 GENERAL**

#### **1.01 SECTION INCLUDES**

- A. Tile for wall applications.
- B. Ceramic accessories.
- C. 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 2116 - Gypsum Board Assemblies: Tile backer board.

#### **1.03 REFERENCE STANDARDS**

- A. ANSI A108/A118/A136 - American National Standard Specifications for the Installation of Ceramic Tile (Compendium) 2019.
- B. ANSI A108.1a - American National Standard Specifications for Installation of Ceramic Tile in the Wet-Set Method, with Portland Cement Mortar 2017.
- C. 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.
- D. ANSI A108.1c - Specifications for Contractors 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 Bed with Dry-Set or Latex-Portland Cement 1999 (Reaffirmed 2016).
- E. ANSI A108.2 - American National Standard General Requirements: Materials, Environmental and Workmanship 2019.
- F. ANSI A108.4 - American National Standard Specifications for Installation of Ceramic Tile with Organic Adhesives or Water Cleanable Tile-Setting Epoxy Adhesive 2009 (Revised).
- G. ANSI A108.5 - American National Standard Specifications for Installation of Ceramic Tile with Dry-Set Portland Cement Mortar or Latex-Portland Cement Mortar 1999 (Reaffirmed 2010).
- H. ANSI A108.6 - American National Standard Specifications for Installation of Ceramic Tile with Chemical Resistant, Water Cleanable Tile-Setting and -Grouting Epoxy 1999 (Reaffirmed 2010).
- I. ANSI A108.8 - American National Standard Specifications for Installation of Ceramic Tile with Chemical Resistant Furan Resin Mortar and Grout 1999 (Reaffirmed 2010).
- J. ANSI A108.9 - American National Standard Specifications for Installation of Ceramic Tile with Modified Epoxy Emulsion Mortar/Grout 1999 (Reaffirmed 2010).
- K. ANSI A108.10 - American National Standard Specifications for Installation of Grout in Tilework 2017.
- L. ANSI A108.11 - American National Standard Specifications for Interior Installation of Cementitious Backer Units 2018.
- M. ANSI A108.12 - American National Standard for Installation of Ceramic Tile with EGP (Exterior Glue Plywood) Latex-Portland Cement Mortar 1999 (Reaffirmed 2010).
- N. ANSI A108.13 - American National Standard for Installation of Load Bearing, Bonded, Waterproof Membranes for Thin-Set Ceramic Tile and Dimension Stone 2005 (Reaffirmed 2016).
- O. 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 2017.
- P. ANSI A118.3 - American National Standard Specifications for Chemical Resistant, Water Cleanable Tile-Setting and -Grouting Epoxy and Water Cleanable Tile-Setting Epoxy

Adhesive 2013 (Revised).

- Q. ANSI A118.9 - American National Standard Specifications for Test Methods and Specifications for Cementitious Backer Units 1999 (Reaffirmed 2016).
- R. ANSI A118.12 - American National Standard Specifications for Crack Isolation Membranes for Thin-Set Ceramic Tile and Dimension Stone Installation 2014.
- S. ANSI A137.1 - American National Standard Specifications for Ceramic Tile 2019.
- T. ASTM C150/C150M - Standard Specification for Portland Cement 2020.
- U. 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.
- V. TCNA (HB) - Handbook for Ceramic, Glass, and Stone Tile Installation 2019.

#### **1.04 SUBMITTALS**

- A. See Section 01 3000 - 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. 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 5 tiles of each type.

#### **1.05 QUALITY ASSURANCE**

- A. Maintain one copy of and ANSI A108/A118/A136 and TCNA (HB) on site.
- B. Manufacturer Qualifications: Company specializing in manufacturing the types of products specified in this section, with minimum five years of documented experience.
- C. Installer Qualifications: Natural Stone Institute (NSI) Accredited Commercial B Contractor (light commercial): [www.naturalstoneinstitute.org/#sle](http://www.naturalstoneinstitute.org/#sle).
- D. Installer Qualifications:
  - 1. Company specializing in performing tile installation, with minimum of five years of documented experience.
  - 2. Installer Certification:
    - a. Ceramic Tile Education Foundation (CTEF): Certified Tile Installer (CTI).

#### **1.06 DELIVERY, STORAGE, AND HANDLING**

- A. Protect adhesives from freezing or overheating in accordance with manufacturer's instructions.

#### **1.07 FIELD CONDITIONS**

- A. 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. Crossville, Inc.: [www.crossvilleinc.com/#sle..](http://www.crossvilleinc.com/#sle..)
  - 2. Substitutions: See Section 01 6000 - Product Requirements.
- B. Porcelain Tile, Type -Full Body: ANSI A137.1 standard grade.
  - 1. Moisture Absorption: 0 to 0.5 percent as tested in accordance with ASTM C373.
  - 2. Size: 12" by 24" inch, nominal.
  - 3. Thickness: 10.5 mm.
  - 4. Edges: Square.
  - 5. Surface Finish: Unglazed.
  - 6. Color: #ASK04- Glacier.
  - 7. Pattern: as shown on drawings.
  - 8. Products:
    - a. Crossville: Alaska Series.



- b. Substitutions: See Section 01 6000 - Product Requirements.

## **2.02 TRIM AND ACCESSORIES**

- A. Non-Ceramic Trim: Satin natural anodized extruded aluminum, style and dimensions to suit application, for setting using tile mortar or adhesive.
  - 1. Applications:
    - a. Open edges of wall tile.
    - b. Wall corners, outside and inside.
  - 2. Manufacturers:
    - a. Schluter-Systems: [www.schluter.com/#sle](http://www.schluter.com/#sle).
    - b. Substitutions: See Section 01 6000 - Product Requirements.

## **2.03 SETTING MATERIALS**

- A. Manufacturers:
  - 1. ARDEX Engineered Cements: [www.ardexamericas.com/#sle](http://www.ardexamericas.com/#sle).
  - 2. Bostik Inc: [www.bostik-us.com/#sle](http://www.bostik-us.com/#sle).
  - 3. LATICRETE International, Inc: [www.laticrete.com/#sle](http://www.laticrete.com/#sle).
  - 4. Substitutions: See Section 01 6000 - Product Requirements.
- B. Epoxy Adhesive and Mortar Bond Coat: ANSI A118.3.
  - 1. Products:
    - a. Substitutions: See Section 01 6000 - Product Requirements.

## **2.04 GROUTS**

- A. Manufacturers:
  - 1. ARDEX Engineered Cements: [www.ardexamericas.com/#sle](http://www.ardexamericas.com/#sle).
  - 2. Bostik Inc: [www.bostik-us.com/#sle](http://www.bostik-us.com/#sle).
  - 3. LATICRETE International, Inc; LATICRETE PERMACOLOR Grout: [www.laticrete.com/#sle](http://www.laticrete.com/#sle).
- B. Epoxy Grout: ANSI A118.3 chemical resistant and water-cleanable epoxy grout.
  - 1. Applications: Where indicated.
  - 2. Color(s): As selected by Architect from manufacturer's full line.
  - 3. Products:
    - a. ARDEX Engineered Cements; ARDEX WA: [www.ardexamericas.com/#sle](http://www.ardexamericas.com/#sle).
    - b. H.B. Fuller Construction Products, Inc; TEC AccuColor EFX Epoxy Special Effects Grout: [www.tecspecialty.com/#sle](http://www.tecspecialty.com/#sle).
    - c. LATICRETE International, Inc; LATICRETE SPECTRALOCK PRO Premium Grout: [www.laticrete.com/#sle](http://www.laticrete.com/#sle).
    - d. Substitutions: See Section 01 6000 - Product Requirements.

## **2.05 MAINTENANCE MATERIALS**

- A. Grout Sealer: Liquid-applied, moisture and stain protection for existing or new Portland cement grout.
  - 1. Composition: Water-based colorless silicone.

## **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.

### **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.

### **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. Sound tile after setting. Replace hollow sounding units.
- H. Keep control and expansion joints free of mortar, grout, and adhesive.
- I. Prior to grouting, allow installation to completely cure; minimum of 48 hours.
- J. Grout tile joints unless otherwise indicated. Use standard grout unless otherwise indicated.
- K. 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 - WALL TILE**

- A. Over cementitious backer units install in accordance with TCNA (HB) Method W223, organic adhesive.

#### **3.05 CLEANING**

- A. Clean tile and grout surfaces.

#### **3.06 PROTECTION**

- A. Do not permit traffic over finished floor surface for 4 days after installation.

**END OF SECTION**

**SECTION 09 6466  
WOOD ATHLETIC FLOORING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Wood athletic flooring.
- B. Subflooring.
- C. Sheet vapor retarder.
- D. Floor finishes.
- E. Surface finishing.

**1.02 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.

**1.03 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, 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 size and type fasteners and anchors.
  - 3. Indicate location, size, design, and color of game markings.
- D. Samples: Submit two samples 12 by 12 inch in size illustrating floor finish, color, and sheen.
- E. Manufacturer's Qualification Statement.
- F. Installer's Qualification Statement.

**1.04 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 10 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. Minimum 10 years of documented experience.
  - 2. MFMA accredited and approved by flooring manufacturer.

**1.05 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver materials and store off the floor in a well-ventilated, weather-tight space.

**1.06 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. Action Floor Systems; Action Anchor Flex: [www.actionfloors.com/#sle](http://www.actionfloors.com/#sle).
  - 2. Robbins Sports Surfaces; Eclipse SB Floor System: [www.robbinsfloor.com/#sle](http://www.robbinsfloor.com/#sle).

3. 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. Fixed, cushioned sleeper 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. Thickness: 25/32 inch.
  5. Width: 2-1/4 inches.
  6. Length: Random, minimum of 9 inches.
- B. Subflooring: Manufacturer's standard pre-engineered subfloor suitable for system indicated.
- C. Vapor Retarder: Polyethylene sheet, 6 mil thick; 2 inch wide tape for sealing sheet seams.

## **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 3 inch toe, pre-molded outside corners; black color.
- B. Transition Threshold - Aluminum: National Guard model composite sports floor transition assembly: NGP 8133 x 8144 x 8168N (Neoprene) x 8139 x10-24 MS/LA or approved equal.

## **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.
- B. Install solid blocking at doorways, under stacked bleachers, under locations of heavy equipment, and as shown on drawings, in accordance with flooring manufacturer's recommendations.
- 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. 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 game lines/markers in accordance with layout indicated on drawings.
  - 6. 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. Installation accessories.

#### **1.02 RELATED REQUIREMENTS**

- A. Section 01 6116 - Volatile Organic Compound (VOC) Content Restrictions.

#### **1.03 REFERENCE STANDARDS**

- A. ASTM E648 - Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source 2019a, with Editorial Revision (2020).
- B. ASTM F970 - Standard Test Method for Measuring Recovery Properties of Floor Coverings after Static Loading 2017.
- C. ASTM F1066 - Standard Specification for Vinyl Composition Floor Tile 2004 (Reapproved 2018).
- D. ASTM F1861 - Standard Specification for Resilient Wall Base 2016.
- E. ASTM F1913 - Standard Specification for Vinyl Sheet Floor Covering Without Backing 2019.
- F. NFPA 253 - Standard Method of Test for Critical Radiant Flux of Floor Covering Systems Using a Radiant Heat Energy Source 2019.
- G. NSF 332 - Sustainability Assessment for Resilient Floor Coverings 2015.

#### **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; including sizes, patterns and colors available; and installation instructions.
- C. Selection Samples: Submit manufacturer's complete set of color samples for Architect's initial selection.
- D. Installer's Qualification Statement.
- E. Maintenance Data: Include maintenance procedures, recommended maintenance materials, and suggested schedule for cleaning, stripping, and re-waxing.
- F. 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 Base: 5 linear feet of each type and color.

#### **1.05 QUALITY ASSURANCE**

- A. 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.

## **1.07 FIELD CONDITIONS**

### **PART 2 PRODUCTS**

#### **2.01 SHEET FLOORING**

- A. Vinyl Sheet Flooring- (SSV-1) - Type A: Homogeneous without backing, with color and pattern throughout full thickness.
  - 1. Manufacturers:
    - a. Tarkett; IQ Granit- "Micro": [www.commercial.tarkett.com/#sle..](http://www.commercial.tarkett.com/#sle..)
    - b. Substitutions: See Section 01 6000 - Product Requirements.
  - 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. Thickness: 0.080 inch nominal.
  - 5. Sheet Width: 66 inch minimum.
  - 6. Static Load Resistance: 1,000 psi minimum, when tested as specified in ASTM F970.
  - 7. Seams: Heat welded.
  - 8. Color: To be selected by Architect from manufacturer's full range..
- B. Welding Rod: Solid bead in material compatible with flooring, produced by flooring manufacturer for heat welding seams, and in color matching field color.

#### **2.02 TILE FLOORING**

- A. Vinyl Composition Tile (VCT) Class 2- through-pattern. Intent is to match existing VCT floor tile as close as possible.
  - 1. Manufacturers:
    - a. Armstrong Flooring, Inc; Excelon SDT, or any Premium Excelon that matches the current floor tile for color and visuals: [www.armstrongflooring.com/#sle..](http://www.armstrongflooring.com/#sle..)
    - b. Substitutions: See Section 01 6000 - Product Requirements.
  - 2. Minimum Requirements: Comply with ASTM F1066, 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. Size: 12 by 12 inch.
  - 5. Thickness: 0.125 inch.
  - 6. Pattern: as indicated on drawings.
  - 7. Colors: VCT-1 & VCT-2: Colors to be selected by Architect from manufacturer's full range to match existing for color and visual.

#### **2.03 RESILIENT BASE**

- A. Resilient Base: B-2: ASTM F1861, Type TS rubber, vulcanized thermoset; style as scheduled.
  - 1. Manufacturers:
    - a. Tarkett; [www.commercial.tarkett.com/#sle..](http://www.commercial.tarkett.com/#sle..)
    - b. Substitutions: See Section 01 6000 - Product Requirements.
  - 2. Height: 4 inch.
  - 3. Thickness: 0.125 inch.
  - 4. Finish: Satin.
  - 5. Length: Roll.
  - 6. Color: To be selected by Architect from manufacturer's full range (match existing in field).
- B. Vent Cove Wall Base- B-1 ASTM 1861, Type TS rubber Group 1- homogeneous composition of 100% synthetic rubber.
  - 1. Manufacturers:
    - a. Tarkett; [commercial.tarkett.com/#sle..](http://commercial.tarkett.com/#sle..)
    - b. Substitutions: See section 01 6000- Product Requirements.
  - 2. Height: 4 inches high with a 3" toe.
  - 3. Thickness: .260" (6.60 mm)
  - 4. Length: 4 ft. lengths.
  - 5. Color: to be selected by Architect from manufacturer's full range.



## **2.04 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. Adhesive for Vinyl Flooring:
  - 1. Manufacturers:
    - a. H.B. Fuller Construction Products, Inc; TEC Flexera Premium Universal Adhesive: [www.tecspecialty.com/#sle](http://www.tecspecialty.com/#sle).
    - b. Loba-Wakol, LLC; WAKOL D 3330 Luxury Vinyl Tile Adhesive: [www.loba-wakol.com/#sle](http://www.loba-wakol.com/#sle).
    - c. Stauf USA, LLC; D737 High-Tack: [www.staufusa.com/#sle](http://www.staufusa.com/#sle).
    - d. Substitutions: Section 01 6000 - Product Requirements.
- D. Moldings, Transition and Edge Strips: Same material as flooring.
  - 1. Manufacturers:
    - a. Tarkett; Slimline Transitions; [www.commercial.tarkett.com/#sle](http://www.commercial.tarkett.com/#sle).
    - b. Substitutions: See Section 01 6000 - Product Requirements.

## **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.

### **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.
- C. Clean substrate.

### **3.03 INSTALLATION - GENERAL**

- A. Starting installation constitutes acceptance of subfloor conditions.
- B. Install in accordance with manufacturer's written instructions.

### **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.

### **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. Install pattern as shown on drawings.

### **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.

### **3.07 CLEANING**

- A. Remove excess adhesive from floor, base, and wall surfaces without damage.
- B. Clean in accordance with manufacturer's written instructions.

### **3.08 PROTECTION**

- A. Prohibit traffic on resilient flooring for 48 hours after installation.

## **END OF SECTION**

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**SECTION 09 6700  
FLUID-APPLIED FLOORING**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Fluid-applied flooring- See Alternate GC-1.

**1.02 RELATED REQUIREMENTS**

- A. Section 01 6116 - Volatile Organic Compound (VOC) Content Restrictions.
- B. Section 07 9200 - Joint Sealants: Sealing joints between fluid-applied flooring and adjacent construction and fixtures.

**1.03 REFERENCE STANDARDS**

- A. ASTM E648 - Standard Test Method for Critical Radiant Flux of Floor-Covering Systems Using a Radiant Heat Energy Source 2019a, with Editorial Revision (2020).
- B. ASTM F710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring 2019, with Editorial Revision (2020).
- C. ICRI 310.2R - Selecting and Specifying Concrete Surface Preparation for Sealers, Coatings, Polymer Overlays, and Concrete Repair 2013.

**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. 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. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section with minimum three years documented experience.
- B. Applicator Qualifications: Company specializing in performing the work of this section.
  - 1. Minimum 3 years of documented experience.
- C. Supervisor Qualifications: Trained by product manufacturer , under direct full time supervision of manufacturer's own foreman.

**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. Obtain approval of mock-up by Architect before proceeding with work.
- C. Approved mock-up may remain as part of the Work, if accepted by Architect.

**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 65 degrees F.
- B. 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 Flooring:

Highland Falls-Fort Montgomery  
James I. O'Neill Renovation  
Project No. 2020-117

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Fluid-Applied Flooring  
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1. Stonhard; [www.stonhard.com/#sle](http://www.stonhard.com/#sle).
2. Substitutions: See Section 01 6000 - Product Requirements.

## 2.02 FLUID-APPLIED FLOORING SYSTEMS

- A. Fluid-Applied Flooring Type -Resinous.
  1. System Thickness: 3/16" to 1/4" nominal, when dry.
- B. Build of Broadcast or Liquid-rich type systems will not be accepted, and will result in disqualification from the bid.
- C. Acceptable Manufacturers:
  1. Stonhard, Inc.; Stoncrete EFX- Basis of Design.
- D. System Characteristics:
  1. Color and Pattern: choose from Mfg. Standards.
  2. Wearing Surface: Standard Smooth.
  3. Integral cove Base: None
  4. Overall System Thickness: 3/16" to 1/4" nominal when dry.
- E. System components: Manufacturer's standard components that are compatible with each other and as follows:
  1. Primer
    - a. Material Basis: Stoncrete Groutcoat
    - b. Resin: Epoxy
    - c. Formulation Description: (2) two-component, 100 percent solids.
    - d. Application Method: Squeegee and roller.
    - e. Number of Coats: (1) One.
  2. Mortar Base:
    - a. Material Design Basis: Stonclad EFX
    - b. Resin: Epoxy
    - c. Formulation Description: (4) Four-component, 100 percent solids.
    - d. Application Method: Metal/Plastic trowel.
      - 1) Thickness of coat: nominal 3/16" to 1/4".
      - 2) Number of Lifts: One.
    - e. Aggregates: Pigmented and natural blend aggregates.
  3. Groutcoat:
    - a. Material design basis: Stoncrete EFX Groutcoat
    - b. Resin: Epoxy.
    - c. Formulation Description: (2) two-component 100 percent solids.
    - d. Type: Clear.
    - e. Application Method: Squeegee and loop roller.
    - f. Finish: Standard.
    - g. Number of Coats: One.
  4. Sealcoat:
    - a. Material Design basis: Stonkote CE4.
    - b. Resin: Epoxy.
    - c. Formulation Description: (2) two-component 100 percent solids.
    - d. Type: Clear.
    - e. Finish: Standard.
    - f. Number of Coats: One.
  5. Topcoat:
    - a. Material Design Basis: Stonseal SK6 or Stonseal CF7.
    - b. Resin: Urethane.
    - c. Formulation Description: (2) two-component 100 percent solids.
    - d. Type: Clear.
    - e. Finish: Satin Micro-texture (SK6-SF).
    - f. Number of Coats: One- SK6.
      - 1) Products:
        - (a) Stonhard, Inc.; Stoncrete EFX..
        - (b) Substitutions: See Section 01 6000 - Product Requirements.

## **2.03 ACCESSORIES**

- A. Patching, leveling and fill material: Resinous product of or approved by resinous flooring manufacturer and recommended by the manufacturer for application indicated.
- B. Joint sealant: type recommended or produced by resinous flooring manufacturer for type of service and joint condition indicated. Allowances should be included for Stonflex MP7 joint fill material.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that subfloor surfaces are smooth and flat within the tolerances specified for that type of work and are ready to receive flooring.

### **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.

### **3.03 INSTALLATION - ACCESSORIES**

### **3.04 INSTALLATION - FLOORING**

- A. Apply in accordance with manufacturer's instructions.
- B. Apply each coat to minimum thickness indicated.
- C. Finish to smooth level surface.

### **3.05 PROTECTION**

- A. Prohibit traffic on floor finish for 48 hours after installation.
- B. Barricade area to protect flooring until fully cured.

**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. Scope:
  - 1. Finish surfaces exposed to view, unless fully factory-finished and unless otherwise indicated, including the following:
    - a. Interior:
      - 1) Concrete, Walls and Ceilings: Cast-in-place concrete, precast concrete, unglazed brick, fiber cement board, tilt-up, and plaster.
      - 2) Concrete Masonry Units: Concrete, split face, scored, smooth, high density, low density, and fluted.
      - 3) Metal: Aluminum and galvanized.
      - 4) Metal: Structural steel columns, joists, trusses, beams, miscellaneous and ornamental iron, structural iron, and other ferrous metal.
      - 5) Drywall: Walls, ceilings, gypsum board, and similar items.

**1.02 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. SCAQMD 1113 - Architectural Coatings 1977 (Amended 2016).
- C. SSPC-SP 1 - Solvent Cleaning 2015, with Editorial Revision (2016).
- D. SSPC-SP 6 - Commercial Blast Cleaning 2007.

**1.03 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements for submittal procedures.
- B. Certification: By manufacturer that paints and finishes comply with VOC limits specified.
- C. Applicator's qualification statement.
- D. Maintenance Data: Submit coating maintenance manual including finish schedule showing where each product/color/finish was used, product technical data sheets, safety data sheets (SDS), care and cleaning instructions, touch-up procedures, repair of painted and finished surfaces, and color samples of each color and finish used.
- E. 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 Paint and Finish Materials: 1 gallon of each color; from the same product run, store where directed.
  - 3. Label each container with color in addition to manufacturer's label.

**1.04 QUALITY ASSURANCE**

- A. Applicator Qualifications: Company specializing in performing the type of work specified with minimum 3 years experience and approved by manufacturer.

**1.05 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 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.

## **1.06 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).

### **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 - INTERIOR**

- A. Masonry CMU: Concrete, split face, scored, smooth, high density, low density, and fluted.
  - 1. Latex Systems:
    - a. 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. Semi-Gloss 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 Coat: Sherwin-Williams Pro Industrial Acrylic Semi-Gloss, B66-650 Series: [www.sherwin-williams.com/#sle](http://www.sherwin-williams.com/#sle).
- C. Drywall: Walls, ceilings, gypsum board, and similar items.
  - 1. Latex Systems:
    - a. Flat 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).
      - 2) 2nd and 3rd Coat: Sherwin-Williams ProMar 200 Zero VOC Latex Flat, B30-2600 Series: [www.sherwin-williams.com/#sle](http://www.sherwin-williams.com/#sle).

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that surfaces are ready to receive work as instructed by the product manufacturer.
- B. 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.

**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 05 5000 - Metal Fabrications: Corner guards fabricated from rolled metal sections or bent plate.
- B. Section 05 5000 - Metal Fabrications: Anchors for attachment of work of this section, concealed in wall.
- C. Section 05 5213 - Pipe and Tube Railings: Metal railings not intended to protect walls..
- D. Section 06 1000 - Rough Carpentry: Blocking for wall and corner guard anchors.

**1.03 REFERENCE STANDARDS**

- A. ASTM D256 - Standard Test Methods for Determining the Izod Pendulum Impact Resistance of Plastics 2010 (Reapproved 2018).
- B. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials 2021.
- C. ASTM E119 - Standard Test Methods for Fire Tests of Building Construction and Materials 2020.
- D. 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. Product Data: Indicate physical dimensions, features, wall mounting brackets with mounted measurements, anchorage details, and rough-in measurements.

**1.05 DELIVERY, STORAGE, AND HANDLING**

- A. Deliver wall and door protection items in original, undamaged protective packaging. Label items to designate installation locations.
- B. Store products in either horizontal or vertical position, in compliance with manufacturer's instructions.

**PART 2 PRODUCTS**

**2.01 MANUFACTURERS**

- A. Corner Guards:
  - 1. Construction Specialties, Inc; Heavy Duty Corner Guards: [www.c-sgroup.com/#sle](http://www.c-sgroup.com/#sle).
  - 2. Inpro: [www.inprocorp.com/#sle](http://www.inprocorp.com/#sle).
  - 3. Koroseal Interior Products: [www.koroseal.com/#sle](http://www.koroseal.com/#sle).

**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 - Surface Mounted:
  - 1. Material: Type 304 stainless steel, No. 4 finish, 16 gauge.
  - 2. Width of Wings: 1 1/2 inches.
  - 3. Corner: Square.
  - 4. Length: One piece.

**2.04 FABRICATION**

- A. Fabricate components with tight joints, corners and seams.

## **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.

### **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 4 inches above finished floor, unless directed otherwise.

### **3.03 CLEANING**

- A. Clean wall and door protection items of excess adhesive, dust, dirt, and other contaminants.

**END OF SECTION**

**SECTION 11 6623  
GYMNASIUM EQUIPMENT**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Overhead Supported Volleyball System

**1.02 REFERENCE STANDARDS**

- A. AWS D1.1/D1.1M - Structural Welding Code - Steel 2020.
- B. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

**1.03 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.

**1.04 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. 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. 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 three years of documented experience.
- B. Installer Qualifications: Company specializing in performing work of the type specified with minimum 10 years of experience.

**1.06 WARRANTY**

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.
- B. Provide 1 year manufacturer warranty for Overhead Volleyball System.

**PART 2 PRODUCTS**

**2.01 MANUFACTURERS**

- A. Gymnasium Equipment:
  - 1. Basis of Design Porter Athletic Equipment Company; Model No 91920100 Overhead Volleyball system: [www.porterathletic.com/#sle](http://www.porterathletic.com/#sle).
  - 2. 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 OVERHEAD SUPPORTED VOLLEYBALL SYSTEMS**

- A. System shall consist of vertical drop frame units with folding side brace assemblies to automatically fold entire unit (including judges stand, net antennas, padding, etc.) to the ceiling with a single electrically operated winch, without releasing tension on the net. The system shall automatically release the tension on the nets as the masts are raised into the storage position by means of shortening the distance between masts, at the net attachment point, as the masts are folded up.
- B. System must be able to be set up from the control system in a one step process. Manual and secondary process requiring unit to attach or to be detached to the ground prior to operating are not permitted.
- C. Vertical drop frames assemblies shall be fitted with net-tensioning, incorporating a heavy duty, self locking ratchet mechanism with a compression, disc-brake type release mechanism to eliminate sudden release of cable tension when removing net.
- D. Each vertical frame shall be laterally braced and locked in playing position with a special diagonal brace assembly (minimum 1 7/8" O.D.), incorporating a folding knee joint type mechanism. Knee joints lock braces in playing position for maximum stability by means of a torsion spring system, which is easily disengaged by upward force of the hoist cables.
- E. System shall be folding to the overhead storage position by means of a 1 H.P. electric winch with integral up and down limit switches. Hoist cable system shall be 1/4" diameter galvanized cable with a 7,000-lb ultimate breaking strength operating through 4" diameter swivel pulley assemblies rated at a minimum 9,000lb load rating.
- F. Wiring of all electrical components shall be in accordance with local codes and in accordance with manufacturer's instructions. All conduit, wiring, junction boxes, and all components not specified herein shall be furnished and installed by the electrical contractor.
- G. Each folding support frame shall be furnished with an inertia-sensitive type safety lock (No. 10797-100 Saf-Strap) to automatically lock system in position at any time in storage or lowering cycle, should there be a possible malfunction of the hoisting system.
- H. Lower ends of the folding support frames, including the judges stand, net tension and height adjustment mechanisms shall be fully padded to a height of 6'-0" above the playing floor to comply with all competition requirements.
- I. Padding color shall be per manufacturer's standard colors or to match the existing padding color within the gymnasium.
- J. System shall be furnished complete with No. 02295-390 Power line volleyball net and No. 2296 net antennas

### **2.04 NET HEIGHT ADJUSTMENT**

- A. Net height adjustment: Net frames shall be furnished with a 3/4" diameter anchor screw type height adjustment mechanism to easily adjust the net to mens 7'-11 5/8" or womens 7'-4 1/8" official net heights for competition without loosening the net tension. Height setting indicators shall be visible from the side of each frame.
  - 1. Net Height Adjustment: Vertical drop frame assemblies shall be fitted with an integrated electric net height adjustment system. Height setting indicators shall be visible from the side of each frame.
  - 2. Materials: Center unitized support frame shall be fabricated by dual, 2 3/16" square heavy wall zinc plated guide tubes on 11-3/16" centers.
  - 3. Wiring and Control: Height adjustment unit shall incorporate a compact 115volt gear motor type linear actuator with 600 pound thrust capacity to raise and lower the height electrically. Motor shall draw 1.4 amps under full load, integral limit switches shall provide automatic shut off at lower and upper extensions. The motor shall be controlled by a special dual keyed, surface wall mounted momentary key switch. electrical box to be provided by the Electrical Contractor.

## **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.

### **3.02 INSTALLATION**

- A. Install in accordance with Contract Documents and manufacturer's instructions.
- B. Install equipment rigid, straight, plumb, and level.
- C. Secure equipment with manufacturer's recommended anchoring devices.
- D. Separate dissimilar metals to prevent electrolytic corrosion.

### **3.03 CLEANING**

- A. Remove masking or protective covering from finished surfaces.
- B. Clean equipment in accordance with manufacturer's recommendations.

### **3.04 PROTECTION**

- A. Protect installed products until Date of Substantial Completion.
- B. Replace damaged products before Date of Substantial Completion.

**END OF SECTION**

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**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 2717 - Equipment Wiring: 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 2021.
- F. AWS D1.1/D1.1M - Structural Welding Code - Steel 2020.
- 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 2016.
- 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 40 years of documented experience.
- B. Installer Qualifications: Manufacturer's installation crew.

**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. Interkal LLC; Blackout: [www.interkal.com/#sle](http://www.interkal.com/#sle).
  - 2. Irwin Telescopic Seating Company; VersaTract: [www.irwintelescopicseating.com/#sle](http://www.irwintelescopicseating.com/#sle).
  - 3. Hussey Seating Company; Maxam: [www.husseyseating.com/#sle](http://www.husseyseating.com/#sle).
  - 4. Substitutions: See Section 01 6000 - Product Requirements.

### **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. 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.
  - 2. 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.
  - 3. Configurations: As indicated on drawings.
  - 4. Wheelchair Spaces: Permanent open spaces at locations indicated on drawings in compliance with ADA Standards.
  - 5. Cutouts: Fit units to irregular wall surfaces, columns, pilasters, roof drain leaders, and other obstructions; take field measurements prior to fabrication.
  - 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. Rows: 17.
  - 2. Rise Per Row: 10 inches.
  - 3. Row Depth: 22 inches.
  - 4. 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. Specific seat color design will be used to spell (HFFM).
  - 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: Extruded aluminum; clear anodized finish.
  - 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 pipe or tube, with formed elbows at corners and caps at ends of straight runs.
  - 1. Steel: 1-1/2 inch minimum outside diameter, with 11 gauge, 0.12 inch minimum wall thickness; textured powder coat epoxy finish.
  - 2. Guardrail Infill: 9 gauge, 0.1144 inch diameter steel wire woven chain link with twisted selvages, fastened to pipe panel frame.

## **2.05 ACCESSORIES**

- A. Fillers and Closures:
  - 1. Top Row: Provide seat level rear filler panels to close openings between top row seat and wall; finish to match platforms.
- 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. Fasteners: Provide hardware and fasteners in accordance with manufacturer's recommendations.
- D. 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 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.
- B. Do not field cut or alter seats, fascia, or structural members without approval.
- C. Provide manufacturer's field representative to inspect completed installation.

### **3.04 ADJUSTING**

- A. Lubricate, test, and adjust each moving assembly to ensure proper operation in compliance with manufacturer's recommendations.

### **3.05 CLEANING**

- A. Clean exposed and semi-exposed assembly surfaces.
- B. Touch up finishes on damaged or soiled areas.

### **3.06 CLOSEOUT ACTIVITIES**

### **3.07 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 9300 SITE FURNISHINGS**

### **PART 1 - GENERAL**

#### **1.01 SECTION INCLUDES**

- A. Bench seating

#### **1.02 RELATED SECTIONS**

- A. Division 03 0000 - Concrete

#### **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. Closeout Procedures: Comply with the requirements of Section 01 7700.

#### **1.04 QUALITY ASSURANCE**

- A. 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.

#### **1.05 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 site furnishing 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. Bench Seating: Powder coated, outside facing custom curved steel bench. For convenience, details and specifications have been based on "NRBO-225 Custom Radii" by Victor Stanley., Dunkirk, MD (Telephone #1-800-368-2573).
  - 1. Size: 72" long by 27 1/2" wide by 31 3/4" high.
    - a. Inside Radius: 6'-0"
    - b. Inside Curve Length: 18'-10"
  - 2. Welding: Structural welding conforming to the requirements of AWS D 1.1, Structural Welding Code - Steel, 1998 edition as published by the American Welding Society.
  - 3. Welding Process: Conform to the recommended practices and guidelines for gas metal arc welding as listed in AWS C5.6, Gas Metal Arc Welding, Recommended Practices as published by the American Welding Society.
  - 4. Finish: TGIC Powder Coating. Powder coat to be applied to a thickness of 8 to 10 mils.
  - 5. Color: Black.
  - 6. Mounting Type: In-ground mount. Contractor to install as recommended by the manufacturer.
  - 7. Weight: 300 lbs.

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

- A. Installer Verification of Conditions: Examine conditions under which site furnishings 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. Verify topography under site furnishing prior to proceeding with installation work.

### **3.03 INSTALLATION**

- A. Erect and install site furnishings in accordance with the manufacturer's instructions.
- B. Site furnishings shall be pre-assembled as recommended by the manufacturer before being installed in their final location in the work. After assembly, site furnishings shall be installed in their final location and properly secured in place.
- C. Threads of all bolts shall have the ends upset after installation of nuts to render the connection vandal resistant.
- D. Touch-up Painting: Provide touch up paint at finish of site furnishing installations such that the repair is not visible from a distance of six feet. Nuts, washers and bolts shall be painted with touch up paint.

### **3.04 ADJUSTING AND CLEANING**

- A. Repairs and Protection of Site Furnishings
  - 1. Repair or replace broken or defective site furnishings as directed by the Project Designer.
  - 2. Protect site furnishings from damage until acceptance of installation.

**END OF SECTION**

**SECTION 14 4216  
VERTICAL PLATFORM WHEELCHAIR LIFT**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Unenclosed, self-contained vertical platform wheelchair lift.

**1.02 RELATED SECTIONS**

- A. Section 03300 - Cast-In-Place Concrete: Concrete shaftway and anchor placement.
- B. Section 06100 - Rough Carpentry: Blocking in framed construction for lift attachment.
- C. Section 09260 - Gypsum Board Assemblies: Gypsum board shaftway.
- D. Division 16 - Electrical: Dedicated telephone service and wiring connections.
- E. Division 16 - Electrical: Lighting and wiring connections at top of shaft.
- F. Division 16 - Electrical: Electrical power service and wiring connections.

**1.03 REFERENCES**

- A. ASME A17.1 - Safety Code for Elevators and Escalators.
- B. ASME A17.5 - Elevator and Escalator Electrical Equipment.
- C. ASME A18.1 - Safety Standard for Platform Lifts and Stairway Chairlifts.
- D. CSA B44 - Safety Code for Elevators and Escalators.
- E. CSA B355 - Lifts for Persons with Physical Disabilities.
- F. ICC/ANSI A117.1 - Accessible and Usable Buildings and Facilities.
- G. NFPA 70 - National Electric Code.
- H. CSA - National Electric Code.

**1.04 SUBMITTALS**

- A. Submit under provisions of Section 01300.
- B. Product Data: Manufacturer's data sheets on each product to be used, including:
  - 1. Submit manufacturer's installation instructions, including preparation, storage and handling requirements.
  - 2. Include complete description of performance and operating characteristics.
- C. Shop Drawings:
  - 1. Show typical details of assembly, erection and anchorage.
  - 2. Include wiring diagrams for power, control, and signal systems.
  - 3. Show complete layout and location of equipment, including required clearances and coordination with shaftway.
- D. Selection Samples: For each finished product specified, provide two complete sets of color chips representing manufacturer's full range of available colors and patterns.
- E. Verification Samples: For each finished product specified, two samples, minimum size 1-3/4" x 2-1/4", representing actual product, color, and patterns.
- F. Manufacturer Qualifications: Firm with minimum 20 years' experience in manufacturing of vertical platform wheelchair lifts, with evidence of experience with similar installations of type specified.
- G. Installer Qualifications: Licensed to install equipment of this scope, with evidence of experience with specified equipment. Installer shall maintain an adequate stock of replacement parts, have qualified people available to ensure fulfillment of maintenance and callback service without unreasonable loss of time in reaching project site.

**1.05 REGULATORY REQUIREMENTS**

- A. Provide platform lifts in compliance with:
  - 1. ASME A18.1 - Safety Standard for Platform Lifts and Stairway Chairlifts.
  - 2. ASME A17.1 - Safety Code for Elevators and Escalators.
  - 3. ASME A17.5 - Elevator and Escalator Electrical Equipment.
  - 4. NFPA 70 - National Electric Code.

## **1.06 DELIVERY, STORAGE, AND HANDLING**

- A. Store products in manufacturer's unopened packaging until ready for installation.
- B. Store components off the ground in a dry covered area, protected from adverse weather conditions.

## **1.07 PROJECT CONDITIONS**

- A. Do not use wheelchair lift for hoisting materials or personnel during construction period.

## **1.08 WARRANTY**

- A. Warranty: Manufacturer shall warrant the wheelchair lift materials and factory workmanship for two years following completion of installation.
- B. Extended Warranty: Provide an extended manufacturer's warranty for the entire warranty period covering the wheelchair lift materials and factory workmanship for the following additional extended period beyond the initial one-year warranty. Preventive Maintenance agreement required.
  - 1. Five additional years.

## **PART 2 PRODUCTS**

### **2.01 MANUFACTURERS**

- A. Basis of Design Manufacturer: Garaventa Lift; United States - P.O. Box 1769, Blaine, WA 98231-1769. Canada – 18920 – 36th Ave., Surrey, BC V3Z 0P6. ASD. Toll Free: 800-663-6556. Tel: (604) 594-0422. Fax: (604) 594-9915. Email: productinfo@garaventalift.com Web www.garaventalift.com
- B. Requests for substitutions will be considered in accordance with provisions of Section 01600.

### **2.02 UNENCLOSED VERTICAL WHEELCHAIR LIFT**

- A. Capacity: 750 lbs (340 kg) rated capacity.
- B. Mast Height:
  - 1. Model GVL-OP-60; 63 inches (1600 mm) maximum lifting height.
- C. Platform Size and Nominal Clear Platform Dimensions:
  - 1. Standard: 36 inches (914 mm) by 48-7/8 inches (1242 mm) clear platform dimensions.
- D. Platform Configuration:
  - 1. Straight Through: Front and rear openings.
- E. Landing Openings: Gates shall be self closing type.
  - 1. Gate Height: 42-1/8 inches (1070 mm).
  - 2. Platform Gate: Travels with platform and opens at lower landing.
  - 3. Upper Landing Gate: Installed at upper landing.
- F. Power Gate Operators:
  - 1. Location:
    - a. Platform Gate: Travels with platform and opens lower landing.
    - b. Upper Landing Gate.
      - 1) Automatically opens the gate when platform arrives at a landing. Will also open at landing by pressing call button.
  - 2. ADA Compliant and obstruction sensitive.
  - 3. Low voltage, 24 VDC with all wiring concealed.
- G. Lift Components:
  - 1. Machine Tower: Aluminum extrusion.
  - 2. Base Frame: Structural steel.
  - 3. Platform Side Wall Panels: 16 gauge (1.5 mm) galvanized steel sheet.
  - 4. Platform Access Ramp: 12 gauge (2.5 mm) galvanized steel plates; slip resistant surfaces.
    - a. Ramp: Stationary type.
  - 5. Side Guard Panels: 42-1/8 inches (1070 mm) high mounted on platform.
- H. Base Mounting at Lower Landing:



1. Floor Mount: Base of lift shall be mounted on the floor surface of the lower landing.  
For access onto the platform provide a ramp of 16 gauge (1.5 mm) galvanized steel sheet with a slip resistant surface.
- I. Hydraulic Drive:
  1. Drive Type: Chain hydraulic.
  2. Emergency Operation: Manual device to lower platform and battery auxiliary power to raise or lower platform.
  3. Safety Devices:
    - a. Slack chain safety device.
    - b. Shoring device.
  4. Travel Speed: 17 fpm (5.2 m/minute).
  5. Motor: 3.0 hp (2.2 kW); 24 volts DC.
  6. Power Supply:
    - a. 120 VAC single phase; 60 Hz on a dedicated 15-amp circuit.
    - b. 208/240 VAC, single phase; 50 Hz on a dedicated 16-amp circuit.
    - c. Powered by continuous building mains converted to 24 VDC, equipped with auxiliary power system capable of running lift up and down for a minimum of 5 trips with rated load.
    - d. Powered by continuously charged battery system.
- J. Platform Controls: 24 VDC control circuit with the following features.
  1. Direction Control: Illuminated tactile and continuous pressure elevator-style buttons with dual platform courtesy lights and safety light.
  2. Keyed operation.
- K. Call Station Controls: 24 VDC control circuit with the following features.
  1. Direction Control:
    - a. Illuminated tactile and continuous pressure elevator-style buttons with dual platform courtesy lights and safety light.
  2. Keyed operation.
  3. Call Station Mounting:
    - a. Lower:
      - 1) Wall mounted surface.
    - b. Upper:
      - 1) Frame mounted.
- L. Safety Devices and Features:
  1. Grounded electrical system with upper, lower, and final limit switches.
  2. Tamper resistant interlock to electrically monitor that the gate is in the closed position and the lock is engaged before lift can move from landing.
  3. Electrical disconnect shall shut off power to the lift.
  4. Under platform safety pan with five waterproof safety switches to detect obstruction under platform.
- M. Finishes
  1. Extruded aluminum electrostatically applied baked powder finish, semi matte Silver Moon.
  2. Ferrous Components: Electrostatically applied baked powder finish, semi matte.
    - a. Color: Silver Moon.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Do not begin installation until substrates have been properly prepared.
- B. Verify shaft and machine space are of correct size and within tolerances.
- C. Verify required landings and openings are of correct size and within tolerances.
- D. Verify electrical rough-in is at correct location.
- E. 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 platform lifts in accordance with applicable regulatory requirements including ASME A17.1, ASME A18.1 and the manufacturer's instructions.
- B. Install platform lifts in accordance with applicable regulatory requirements including CSA B355, and manufacturer's instructions.
- C. Install system components and connect to building utilities.
- D. Accommodate equipment in space indicated.
- E. Startup equipment in accordance with manufacturer's instructions.
- F. Adjust for smooth operation.

### **3.04 FIELD QUALITY CONTROL**

- A. Perform tests in compliance with ASME A17.1 or A18.1 and as required by authorities having jurisdiction.
- B. Perform tests in compliance with CSA B355 and required by authorities having jurisdiction.
- C. Schedule tests with agencies and Architect, Owner, and Contractor present.

### **3.05 PROTECTION**

- A. Protect installed products until completion of project.
- B. Touch-up, repair or replace damaged products before Substantial Completion.

**END OF SECTION**

**SECTION 26 0505  
SELECTIVE DEMOLITION FOR ELECTRICAL**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Electrical demolition.

**1.02 RELATED REQUIREMENTS**

- A. Section 01 7000 - EXECUTION REQUIREMENTS: Additional requirements for alterations work.
- B. Section 02 8400 - Polychlorinated Biphenyl (PCB) Remediation: Removal of equipment and materials containing substances regulated under the Federal Toxic Substances Control Act (TSCA), including but not limited to those containing PCBs and mercury.

**1.03 ADMINISTRATIVE REQUIREMENTS:**

- A. Survey and document all equipment and components scheduled for removal. Provide listing to Owner for review. Contractor is to deliver all items identified by Owner to be retained over to Owner. All other equipment and associated components shall become the Contractor's property. Contractor is responsible for prompt removal of equipment from project site in accordance with applicable federal, state, and local regulations.

**PART 2 PRODUCTS**

**2.01 MATERIALS AND EQUIPMENT**

- A. Materials and equipment for patching and extending work: As specified in individual sections.

**PART 3 EXECUTION**

**3.01 EXAMINATION**

- A. Verify field measurements and circuiting arrangements are as indicated.
- B. Verify that abandoned wiring and equipment serve only abandoned facilities.
- C. Demolition drawings are based on casual field observation and existing record documents.
- D. Report discrepancies to Architect before disturbing existing installation.
- E. Beginning of demolition means installer accepts existing conditions.

**3.02 PREPARATION**

- A. Disconnect electrical systems in walls, floors, and ceilings to be removed.
- B. Coordinate utility service outages with utility company and Owner.
- C. Provide temporary wiring and connections to maintain existing systems in service during construction. When work must be performed on energized equipment or circuits, use personnel experienced in such operations.
- D. Existing Fire Alarm System: Maintain existing system in service until system upgrades are accepted. Disable system only to make switchovers and connections. Minimize outage duration. New system appliances and peripherals by Owner, coordinate demolition in field. EC to remove existing upon direction from Owner.
  - 1. Notify Owner before partially or completely disabling system.
  - 2. Notify local fire service.
  - 3. Make notifications at least 24 hours in advance.
  - 4. Make temporary connections to maintain service in areas adjacent to work area.
- E. Existing Telephone System: Maintain existing system in service for duration of Project. Disable system only to make switchovers and connections. Minimize outage duration.
  - 1. Notify Owner at least 24 hours before partially or completely disabling system.
  - 2. Notify telephone utility company at least 24 hours before partially or completely disabling system.
  - 3. Make temporary connections to maintain service in areas adjacent to work area.
- F. Existing Security System: Maintain existing system in service until new system is complete and ready for service. Disable system only to make switchovers and connections. Minimize outage duration. New system appliances and peripherals by Owner, coordinate demolition in

field. EC to remove existing upon direction from Owner.

1. Obtain permission from Owner at least 24 hours before partially or completely disabling system.
2. Make temporary connections to maintain service in areas adjacent to work area.

### **3.03 DEMOLITION AND EXTENSION OF EXISTING ELECTRICAL WORK**

- A. Perform work for removal and disposal of equipment and materials containing toxic substances regulated under the Federal Toxic Substances Control Act (TSCA) in accordance with applicable federal, state, and local regulations. Applicable equipment and materials include, but are not limited to:
  1. PCB-containing electrical equipment, including transformers, capacitors, and switches.
  2. PCB- and DEHP-containing lighting ballasts.
  3. Mercury-containing lamps and tubes, including fluorescent lamps, high intensity discharge (HID), arc lamps, ultra-violet, high pressure sodium, mercury vapor, ignitron tubes, neon, and incandescent.
- B. Remove, relocate, and extend existing installations to accommodate new construction.
- C. Remove abandoned circuitry complete to source of supply.
- D. Remove abandoned conduit, including abandoned conduit above accessible ceiling finishes, concealed within wall, and ceilings. Cut conduit back to below slab surface at floors. Patch and restore all surfaces, prepare for new finishes.
- E. Disconnect abandoned wiring devices, associated boxes, and conduit complete in thier entirety.
- F. Disconnect and remove abandoned power panels and distribution equipment in thier entirety.
- G. Disconnect and remove electrical devices and circuitry serving utilization equipment that has been removed in it's entirety.
- H. Disconnect and remove abandoned luminaires and associated fixture circuitry. Remove brackets, stems, hangers, boxes, and other accessories in their entirety.
- I. Repair adjacent construction and finishes damaged during demolition and extension work.
- J. Maintain access to existing electrical installations that remain active. Modify installation or provide access panel as appropriate.
- K. Extend existing installations using materials and methods compatible with existing electrical installations, or as specified.

### **3.04 CLEANING AND REPAIR**

- A. Clean and repair existing materials and equipment that remain or that are to be reused.
- B. Power Panels: Clean exposed surfaces and check tightness of electrical connections. Replace damaged circuit breakers and provide closure plates for vacant positions. Provide typed circuit directory accurately recording revised circuiting arrangement.

**END OF SECTION**

**SECTION 26 0510**  
**BASIC ELECTRICAL REQUIREMENTS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Electrical Requirements

**1.02 RELATED REQUIREMENTS**

- A. Refer to Section 01 0000 - General Requirements.

**1.03 REFERENCE STANDARDS**

- A. The following standards shall govern and shall constitute minimum requirements as approved. If the requirements of this specification exceed those of the standards mentioned, this specification shall govern.
1. Local Building Codes.
  2. Underwriters Laboratories, Inc., (UL) approved or listed: All materials shall be UL approved or certified by another nationally recognized third party agency.
  3. Local Electric Utility: Standards in effect on bidding date.
  4. Local Telephone Utility: Standards in effect on bidding date for service entrance.
  5. National Electrical Manufacturer's Association, NEMA: Equipment enclosures, mountings and connections.
  6. American National Standards Institute, ANSI: Where mentioned herein.
  7. American Institute of Electronic and Electrical Engineers, IEEE: Power equipment.
  8. National Electrical Safety Code, NESC: Outdoor and overhead work for temporary service.
  9. Occupational Safety and Health Act, OSHA: Requirements for safety and health of employees.
  10. National Fire Prevention Association, NFPA:
    - a. 70, National Electric Code, NEC.
    - b. 101, Life Safety Code.
  11. Building Code of New York State.
  12. Fire Code of New York State.
  13. Energy Conservation Construction Code of New York State.
  14. New York State Department of Labor Rules and Regulations.
  15. New York State Education Department "Manual of Planning Standards".
- B. References to codes, specifications, and standards called for in the specification sections and on the drawings mean, the latest edition, amendment and revision adopted by the authority have jurisdiction in effect on the date of these contract documents.

**1.04 ADMINISTRATIVE REQUIREMENTS**

- A. Provide all labor, items, articles, materials, operations, methods, or equipment listed, mentioned, indicated, or scheduled on the drawings and specified herein, and required to complete the electrical work.
- B. Electrical trade shall include all required cutting and patching required for his/her work unless, specifically shown as part of the General Construction work on the architectural drawings.
- C. Cost of fees shall be included in the bid as follows:
1. Construction permits.
  2. Inspections and tests as described in these specifications.
- D. Contract drawings and specifications are complementary and must be so construed to determine the full scope of work.
- E. Drawings:
1. Contract Drawings are, in part, diagrammatic and are intended to convey the scope of the work and indicate the general arrangement of the equipment. Follow these Drawings in laying out the work. Consult all drawings, of all trades, to become familiar with all conditions affecting the Work and to verify spaces in which the work will be installed.

2. Reasonable changes required by job conditions (including offsetting of conduits around beams, etc.) shall be made, after obtaining the Engineer's approval, at no additional cost to the Owner.
- F. Definitions:
1. The term "provide" shall have the same meaning as "furnish and install". All materials so implied either on the drawings or in these specifications shall be furnished new and installed unless specifically noted otherwise.
  2. The term "circuitry" shall have the same meaning as "conductors, boxes, pathway, and all associated components required for a complete circuit".

#### **1.05 SUBMITTALS**

- A. Reference Section 01 3300 - Administrative Requirements for submittal process.

#### **1.06 QUALITY ASSURANCE**

- A. LICENSING
1. Electrical Contract Work shall be performed by, or under, the direct supervision of a Licensed Electrician.
- B. Underwriters' Certificate: Prior to submittal of Request for Final Payment, an electrical inspection certificate shall be obtained and submitted for approval. List of approved 3rd party inspecting underwriters is listed below:
1. Commonwealth of Pennsylvania Inspectors, Mike Kieff (315-408-5709).
  2. Electrical Underwriters of NY, LLC (845-569-1759).
  3. Inspections on Time (845-233-6711)
  4. Other Underwriters are not restricted, however credentials shall be provided for Engineer approval prior to Inspection.

#### **1.07 FIELD CONDITIONS**

- A. Any discrepancies shall be called to the attention of the Engineer before bids are taken. Bids shall be based on code and functional adequacy. Failure of the Contractor in this respect shall not relieve him of responsibility for a complete and fully operating adequate installation at no increase in cost.
- B. Prior to commencement of work, the Contractor(s) effecting such system shall survey all building electrical systems and components, including fire alarm, intrusion, communications, clock, security and data local area network; make written notice to the Owner regarding existing defects, damages, missing items, and incomplete systems. Prior to the conclusion of this project, the Contractor shall verify with the Project Representative that all building systems have been returned to their original pre-construction conditions.

### **PART 2 PRODUCTS**

#### **2.01 GENERAL REQUIREMENTS**

- A. Provide new, unused equipment and material unless otherwise called for.
- B. All equipment and/or materials shall be new and shall carry the label of Underwriter's Laboratories Inc., whenever UL requirements are applicable.
- C. Materials of same general type, such as wiring devices and distribution equipment shall be of the same make and manufacturer throughout the building so that appearance and operation are uniform.

### **PART 3 EXECUTION**

#### **3.01 CLEANING AND REPAIR**

- A. CUTTING AND PATCHING
1. Cut and drill from both sides of walls and / or floors to eliminate splaying. Patch any cut or abandoned holes left by removals of equipment, fixtures, devices, etc. Patch adjacent existing work disturbed by installation of new work including insulation, walls and wall covering, ceiling and floor covering, other finished surfaces. Patch openings and damaged areas equal to existing surface finish. Cut openings in prefabricated construction units in accordance with manufacturer's instructions. Refer to "General Conditions of the Contract for Construction," for additional requirements.

- B. Contractor shall at all times keep the project free from accumulation of waste material or rubbish caused by his work.
- C. When directed, just prior to final acceptance, clean all equipment under contract including, but not limited to the following:
  - 1. Lighting fixtures, panels, distribution equipment, control centers, clocks, receptacles, fire alarm appliances and detectors, wiring devices, and switch plates.
  - 2. All equipment scheduled to be painted, remove all dust, dirt, rust, etc., and leave ready for painting.
  - 3. Building, by removing all debris, leftover conduits, wire insulation, cartons, tools, etc., left because of this work.

**END OF SECTION**

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**SECTION 26 0519**  
**LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Single conductor building wire.
- B. Metal-clad cable.
- C. Wiring connectors.
- D. Electrical tape.
- E. Heat shrink tubing.
- F. Oxide inhibiting compound.
- G. Wire pulling lubricant.
- H. Cable ties.
- I. Firestop sleeves.

**1.02 RELATED REQUIREMENTS**

- A. Section 07 8400 - Firestopping.
- B. Section 26 0505 - Selective Demolition for Electrical: Disconnection, removal, and/or extension of existing electrical conductors and cables.
- C. Section 26 0526 - Grounding and Bonding for Electrical Systems: Additional requirements for grounding conductors and grounding connectors.
- D. Section 26 0536 - Cable Trays for Electrical Systems: Additional installation requirements for cables installed in cable tray systems.
- E. Section 26 0553 - IDENTIFICATION FOR ELECTRICAL SYSTEMS: Identification products and requirements.

**1.03 REFERENCE STANDARDS**

- A. ASTM B3 - Standard Specification for Soft or Annealed Copper Wire 2013 (Reapproved 2018).
- B. ASTM B8 - Standard Specification for Concentric-Lay-Stranded Copper Conductors, Hard, Medium-Hard, or Soft 2011 (Reapproved 2017).
- C. ASTM B33 - Standard Specification for Tin-Coated Soft or Annealed Copper Wire for Electrical Purposes 2010, with Editorial Revision (2020).
- D. ASTM B787/B787M - Standard Specification for 19 Wire Combination Unilay-Stranded Copper Conductors for Subsequent Insulation 2004 (Reapproved 2020).
- E. ASTM D3005 - Standard Specification for Low-Temperature Resistant Vinyl Chloride Plastic Pressure-Sensitive Electrical Insulating Tape 2017.
- F. NECA 1 - Standard for Good Workmanship in Electrical Construction 2015.
- G. NECA 120 - Standard for Installing Armored Cable (AC) and Metal-Clad Cable (MC) 2012.
- H. NETA ATS - Acceptance Testing Specifications for Electrical Power Equipment and Systems 2017.
- I. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- J. UL 486D - Sealed Wire Connector Systems Current Edition, Including All Revisions.
- K. UL 1277 - Electrical Power and Control Tray Cables with Optional Optical-Fiber Members Current Edition, Including All Revisions.
- L. UL 1569 - Metal-Clad Cables Current Edition, Including All Revisions.

**1.04 ADMINISTRATIVE REQUIREMENTS**

- A. Coordination:
  - 1. Coordinate sizes of raceways, boxes, and equipment enclosures installed under other sections with the actual conductors to be installed, including adjustments for conductor

- sizes increased for voltage drop.
- 2. Coordinate with electrical equipment installed under other sections to provide terminations suitable for use with the conductors to be installed.
- 3. Notify Architect of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

#### **1.05 SUBMITTALS**

- A. See Section 01 3300-Administrative Requirements, for submittal procedures.
- B. Product Data: Provide manufacturer's standard catalog pages and data sheets for conductors and cables, including detailed information on materials, construction, ratings, listings, and available sizes, configurations, and stranding.
- C. Project Record Documents: Record actual installed circuiting arrangements. Record actual routing.

#### **1.06 QUALITY ASSURANCE**

- A. Comply with requirements of NFPA 70.
- B. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

#### **1.07 DELIVERY, STORAGE, AND HANDLING**

- A. Receive, inspect, handle, and store conductors and cables in accordance with manufacturer's instructions.

#### **1.08 FIELD CONDITIONS**

- A. Do not install or otherwise handle thermoplastic-insulated conductors at temperatures lower than 14 degrees F, unless otherwise permitted by manufacturer's instructions. When installation below this temperature is unavoidable, notify Architect and obtain direction before proceeding with work.

### **PART 2 PRODUCTS**

#### **2.01 CONDUCTOR AND CABLE APPLICATIONS**

- A. Do not use conductors and cables for applications other than as permitted by NFPA 70 and product listing.
- B. Provide single conductor building wire installed in suitable raceway unless otherwise indicated, permitted, or required.
- C. Nonmetallic-sheathed cable is not permitted.
- D. Underground feeder and branch-circuit cable is not permitted.
- E. Service entrance cable is not permitted.
- F. Armored cable is not permitted.
- G. Metal-clad cable is permitted only as follows:
  - 1. Where not otherwise restricted, may be used:
    - a. Where concealed above accessible ceilings for final connections from junction boxes to luminaires.
      - 1) Maximum Length: 6 feet.
  - 2. In addition to other applicable restrictions, may not be used:
    - a. Where exposed to view.
    - b. Where exposed to damage.
    - c. For damp, wet, or corrosive locations.
- H. Manufactured wiring systems are not permitted.

#### **2.02 CONDUCTOR AND CABLE GENERAL REQUIREMENTS**

- A. Provide products that comply with requirements of NFPA 70.
- B. Provide products listed, classified, and labeled as suitable for the purpose intended.
- C. Unless specifically indicated to be excluded, provide all required conduit, boxes, wiring, connectors, etc. as required for a complete operating circuit system.

- D. Comply with NEMA WC 70.
- E. Thermoplastic-Insulated Conductors and Cables: Listed and labeled as complying with UL 83.
- F. Thermoset-Insulated Conductors and Cables: Listed and labeled as complying with UL 44.
- G. Conductors for Grounding and Bonding: Also comply with Section 26 0526.
- H. Conductors and Cables Installed in Cable Tray: Listed and labeled as suitable for cable tray use.
- I. Conductors and Cables Installed Where Exposed to Direct Rays of Sun: Listed and labeled as sunlight resistant.
- J. All exposed 12V, 24V, 36V control and signal Conductors and Cables shall be UL listed and labeled Plenum Rated; suitable for use in return air plenums and other applications.
- K. Conductor Material:
  - 1. Provide copper "CU" conductors only. Aluminum conductors (AL) are **not** acceptable for this project. All conductor sizes indicated are based on copper.
  - 2. Copper Conductors: Soft drawn annealed, 98 percent conductivity, uncoated copper conductors complying with ASTM B3, ASTM B8, or ASTM B787/B787M unless otherwise indicated.
  - 3. Tinned Copper Conductors: Comply with ASTM B33.
- L. Minimum Conductor Size:
  - 1. Branch Circuits: 12 AWG.
    - a. Exceptions:
      - 1) 20 A, 120 V circuits longer than 75 feet: 10 AWG, for voltage drop.
      - 2) 20 A, 120 V circuits longer than 150 feet: 8 AWG, for voltage drop.
  - 2. Control Circuits: 14 AWG.
- M. Where conductor size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.
- N. Conductor Color Coding:
  - 1. Color code conductors as indicated unless otherwise required by the authority having jurisdiction. Maintain consistent color coding throughout project.
  - 2. Color Coding Method: Integrally colored insulation.
    - a. Conductors size 4 AWG and larger may have black insulation color coded using vinyl color coding electrical tape.
  - 3. Insulation Color Code:
    - a. 208Y/120 V, 3 Phase, 4 Wire System:
      - 1) Phase A: Black.
      - 2) Phase B: Red.
      - 3) Phase C: Blue.
      - 4) Neutral/Grounded: White.
    - b. Equipment Ground, All Systems: Green.
    - c. Fire Alarm: Red
    - d. Travelers for 3-Way and 4-Way Switching: Pink.
    - e. For modifications or additions to existing wiring systems, comply with existing color code when existing code complies with NFPA 70 and is approved by the authority having jurisdiction.
    - f. For control circuits, comply with manufacturer's recommended color code.

## 2.03 SINGLE CONDUCTOR BUILDING WIRE

- A. Manufacturers:
  - 1. Copper Building Wire:
    - a. Cerro Wire LLC: [www.cerrowire.com/#sle](http://www.cerrowire.com/#sle).
    - b. Encore Wire Corporation: [www.encorewire.com/#sle](http://www.encorewire.com/#sle).
    - c. General Cable Technologies Corporation: [www.generalcable.com/#sle](http://www.generalcable.com/#sle).
    - d. Southwire Company: [www.southwire.com/#sle](http://www.southwire.com/#sle).
    - e. Substitutions: See Section 01 6000 - Product Requirements.

- B. Description: Single conductor insulated wire.
- C. Conductor Stranding:
  - 1. Feeders and Branch Circuits:
  - 2. Control Circuits: Stranded.
- D. Insulation Voltage Rating: 600 V.
- E. Insulation:
  - 1. Copper Building Wire: Type THHN/THWN or THHN/THWN-2, except as indicated below.
    - a. Size 4 AWG and Larger: Type XHHW-2.
    - b. Installed Underground: Type XHHW-2.
    - c. Fixture Wiring Within Luminaires: Type TFFN/TFN for luminaires with labeled maximum temperature of 90 degrees C; Approved suitable type for luminaires with labeled maximum temperature greater than 90 degrees C.
- F. Manufacturers:
  - 1. AFC Cable Systems Inc: [www.afcweb.com/#sle](http://www.afcweb.com/#sle).
  - 2. Encore Wire Corporation: [www.encorewire.com/#sle](http://www.encorewire.com/#sle).
  - 3. Southwire Company: [www.southwire.com/#sle](http://www.southwire.com/#sle).
  - 4. Size 10 AWG and Smaller: Solid.
- G. Armor: Steel, interlocked tape.

## 2.04 WIRING CONNECTORS

- A. Description: Wiring connectors appropriate for the application, suitable for use with the conductors to be connected, and listed as complying with UL 486A-486B or UL 486C as applicable.
- B. Connectors for Grounding and Bonding: Comply with Section 26 0526.
- C. Wiring Connectors for Splices and Taps:
  - 1. Copper Conductors Size 8 AWG and Smaller: Use twist-on insulated spring connectors.
  - 2. Copper Conductors Size 6 AWG and Larger: Use mechanical connectors or compression connectors.
- D. Wiring Connectors for Terminations:
  - 1. Provide terminal lugs for connecting conductors to equipment furnished with terminations designed for terminal lugs.
  - 2. Provide compression adapters for connecting conductors to equipment furnished with mechanical lugs when only compression connectors are specified.
  - 3. Where over-sized conductors are larger than the equipment terminations can accommodate, provide connectors suitable for reducing to appropriate size, but not less than required for the rating of the overcurrent protective device.
  - 4. Copper Conductors Size 8 AWG and Larger: Use mechanical connectors or compression connectors where connectors are required.
  - 5. Stranded Conductors Size 10 AWG and Smaller: Use crimped terminals for connections to terminal screws.
  - 6. Conductors for Control Circuits: Use crimped terminals for all connections.
- E. Do not use insulation-piercing or insulation-displacement connectors designed for use with conductors without stripping insulation.
- F. Do not use push-in wire connectors as a substitute for twist-on insulated spring connectors.
  - 1. Manufacturers:
    - a. 3M: [www.3m.com/#sle](http://www.3m.com/#sle).
    - b. Ideal Industries, Inc: [www.idealindustries.com/#sle](http://www.idealindustries.com/#sle).
    - c. NSI Industries LLC: [www.nsiindustries.com/#sle](http://www.nsiindustries.com/#sle).
  - 2. Manufacturers:
    - a. Burndy LLC: [www.burndy.com/#sle](http://www.burndy.com/#sle).
    - b. IlSCO: [www.ilsco.com/#sle](http://www.ilsco.com/#sle).
    - c. Thomas & Betts Corporation: [www.tnb.com/#sle](http://www.tnb.com/#sle).
  - 3. Manufacturers:

- a. Burndy LLC: [www.burndy.com/#sle](http://www.burndy.com/#sle).
- b. IlSCO: [www.ilsco.com/#sle](http://www.ilsco.com/#sle).
- c. Thomas & Betts Corporation: [www.tnb.com/#sle](http://www.tnb.com/#sle).
- 4. Manufacturers:
  - a. Burndy LLC: [www.burndy.com/#sle](http://www.burndy.com/#sle).
  - b. IlSCO: [www.ilsco.com/#sle](http://www.ilsco.com/#sle).
  - c. Thomas & Betts Corporation: [www.tnb.com/#sle](http://www.tnb.com/#sle).

## 2.05 ACCESSORIES

- A. Electrical Tape:
  - 1. Manufacturers:
    - a. 3M: [www.3m.com/#sle](http://www.3m.com/#sle).
    - b. Plymouth Rubber Europa: [www.plymouthrubber.com/#sle](http://www.plymouthrubber.com/#sle).
  - 2. Vinyl Color Coding Electrical Tape: Integrally colored to match color code indicated; listed as complying with UL 510; minimum thickness of 7 mil; resistant to abrasion, corrosion, and sunlight; suitable for continuous temperature environment up to 221 degrees F.
  - 3. Vinyl Insulating Electrical Tape: Complying with ASTM D3005 and listed as complying with UL 510; minimum thickness of 7 mil; resistant to abrasion, corrosion, and sunlight; conformable for application down to 0 degrees F and suitable for continuous temperature environment up to 221 degrees F.
  - 4. Moisture Sealing Electrical Tape: Insulating mastic compound laminated to flexible, all-weather vinyl backing; minimum thickness of 90 mil.
- B. Heat Shrink Tubing: Heavy-wall, split-resistant, with factory-applied adhesive; rated 600 V; suitable for direct burial applications; listed as complying with UL 486D.
  - 1. Manufacturers:
    - a. 3M: [www.3m.com/#sle](http://www.3m.com/#sle).
    - b. Burndy LLC: [www.burndy.com/#sle](http://www.burndy.com/#sle).
    - c. Thomas & Betts Corporation: [www.tnb.com/#sle](http://www.tnb.com/#sle).
- C. Wire Pulling Lubricant: Listed; suitable for use with the conductors or cables to be installed and suitable for use at the installation temperature.
  - 1. Manufacturers:
    - a. 3M: [www.3m.com/#sle](http://www.3m.com/#sle).
    - b. American Polywater Corporation: [www.polywater.com/#sle](http://www.polywater.com/#sle).
    - c. Ideal Industries, Inc: [www.idealindustries.com/#sle](http://www.idealindustries.com/#sle).
- D. Cable Ties: Material and tensile strength rating suitable for application.
  - 1. Manufacturers:
    - a. Burndy LLC: [www.burndy.com/#sle](http://www.burndy.com/#sle).
    - b. Substitutions: See Section 01 6000 - Product Requirements.
- E. Firestop Sleeves: Listed; provide as required to preserve fire resistance rating of building elements.
  - 1. Products:
    - a. HoldRite, a brand of Reliance Worldwide Corporation; HydroFlame Pro Series/HydroFlame Custom Built: [www.holdrite.com/#sle](http://www.holdrite.com/#sle).
    - b. [\_\_\_\_\_].
    - c. Substitutions: See Section 01 6000 - Product Requirements.

## PART 3 EXECUTION

### 3.01 EXAMINATION

- A. Verify that interior of building has been protected from weather.
- B. Verify that work likely to damage wire and cable has been completed.
- C. Verify that raceways, boxes, and equipment enclosures are installed and are properly sized to accommodate conductors and cables in accordance with NFPA 70.
- D. Verify that field measurements are as indicated.
- E. Verify that conditions are satisfactory for installation prior to starting work.

### 3.02 PREPARATION

- A. Clean raceways thoroughly to remove foreign materials before installing conductors and cables.

### 3.03 INSTALLATION

- A. Circuiting Requirements:
  - 1. Unless dimensioned, circuit routing indicated is diagrammatic.
  - 2. When circuit destination is indicated without specific routing, determine exact routing required in field.
  - 3. Arrange circuiting to minimize splices.
  - 4. Include circuit lengths required to install connected devices within 10 ft of location indicated.
  - 5. Maintain separation of Class 1, Class 2, and Class 3 remote-control, signaling, and power-limited circuits in accordance with NFPA 70.
  - 6. Maintain separation of wiring for emergency systems in accordance with NFPA 70.
  - 7. Circuiting Adjustments: Unless otherwise indicated, when branch circuits are indicated as separate, combining them together in a single raceway is not permitted.
  - 8. Common Neutrals: Unless otherwise indicated, sharing of neutral/grounded conductors among up to three single phase branch circuits of different phases installed in the same raceway is not permitted. Provide dedicated neutral/grounded conductor for each individual branch circuit.
    - a. Branch circuits fed from ground fault circuit interrupter (GFCI) circuit breakers.
    - b. Branch circuits fed from feed-through protection of GFI receptacles.
    - c. Branch circuits with dimming controls.
- B. Install products in accordance with manufacturer's instructions.
- C. Perform work in accordance with NECA 1 (general workmanship).
- D. Installation in Raceway:
  - 1. Tape ends of conductors and cables to prevent infiltration of moisture and other contaminants.
  - 2. Pull all conductors and cables together into raceway at same time.
  - 3. Do not damage conductors and cables or exceed manufacturer's recommended maximum pulling tension and sidewall pressure.
  - 4. Use suitable wire pulling lubricant where necessary, except when lubricant is not recommended by the manufacturer.
- E. Exposed Cable Installation (only where specifically permitted):
  - 1. Route cables parallel or perpendicular to building structural members and surfaces.
  - 2. Protect cables from physical damage.
- F. Paralleled Conductors: Install conductors of the same length and terminate in the same manner.
- G. Secure and support conductors and cables in accordance with NFPA 70 using suitable supports and methods approved by the authority having jurisdiction. Provide independent support from building structure. Do not provide support from raceways, piping, ductwork, or other systems.
  - 1. Installation Above Suspended Ceilings: Do not provide support from ceiling support system. Do not provide support from ceiling grid or allow conductors and cables to lay on ceiling tiles.
  - 2. Metal-Clad Cable (Type MC):
    - a. Use listed fittings.
    - b. Cut cable armor only using specialized tools to prevent damaging conductors or insulation. Do not use hacksaw or wire cutters to cut armor.
- H. Install conductors with a minimum of 12 inches of slack at each outlet.
- I. Neatly train and bundle conductors inside boxes, wireways, panelboards and other equipment enclosures.
- J. Group or otherwise identify neutral/grounded conductors with associated ungrounded conductors inside enclosures in accordance with NFPA 70.

- K. Make wiring connections using specified wiring connectors.
  - 1. Make splices and taps only in accessible boxes. Do not pull splices into raceways or make splices in conduit bodies or wiring gutters.
  - 2. Remove appropriate amount of conductor insulation for making connections without cutting, nicking or damaging conductors.
  - 3. Do not remove conductor strands to facilitate insertion into connector.
  - 4. Clean contact surfaces on conductors and connectors to suitable remove corrosion, oxides, and other contaminants. Do not use wire brush on plated connector surfaces.
- L. Insulate splices and taps that are made with uninsulated connectors using methods suitable for the application, with insulation and mechanical strength at least equivalent to unspliced conductors.
  - 1. Dry Locations: Use insulating covers specifically designed for the connectors, electrical tape, or heat shrink tubing.
  - 2. Damp Locations: Use insulating covers specifically designed for the connectors, electrical tape, or heat shrink tubing.
    - a. For connections with insulating covers, apply outer covering of moisture sealing electrical tape.
    - b. For taped connections, follow same procedure as for dry locations but apply outer covering of moisture sealing electrical tape.
  - 3. Wet Locations: Use heat shrink tubing.
- M. Insulate ends of spare conductors using vinyl insulating electrical tape.
- N. Field-Applied Color Coding: Where vinyl color coding electrical tape is used in lieu of integrally colored insulation as permitted in Part 2 under "Color Coding", apply half overlapping turns of tape at each termination and at each location conductors are accessible.
- O. Identify conductors and cables in accordance with Section 26 0553.
- P. Install firestopping to preserve fire resistance rating of partitions and other elements, using materials and methods specified in Section 07 8400.
- Q. Unless specifically indicated to be excluded, provide final connections to all equipment and devices, including those furnished by others, as required for a complete operating system.

#### **3.04 FIELD QUALITY CONTROL**

- A. See Section 01 4000 - Quality Requirements, for additional requirements.
- B. Inspect and test in accordance with NETA ATS, except Section 4.
- C. Perform inspections and tests listed in NETA ATS, Section 7.3.2. The insulation resistance test is required for all conductors. The resistance test for parallel conductors listed as optional is not required.
- D. Branch circuits 200 amp and larger shall be tested during installation for continuity and identification and pass operational tests to determine that all circuits perform the function for which they are designed. For all feeder wiring rated 600 volts or less, provide 1,000 volt "Megger" insulation test prior to energizing feeders. Use 1,000 volt motor driven megger for all tests. Test voltage shall be applied until readings reach a constant value, and until three (3) equal readings, each one (1) minute apart, are obtained. Minimum megger reading shall be 45megohms for feeder conductors. Documents test results are submitted for approval prior to energizing conductors.
- E. Correct deficiencies and replace damaged or defective conductors and cables.

#### **END OF SECTION**

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**SECTION 26 0526**  
**GROUNDING AND BONDING FOR ELECTRICAL SYSTEMS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Grounding and bonding requirements.
- B. Conductors for grounding and bonding.
- C. Connectors for grounding and bonding.
- D. Ground enhancement material.

**1.02 RELATED REQUIREMENTS**

- A. Section 26 0519 - Low-Voltage Electrical Power Conductors and Cables: Additional requirements for conductors for grounding and bonding, including conductor color coding.
  - 1. Includes oxide inhibiting compound.
- B. Section 26 0553 - IDENTIFICATION FOR ELECTRICAL SYSTEMS: Identification products and requirements.
- C. Section 26 5600 - Exterior Lighting: Additional grounding and bonding requirements for pole-mounted luminaires.

**1.03 REFERENCE STANDARDS**

- A. IEEE 81 - IEEE Guide for Measuring Earth Resistivity, Ground Impedance, and Earth Surface Potentials of a Grounding System 2012.
- B. NECA 1 - Standard for Good Workmanship in Electrical Construction 2015.
- C. NETA ATS - Acceptance Testing Specifications for Electrical Power Equipment and Systems 2017.
- D. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- E. UL 467 - Grounding and Bonding Equipment Current Edition, Including All Revisions.

**1.04 ADMINISTRATIVE REQUIREMENTS**

- A. Coordination:
  - 1. Verify exact locations of underground metal water service pipe entrances to building.
  - 2. Coordinate the work with other trades to provide steel reinforcement complying with specified requirements for concrete-encased electrode.
  - 3. Notify Architect of any conflicts with or deviations from the contract documents. Obtain direction before proceeding with work.
- B. Sequencing:
  - 1. Do not install ground rod electrodes until final backfill and compaction is complete.

**1.05 SUBMITTALS**

- A. See Section 01 3300-Administrative Requirements, for submittal procedures.
- B. Product Data: Provide manufacturer's standard catalog pages and data sheets for grounding and bonding system components and qualification data for testing agency and testing agency's field supervisor.
- C. Field quality control test reports.
- D. Operation and Maintenance Data:
  - 1. Instructions for periodic testing and inspection of grounding features at test wells and grounding connection for separately derived systems based on NETA Acceptance Testing Standards.
    - a. Tests shall be to determine if ground resistance or impedance values remain within specified maximums, and instructions shall recommend corrective action if they do not.
    - b. Include recommended testing intervals.

**1.06 QUALITY ASSURANCE**

- A. Conform to requirements of NFPA 70 and UL 467.

- B. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.
- C. Installer Qualifications for Signal Reference Grids: Company with minimum five years documented experience with high frequency grounding systems.
- D. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

## **1.07 DELIVERY, STORAGE, AND HANDLING**

- A. Receive, inspect, handle, and store products in accordance with manufacturer's instructions.

## **PART 2 PRODUCTS**

### **2.01 GROUNDING AND BONDING REQUIREMENTS**

- A. Existing Work: Where existing grounding and bonding system components are indicated to be reused, they may be reused only where they are free from corrosion, integrity and continuity are field verified, and where acceptable to the authority having jurisdiction.
- B. Do not use products for applications other than as permitted by NFPA 70 and product listing.
- C. Unless specifically indicated to be excluded, provide all required components, conductors, connectors, conduit, boxes, fittings, supports, accessories, etc. as necessary for a complete grounding and bonding system.
- D. Where conductor size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.
- E. Grounding System Resistance:
  - 1. Achieve specified grounding system resistance under normally dry conditions unless otherwise approved by Architect. Precipitation within the previous 48 hours does not constitute normally dry conditions.
  - 2. Grounding Electrode System: Not greater than 5 ohms to ground, when tested according to IEEE 81 using "fall-of-potential" method.
  - 3. Between Grounding Electrode System and Major Electrical Equipment Frames, System Neutral, and Derived Neutral Points: Not greater than 0.5 ohms, when tested using "point-to-point" methods.
- F. Grounding Electrode System:
  - 1. Provide connection to required and supplemental grounding electrodes indicated to form grounding electrode system.
    - a. Provide continuous grounding electrode conductors without splice or joint.
    - b. Install grounding electrode conductors in raceway where exposed to physical damage. Bond grounding electrode conductor to metallic raceways at each end with bonding jumper.
  - 2. Metal Underground Water Pipe(s):
    - a. Provide connection to underground metal domestic and fire protection (where present) water service pipe(s) that are in direct contact with earth for at least 10 feet at an accessible location not more than 5 feet from the point of entrance to the building.
    - b. Provide bonding jumper(s) around insulating joints/pipes as required to make pipe electrically continuous.
    - c. Provide bonding jumper around water meter of sufficient length to permit removal of meter without disconnecting jumper.
  - 3. Metal In-Ground Support Structure:
    - a. Provide connection to metal in-ground support structure that is in direct contact with earth in accordance with NFPA 70.
  - 4. Ground Rod Electrode(s):
    - a. Where location is not indicated, locate electrode(s) at least 5 feet outside building perimeter foundation as near as possible to electrical service entrance; where possible, locate in softscape (uncovered) area.
    - b. Provide ground enhancement material around electrode where indicated.

- G. Bonding and Equipment Grounding:
1. Provide bonding for equipment grounding conductors, equipment ground busses, metallic equipment enclosures, metallic raceways and boxes, device grounding terminals, and other normally non-current-carrying conductive materials enclosing electrical conductors/equipment or likely to become energized as indicated and in accordance with NFPA 70.
  2. Provide insulated equipment grounding conductor in each feeder and branch circuit raceway. Do not use raceways as sole equipment grounding conductor.
  3. Where circuit conductor sizes are increased for voltage drop, increase size of equipment grounding conductor proportionally in accordance with NFPA 70.
  4. Unless otherwise indicated, connect wiring device grounding terminal to branch circuit equipment grounding conductor and to outlet box with bonding jumper.
  5. Terminate branch circuit equipment grounding conductors on solidly bonded equipment ground bus only. Do not terminate on neutral (grounded) or isolated/insulated ground bus.
  6. Provide bonding jumper across expansion or expansion/deflection fittings provided to accommodate conduit movement.
  7. Provide bonding for interior metal piping systems in accordance with NFPA 70. This includes, but is not limited to:
    - a. Metal water piping where not already effectively bonded to metal underground water pipe used as grounding electrode.
  8. Provide bonding for metal building frame where not used as a grounding electrode.
  9. Provide bonding for metal siding not effectively bonded through attachment to metal building frame.
- H. Pole-Mounted Luminaires: Also comply with Section 26 5600.

## **2.02 GROUNDING AND BONDING COMPONENTS**

- A. General Requirements:
1. Provide products listed, classified, and labeled as suitable for the purpose intended.
  2. Provide products listed and labeled as complying with UL 467 where applicable.
- B. Conductors for Grounding and Bonding, in Addition to Requirements of Section 26 0526:
- C. Conductors for Grounding and Bonding, in Addition to Requirements of Section 26 0519:
1. Use insulated copper conductors unless otherwise indicated.
    - a. Exceptions:
      - 1) Use bare copper conductors where installed underground in direct contact with earth.
      - 2) Use bare copper conductors where directly encased in concrete (not in raceway).
- D. Connectors for Grounding and Bonding:
1. Description: Connectors appropriate for the application and suitable for the conductors and items to be connected; listed and labeled as complying with UL 467.
  2. Unless otherwise indicated, use exothermic welded connections for underground, concealed and other inaccessible connections.
  3. Unless otherwise indicated, use mechanical connectors, compression connectors, or exothermic welded connections for accessible connections.
  4. Manufacturers - Mechanical and Compression Connectors:
    - a. Advanced Lightning Technology (ALT): [www.altfab.com/#sle](http://www.altfab.com/#sle).
    - b. Burndy LLC: [www.burndy.com](http://www.burndy.com).
    - c. Harger Lightning & Grounding: [www.harger.com/#sle](http://www.harger.com/#sle).
    - d. Thomas & Betts Corporation: [www.tnb.com/#sle](http://www.tnb.com/#sle).
  5. Manufacturers - Exothermic Welded Connections:
    - a. Burndy LLC: [www.burndy.com](http://www.burndy.com).
    - b. Cadweld, a brand of Erico International Corporation: [www.erico.com/#sle](http://www.erico.com/#sle).
    - c. ThermOweld, a brand of Continental Industries, Inc: [www.thermoweld.com/#sle](http://www.thermoweld.com/#sle).
- E. Ground Rod Electrodes:
1. Comply with NEMA GR 1.
  2. Material: Copper-bonded (copper-clad) steel.

3. Size: 3/4 inch diameter by 10 feet length, unless otherwise indicated.
4. Where rod lengths of greater than 10 feet are indicated or otherwise required, sectionalized ground rods may be used.
5. Manufacturers:
  - a. Advanced Lightning Technology (ALT): [www.altfab.com/#sle](http://www.altfab.com/#sle).
  - b. Erico International Corporation: [www.erico.com/#sle](http://www.erico.com/#sle).
  - c. Galvan Industries, Inc: [www.galvanelectrical.com/#sle](http://www.galvanelectrical.com/#sle).
  - d. Harger Lightning & Grounding: [www.harger.com/#sle](http://www.harger.com/#sle).
- F. Ground Enhancement Material:
  1. Description: Factory-mixed conductive material designed for permanent and maintenance-free improvement of grounding effectiveness by lowering resistivity.
- G. Oxide Inhibiting Compound: Comply with Section 26 0519.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that work likely to damage grounding and bonding system components has been completed.
- B. Verify that field measurements are as shown on the drawings.
- C. Verify that conditions are satisfactory for installation prior to starting work.

### **3.02 INSTALLATION**

- A. Install products in accordance with manufacturer's instructions.
- B. Install grounding and bonding system components in a neat and workmanlike manner in accordance with NECA 1.
- C. Equipment Grounding:
  1. Install insulated equipment grounding conductors with the following items, in addition to those required by NFPA 70:
    - a. Feeders and branch circuits.
    - b. Lighting circuits.
    - c. Receptacle circuits.
    - d. Motor and appliance branch circuits.
    - e. Flexible raceway runs.
    - f. As noted on the drawings.
  2. Piping:
    - a. Metal Water Service Pipe: Install insulated copper grounding conductors, in conduit from building's main service equipment, or grounding bus, to main metal water service entrances to building. Connect grounding conductors to main metal water service pipes using a bolted clamp connector or by bolting a lug-type connector to a pipe flange, using one of the lug bolts of the flange. Where a dielectric main water fitting is installed, connect grounding conductor on street side of fitting. Bond metal grounding conductor conduit or sleeve to conductor at each end.
    - b. Water Meter Piping: Use braided-type bonding jumpers to electrically bypass water meters. Connect to pipe with a bolted connector.
    - c. Provide bonding straps at new valves, actuators, and pipe joints.
  3. Bonding Interior Metal Ducts: Bond metal air ducts to equipment grounding conductors of associated fans, blowers, electric heaters, and air cleaners. Install bonding jumper to bond across flexible duct connections to achieve continuity.
  4. Signal and Communication Equipment:
    - a. For telephone, alarm, voice and data, and other communication equipment, provide #4 AWG minimum insulated grounding conductor in raceway from grounding electrode system to each service location, demarcation, terminal cabinet, wiring closet, and central equipment location.
      - 1) Terminate grounding conductor on a grounding bus at service and central equipment locations and wiring closets.
      - 2) Terminate grounding conductor on cabinet grounding terminal at terminal cabinets.

- D. Make grounding and bonding connections using specified connectors.
  - 1. Install in locations accessible for inspection and maintenance, except where routed through short lengths of conduit.
  - 2. Remove appropriate amount of conductor insulation for making connections without cutting, nicking or damaging conductors. Do not remove conductor strands to facilitate insertion into connector.
  - 3. Remove nonconductive paint, enamel, or similar coating at threads, contact points, and contact surfaces.
  - 4. Exothermic Welds: Make connections using molds and weld material suitable for the items to be connected in accordance with manufacturer's recommendations.
  - 5. Mechanical Connectors: Secure connections according to manufacturer's recommended torque settings.
  - 6. Compression Connectors: Secure connections using manufacturer's recommended tools and dies.
- E. Identify grounding and bonding system components in accordance with Section 26 0553.

### **3.03 FIELD QUALITY CONTROL**

- A. See Section 01 4000 - Quality Requirements, for additional requirements.
- B. Inspect and test in accordance with NETA ATS except Section 4.
- C. Perform inspections and tests listed in NETA ATS, Section 7.13.
- D. Perform ground electrode resistance tests under normally dry conditions. Precipitation within the previous 48 hours does not constitute normally dry conditions.
- E. Grounding:
  - 1. Grounds and grounding systems shall have a resistance to solid earth ground not exceeding following values:
    - a. For grounding secondary service neutral: 5 Ohms
    - b. For grounding non-current carrying metal parts associated with secondary distribution system: 5 Ohms
  - 2. Provide grounding tests to verify the above values. Where these values are not met, add additional ground rods or connections in order to meet these values.
- F. Investigate and correct deficiencies where measured ground resistances do not comply with specified requirements.
- G. Submit detailed reports indicating inspection and testing results and corrective actions taken.

**END OF SECTION**

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**SECTION 26 0529  
HANGERS AND SUPPORTS FOR ELECTRICAL SYSTEMS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Support and attachment components for equipment, conduit, cable, boxes, and other electrical work.

**1.02 RELATED REQUIREMENTS**

- A. Section 26 0533.13 - Conduit for Electrical Systems: Additional support and attachment requirements for conduits.
- B. Section 26 0536 - Cable Trays for Electrical Systems: Additional support and attachment requirements for cable tray.
- C. Section 26 0533.16 - Boxes for Electrical Systems: Additional support and attachment requirements for boxes.
- D. Section 26 0548 - Vibration and Seismic Controls for Electrical Systems.
- E. Section 26 5100 - Interior Lighting: Additional support and attachment requirements for interior luminaires.
- F. Section 26 5600 - Exterior Lighting: Additional support and attachment requirements for exterior luminaires.

**1.03 REFERENCE STANDARDS**

- A. ASTM A123/A123M - Standard Specification for Zinc (Hot-Dip Galvanized) Coatings on Iron and Steel Products 2017.
- B. ASTM A153/A153M - Standard Specification for Zinc Coating (Hot-Dip) on Iron and Steel Hardware 2016a.
- C. ASTM B633 - Standard Specification for Electrodeposited Coatings of Zinc on Iron and Steel 2019.
- D. MFMA-4 - Metal Framing Standards Publication 2004.
- E. NECA 1 - Standard for Good Workmanship in Electrical Construction 2015.
- F. AWS D1.1/D1.1M - Structural Welding Code - Steel.
- G. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- H. UL 5B - Strut-Type Channel Raceways and Fittings Current Edition, Including All Revisions.

**1.04 ADMINISTRATIVE REQUIREMENTS**

- A. Coordination:
  - 1. Coordinate sizes and arrangement of supports and bases with the actual equipment and components to be installed.
  - 2. Coordinate the work with other trades to provide additional framing and materials required for installation.
  - 3. Coordinate compatibility of support and attachment components with mounting surfaces at the installed locations.
  - 4. Coordinate the arrangement of supports with ductwork, piping, equipment and other potential conflicts installed under other sections or by others.
  - 5. Notify Architect of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.
- B. Sequencing:

**1.05 SUBMITTALS**

- A. See Section 01 3300 - Submittal Procedures, for submittal process.
- B. Product Data: Provide manufacturer's standard catalog pages and data sheets for metal channel (strut) framing systems, non-penetrating rooftop supports, and post-installed concrete and masonry anchors.

## 1.06 QUALITY ASSURANCE

- A. Comply with NFPA 70.
- B. Comply with applicable building code.
- C. Installer Qualifications for Field-Welding: As specified in Section 05 5000.
- D. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

## PART 2 PRODUCTS

### 2.01 SUPPORT AND ATTACHMENT COMPONENTS

- A. General Requirements:
  - 1. Provide all required hangers, supports, anchors, fasteners, fittings, accessories, and hardware as necessary for the complete installation of electrical work.
  - 2. Provide products listed, classified, and labeled as suitable for the purpose intended, where applicable.
  - 3. Where support and attachment component types and sizes are not indicated, select in accordance with manufacturer's application criteria as required for the load to be supported with a minimum safety factor of 6. Include consideration for vibration, equipment operation, and shock loads where applicable.
  - 4. Do not use products for applications other than as permitted by NFPA 70 and product listing.
  - 5. Do not use wire, chain, perforated pipe strap, or wood for permanent supports unless specifically indicated or permitted.
  - 6. Steel Components: Use corrosion resistant materials suitable for the environment where installed.
    - a. Indoor Dry Locations: Use zinc-plated steel or approved equivalent unless otherwise indicated.
    - b. Outdoor and Damp or Wet Indoor Locations: Use galvanized steel, stainless steel, or approved equivalent unless otherwise indicated.
    - c. Zinc-Plated Steel: Electroplated in accordance with ASTM B633.
    - d. Galvanized Steel: Hot-dip galvanized after fabrication in accordance with ASTM A123/A123M or ASTM A153/A153M.
- B. Conduit and Cable Supports: Straps, clamps, etc. suitable for the conduit or cable to be supported.
  - 1. Conduit Straps: One-hole or two-hole type; steel or malleable iron.
  - 2. Conduit Clamps: Bolted type unless otherwise indicated.
  - 3. Manufacturers:
    - a. Cooper Crouse-Hinds, a division of Eaton Corporation: [www.cooperindustries.com/#sle](http://www.cooperindustries.com/#sle).
    - b. Erico International Corporation: [www.erico.com/#sle](http://www.erico.com/#sle).
    - c. O-Z/Gedney, a brand of Emerson Industrial Automation: [www.emersonindustrial.com/#sle](http://www.emersonindustrial.com/#sle).
- C. Outlet Box Supports: Hangers, brackets, etc. suitable for the boxes to be supported.
  - 1. Manufacturers:
    - a. Cooper Crouse-Hinds, a division of Eaton Corporation: [www.cooperindustries.com/#sle](http://www.cooperindustries.com/#sle).
    - b. Erico International Corporation: [www.erico.com/#sle](http://www.erico.com/#sle).
    - c. O-Z/Gedney, a brand of Emerson Industrial Automation: [www.emersonindustrial.com/#sle](http://www.emersonindustrial.com/#sle).
- D. Metal Channel (Strut) Framing Systems: Factory-fabricated continuous-slot metal channel (strut) and associated fittings, accessories, and hardware required for field-assembly of supports.
  - 1. Comply with MFMA-4.
  - 2. Channel Material:
    - a. Indoor Dry Locations: Use painted steel, zinc-plated steel, or galvanized steel.
    - b. Outdoor and Damp or Wet Indoor Locations: Use galvanized steel.



3. Minimum Channel Thickness: Steel sheet, 12 gage, 0.1046 inch.
4. Minimum Channel Dimensions: 1-5/8 inch width by 13/16 inch height.
5. Manufacturers:
  - a. Cooper B-Line, a division of Eaton Corporation: [www.cooperindustries.com/#sle](http://www.cooperindustries.com/#sle).
  - b. Thomas & Betts Corporation: [www.tnb.com/#sle](http://www.tnb.com/#sle).
  - c. Unistrut, a brand of Atkore International Inc: [www.unistrut.com/#sle](http://www.unistrut.com/#sle).
  - d. Source Limitations: Furnish channels (struts) and associated fittings, accessories, and hardware produced by a single manufacturer.
- E. Hanger Rods: Threaded zinc-plated steel unless otherwise indicated.
  1. Minimum Size, Unless Otherwise Indicated or Required:
    - a. Equipment Supports: 1/2 inch diameter.
    - b. Single Conduit up to 1 inch (27mm) trade size: 1/4 inch diameter.
    - c. Single Conduit larger than 1 inch (27mm) trade size: 3/8 inch diameter.
    - d. Trapeze Support for Multiple Conduits: 3/8 inch diameter.
    - e. Outlet Boxes: 1/4 inch diameter.
    - f. Luminaires: 1/4 inch diameter.
- F. Anchors and Fasteners:
  1. Unless otherwise indicated and where not otherwise restricted, use the anchor and fastener types indicated for the specified applications.
  2. Concrete: Use preset concrete inserts, expansion anchors, or screw anchors.
  3. Solid or Grout-Filled Masonry: Use expansion anchors or screw anchors.
  4. Hollow Masonry: Use toggle bolts.
  5. Hollow Stud Walls: Use toggle bolts.
  6. Steel: Use beam clamps, machine bolts, or welded threaded studs.
  7. Sheet Metal: Use sheet metal screws.
  8. Wood: Use wood screws.
  9. Plastic and lead anchors are not permitted.
  10. Manufacturers - Mechanical Anchors:
    - a. Hilti, Inc: [www.us.hilti.com/#sle](http://www.us.hilti.com/#sle).
    - b. ITW Red Head, a division of Illinois Tool Works, Inc: [www.itwredhead.com/#sle](http://www.itwredhead.com/#sle).
    - c. Powers Fasteners, Inc: [www.powers.com/#sle](http://www.powers.com/#sle).
    - d. Simpson Strong-Tie Company Inc: [www.strongtie.com/#sle](http://www.strongtie.com/#sle).

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that field measurements are as indicated.
- B. Verify that mounting surfaces are ready to receive support and attachment components.
- C. Verify that conditions are satisfactory for installation prior to starting work.

### **3.02 INSTALLATION**

- A. Install products in accordance with manufacturer's instructions.
- B. Install support and attachment components in a neat and workmanlike manner in accordance with NECA 1.
- C. Install anchors and fasteners in accordance with ICC Evaluation Services, LLC (ICC-ES) evaluation report conditions of use where applicable.
- D. Provide independent support from building structure. Do not provide support from piping, ductwork, or other systems.
- E. Unless specifically indicated or approved by Architect, do not provide support from suspended ceiling support system or ceiling grid.
- F. Unless specifically indicated or approved by Architect, do not provide support from roof deck.
- G. Do not penetrate or otherwise notch or cut structural members without approval of Structural Engineer.
- H. Provide required vibration isolation and/or seismic controls in accordance with Section 26 0548.

- I. Field-Welding (where approved by Architect): Comply with Section 05 5000.
- J. Equipment Support and Attachment:
  - 1. Use metal fabricated supports or supports assembled from metal channel (strut) to support equipment as required.
  - 2. Use metal channel (strut) secured to studs to support equipment surface-mounted on hollow stud walls.
  - 3. Use metal channel (strut) to support surface-mounted equipment in wet or damp locations to provide space between equipment and mounting surface.
  - 4. Unless otherwise indicated, mount floor-mounted equipment on properly sized 4 inch high concrete pad constructed in accordance with Section 03 3000.
  - 5. Securely fasten floor-mounted equipment. Do not install equipment such that it relies on its own weight for support.
- K. Multiple Raceways or Cables: Install trapeze-type supports fabricated with steel slotted support system, sized so capacity can be increased by at least 25 percent in future without exceeding specified design load limits.
  - 1. Secure raceways and cables to trapeze member with clamps approved for application by an agency acceptable to authorities having jurisdiction.
  - 2. Secure raceways and cables to these supports with single-bolt conduit clamps using spring friction action for retention in support channel
- L. Conduit Support and Attachment: Also comply with Section 26 0533.13.
- M. Cable Tray Support and Attachment: Also comply with Section 26 0536.
- N. Box Support and Attachment: Also comply with Section 26 0533.16.
- O. Interior Luminaire Support and Attachment: Also comply with Section 26 5100.
- P. Exterior Luminaire Support and Attachment: Also comply with Section 26 5600.
- Q. Secure fasteners according to manufacturer's recommended torque settings.
- R. Remove temporary supports.
- S. Identify independent electrical component support wires above accessible ceilings (only where specifically indicated or permitted) with color distinguishable from ceiling support wires in accordance with NFPA 70.

### **3.03 FIELD QUALITY CONTROL**

- A. See Section 01 4000 - Quality Requirements, for additional requirements.
- B. Inspect support and attachment components for damage and defects.
- C. Repair cuts and abrasions in galvanized finishes using zinc-rich paint recommended by manufacturer. Replace components that exhibit signs of corrosion.
- D. Correct deficiencies and replace damaged or defective support and attachment components.

### **END OF SECTION**

**SECTION 26 0533.13  
CONDUIT FOR ELECTRICAL SYSTEMS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Galvanized steel rigid metal conduit (RMC).
- B. Flexible metal conduit (FMC).
- C. Liquidtight flexible metal conduit (LFMC).
- D. Electrical metallic tubing (EMT).
- E. Rigid polyvinyl chloride (PVC) conduit.
- F. Liquidtight flexible nonmetallic conduit (LFNC).
- G. Conduit fittings.
- H. Accessories.

**1.02 RELATED REQUIREMENTS**

- A. Section 03 3000 - Cast-in-Place Concrete: Concrete encasement of conduits.
- B. Section 07 8400 - Firestopping.
- C. Section 26 0526 - Grounding and Bonding for Electrical Systems.
  - 1. Includes additional requirements for fittings for grounding and bonding.
- D. Section 26 0529 - Hangers and Supports for Electrical Systems.
- E. Section 26 0533.16 - Boxes for Electrical Systems.
- F. Section 26 0533.23 - Surface Raceways for Electrical Systems.
- G. Section 26 0548 - Vibration and Seismic Controls for Electrical Systems.
- H. Section 26 0553 - IDENTIFICATION FOR ELECTRICAL SYSTEMS: Identification products and requirements.
- I. Section 27 1000 - Structured Cabling: Additional requirements for communications systems conduits.

**1.03 REFERENCE STANDARDS**

- A. ANSI C80.1 - American National Standard for Electrical Rigid Steel Conduit (ERSC) 2015.
- B. ANSI C80.3 - American National Standard for Electrical Metallic Tubing -- Steel (EMT-S) 2015.
- C. NECA 1 - Standard for Good Workmanship in Electrical Construction 2015.
- D. NECA 101 - Standard for Installing Steel Conduits (Rigid, IMC, EMT) 2013.
- E. NECA 111 - Standard for Installing Nonmetallic Raceways (RNC, ENT, LFNC) 2017.
- F. NEMA FB 1 - Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit, Electrical Metallic Tubing, and Cable 2014.
- G. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- H. UL 1203 - Explosion-Proof and Dust-Ignition-Proof Electrical Equipment for Use in Hazardous (Classified) Locations Current Edition, Including All Revisions.

**1.04 ADMINISTRATIVE REQUIREMENTS**

- A. Coordination:
  - 1. Coordinate minimum sizes of conduits with the actual conductors to be installed, including adjustments for conductor sizes increased for voltage drop.
  - 2. Coordinate the arrangement of conduits with structural members, ductwork, piping, equipment and other potential conflicts installed under other sections or by others.
  - 3. Verify exact conduit termination locations required for boxes, enclosures, and equipment installed under other sections or by others.
  - 4. Coordinate the work with other trades to provide roof penetrations that preserve the integrity of the roofing system and do not void the roof warranty.

5. Notify Architect of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.
- B. Sequencing:
1. Do not begin installation of conductors and cables until installation of conduit is complete between outlet, junction and splicing points.

#### **1.05 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements for submittals procedures.
- B. See Section 01 3300-Administrative Requirements, for submittal procedures.
- C. Product Data: Provide manufacturer's standard catalog pages and data sheets for conduits and fittings.
- D. Shop/Coordination Drawings:
  1. Indicate proposed arrangement for conduits to be installed within concrete slabs, where permitted.
  2. Include proposed locations of roof penetrations and proposed methods for sealing.
  3. Indicate conduit routing to each piece of Owners' furnished utilization equipment/devices.
  4. Indicate conduit routing to each piece of equipment listed on Equipment Connection Schedule as it relates to other trades work and existing conditions.
- E. Project Record Documents: Record actual routing for all conduits installed underground.

#### **1.06 QUALITY ASSURANCE**

- A. Comply with requirements of NFPA 70.
- B. Maintain at the project site a copy of each referenced document that prescribes execution requirements.
- C. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

#### **1.07 DELIVERY, STORAGE, AND HANDLING**

- A. Receive, inspect, handle, and store conduit and fittings in accordance with manufacturer's instructions.
- B. Protect conduit from corrosion and entrance debris by storing above grade. Provide appropriate covering.
- C. Protect PVC Conduit from sunlight.

### **PART 2 PRODUCTS**

#### **2.01 CONDUIT APPLICATIONS**

- A. Do not use conduit and associated fittings for applications other than as permitted by NFPA 70 and product listing.
- B. Unless otherwise indicated and where not otherwise restricted, use the conduit types indicated for the specified applications. Where more than one listed application applies, comply with the most restrictive requirements. Where conduit type for a particular application is not specified, use galvanized steel rigid metal conduit.
- C. Underground:
  1. Under Slab on Grade: Use galvanized steel rigid metal conduit.
  2. Exterior, Direct-Buried: Use galvanized steel rigid metal conduit or rigid PVC conduit.
  3. Where steel conduit emerges from concrete into soil, use corrosion protection tape to provide supplementary corrosion protection for a minimum of 4 inches on either side of where conduit emerges.
- D. Embedded Within Concrete:
- E. Concealed Within Hollow Stud Walls: Use galvanized steel rigid metal conduit or electrical metallic tubing (EMT).
- F. Concealed Above Accessible Ceilings: Use galvanized steel rigid metal conduit or electrical metallic tubing (EMT).

- G. Exposed, Interior, Not Subject to Physical Damage: Use galvanized steel rigid metal conduit or electrical metallic tubing (EMT).
- H. Exposed, Interior, Subject to Physical Damage: Use galvanized steel rigid metal conduit.
  - 1. Locations subject to physical damage include, but are not limited to:
    - a. Where exposed below 8 feet, except within electrical and communication rooms or closets.
    - b. Where exposed below 12 feet in Gymnasiums, Technology Shops, Stages and Warehouse areas.
- I. Exposed, Exterior: Use galvanized steel rigid metal conduit.
- J. Concealed, Exterior, Not Embedded in Concrete or in Contact With Earth: Use galvanized steel rigid metal conduit or rigid PVC conduit.
- K. Connections to Luminaires Above Accessible Ceilings: Use flexible metal conduit.
  - 1. Maximum Length: 6 feet.
- L. Connections to Vibrating Equipment:
  - 1. Dry Locations: Use flexible metal conduit.
  - 2. Damp, Wet, or Corrosive Locations: Use liquidtight flexible metal conduit.
  - 3. Maximum Length: 6 feet unless otherwise indicated.
  - 4. Vibrating equipment includes, but is not limited to:
    - a. Motors.
- M. Fished within existing walls, Where Necessary: Use flexible metal conduit.

## **2.02 CONDUIT REQUIREMENTS**

- A. Existing Work: Where existing conduits are indicated to be reused, they may be reused only where they comply with specified requirements, are free from corrosion, and integrity is verified by pulling a mandrel through them.
- B. Fittings for Grounding and Bonding: Also comply with Section 26 0526.
- C. Provide all conduit, fittings, supports, and accessories required for a complete raceway system.
- D. Provide products listed, classified, and labeled as suitable for the purpose intended.
- E. Minimum Conduit Size, Unless Otherwise Indicated:
  - 1. Branch Circuits: 1/2 inch (16 mm) trade size.
  - 2. Branch Circuit Homeruns: 3/4 inch (21 mm) trade size.
  - 3. Control Circuits: 1/2 inch (16 mm) trade size.
  - 4. Flexible Connections to Luminaires: 3/8 inch (12 mm) trade size.
  - 5. Underground, Interior: 1 inch (27 mm) trade size.
  - 6. Underground, Exterior: 1 inch (27 mm) trade size.
- F. Where conduit size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.

## **2.03 GALVANIZED STEEL RIGID METAL CONDUIT (RMC)**

- A. Manufacturers:
  - 1. Allied Tube & Conduit: [www.alliedeg.com/#sle](http://www.alliedeg.com/#sle).
  - 2. Republic Conduit: [www.republic-conduit.com/#sle](http://www.republic-conduit.com/#sle).
  - 3. Wheatland Tube, a Division of Zekelman Industries: [www.wheatland.com/#sle](http://www.wheatland.com/#sle).
- B. Description: NFPA 70, Type RMC galvanized steel rigid metal conduit complying with ANSI C80.1 and listed and labeled as complying with UL 6.
- C. Fittings:
  - 1. Manufacturers:
    - a. Bridgeport Fittings Inc: [www.bptfittings.com/#sle](http://www.bptfittings.com/#sle).
    - b. O-Z/Gedney, a brand of Emerson Electric Co: [www.emerson.com/#sle](http://www.emerson.com/#sle).
    - c. Thomas & Betts Corporation: [www.tnb.com/#sle](http://www.tnb.com/#sle).
  - 2. Non-Hazardous Locations: Use fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B.
  - 3. Hazardous (Classified) Locations: Use fittings listed and labeled as complying with UL 1203 for the classification of the installed location.

4. Material: Use steel or malleable iron.
  - a. Do not use die cast zinc fittings.
5. Connectors and Couplings: Use threaded type fittings only. Threadless set screw and compression (gland) type fittings are not permitted.

#### **2.04 FLEXIBLE METAL CONDUIT (FMC)**

- A. Manufacturers:
  1. AFC Cable Systems, Inc: [www.afcweb.com/#sle](http://www.afcweb.com/#sle).
  2. Electri-Flex Company: [www.electriflex.com/#sle](http://www.electriflex.com/#sle).
  3. International Metal Hose: [www.metalhose.com/#sle](http://www.metalhose.com/#sle).
- B. Description: NFPA 70, Type FMC standard wall steel jacket flexible metal conduit listed and labeled as complying with UL 1, and listed for use in classified firestop systems to be used. Aluminum jacketed and reduced wall conduit is not allowed.
- C. Fittings:
  1. Manufacturers:
    - a. Bridgeport Fittings Inc: [www.bptfittings.com/#sle](http://www.bptfittings.com/#sle).
    - b. O-Z/Gedney, a brand of Emerson Electric Co: [www.emerson.com/#sle](http://www.emerson.com/#sle).
    - c. Thomas & Betts Corporation: [www.tnb.com/#sle](http://www.tnb.com/#sle).
  2. Description: Fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B.
  3. Material: Use steel or malleable iron.
    - a. Do not use die cast zinc fittings.
- D. Manufacturers:
  1. AFC Cable Systems, Inc: [www.afcweb.com/#sle](http://www.afcweb.com/#sle).
  2. Electri-Flex Company: [www.electriflex.com/#sle](http://www.electriflex.com/#sle).
  3. International Metal Hose: [www.metalhose.com/#sle](http://www.metalhose.com/#sle).
  4. Substitutions: See Section 01 6000 - Product Requirements.
  5. Manufacturers:
    - a. Bridgeport Fittings Inc: [www.bptfittings.com/#sle](http://www.bptfittings.com/#sle).
    - b. O-Z/Gedney, a brand of Emerson Electric Co: [www.emerson.com/#sle](http://www.emerson.com/#sle).
    - c. Thomas & Betts Corporation: [www.tnb.com/#sle](http://www.tnb.com/#sle).
    - d. Substitutions: See Section 01 6000 - Product Requirements.
  6. Description: Fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B.
  7. Material: Use steel or malleable iron.
    - a. Do not use die cast zinc fittings.

#### **2.05 ELECTRICAL METALLIC TUBING (EMT)**

- A. Manufacturers:
  1. Allied Tube & Conduit: [www.alliedeg.com/#sle](http://www.alliedeg.com/#sle).
  2. Republic Conduit: [www.republic-conduit.com/#sle](http://www.republic-conduit.com/#sle).
  3. Wheatland Tube Company: [www.wheatland.com/#sle](http://www.wheatland.com/#sle).
- B. Description: NFPA 70, Type EMT steel electrical metallic tubing complying with ANSI C80.3 and listed and labeled as complying with UL 797.
- C. Fittings:
  1. Manufacturers:
    - a. Bridgeport Fittings Inc: [www.bptfittings.com/#sle](http://www.bptfittings.com/#sle).
    - b. O-Z/Gedney, a brand of Emerson Electric Co: [www.emerson.com/#sle](http://www.emerson.com/#sle).
    - c. Thomas & Betts Corporation: [www.tnb.com/#sle](http://www.tnb.com/#sle).
  2. Description: Fittings complying with NEMA FB 1 and listed and labeled as complying with UL 514B.
  3. Material: Use steel or malleable iron.
    - a. Do not use die cast zinc fittings.
  4. Connectors and Couplings: Use compression (gland) type.
    - a. Do not use indenter type connectors and couplings.
    - b. Do not use set-screw type connectors and couplings.
  5. Damp or Wet Locations (where permitted): Use fittings listed for use in wet locations.

6. Embedded Within Concrete (where permitted): Use fittings listed as concrete-tight. Fittings that require taping to be concrete-tight are acceptable.

## **2.06 RIGID POLYVINYL CHLORIDE (PVC) CONDUIT**

- A. Manufacturers:
  1. Cantex Inc: [www.cantexinc.com/#sle](http://www.cantexinc.com/#sle).
  2. Carlon, a brand of Thomas & Betts Corporation: [www.carlon.com/#sle](http://www.carlon.com/#sle).
  3. JM Eagle: [www.jmeagle.com/#sle](http://www.jmeagle.com/#sle).
- B. Description: NFPA 70, Type PVC rigid polyvinyl chloride conduit complying with NEMA TC 2 and listed and labeled as complying with UL 651; Schedule 80 unless otherwise indicated; rated for use with conductors rated 90 degrees C. Schedule 40 is not approved to be used for this project.
- C. Fittings:
  1. Manufacturer: Same as manufacturer of conduit to be connected.
  2. Description: Fittings complying with NEMA TC 3 and listed and labeled as complying with UL 651; material to match conduit.

## **2.07 ACCESSORIES**

- A. Corrosion Protection Tape: PVC-based, minimum thickness of 20 mil.
- B. Pull Strings: Use nylon cord with average breaking strength of not less than 200 pound-force.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that field measurements are as indicated.
- B. Verify that mounting surfaces are ready to receive conduits.
- C. Verify that conditions are satisfactory for installation prior to starting work.
- D. Verify routing and termination locations of conduit prior to rough-in.

### **3.02 INSTALLATION**

- A. Install products in accordance with manufacturer's instructions.
- B. Perform work in accordance with NECA 1 (general workmanship).
- C. Install galvanized steel rigid metal conduit (RMC) in accordance with NECA 101.
- D. Install liquidtight flexible nonmetallic conduit (LFNC) in accordance with NECA 111.
- E. Conduit Routing:
  1. Unless dimensioned, conduit routing indicated is diagrammatic.
  2. When conduit destination is indicated without specific routing, determine exact routing required.
  3. Conceal all conduits unless specifically indicated to be exposed.
  4. Conduits in the following areas may be exposed, unless otherwise indicated:
    - a. Electrical rooms.
    - b. Mechanical equipment rooms.
    - c. Within joists in areas with no ceiling.
  5. Unless otherwise approved, do not route conduits exposed:
    - a. Across floors.
    - b. Across roofs.
    - c. Across building exterior surfaces.
  6. Conduits installed underground or embedded in concrete may be routed in the shortest possible manner unless otherwise indicated. Route all other conduits parallel or perpendicular to building structure and surfaces, following surface contours where practical. Indicate conduit routing on as-built drawings.
  7. Arrange conduit to maintain adequate headroom, clearances, and access.
  8. Arrange conduit to provide no more than the equivalent of four 90 degree bends between pull points.
  9. Arrange conduit to provide no more than 150 feet interior / 300 feet exterior between pull points.
  10. Route conduits above water and drain piping where possible.

11. Arrange conduit to prevent moisture traps. Provide drain fittings at low points and at sealing fittings where moisture may collect.
  12. Maintain minimum clearance of 6 inches between conduits and piping for other systems.
  13. Maintain minimum clearance of 12 inches between conduits and hot surfaces. This includes, but is not limited to:
    - a. Heaters.
    - b. Hot water piping.
    - c. Flues.
  14. Maintain minimum clearance of 12 inches between conduits and communications conduits and/or cable-tray.
  15. Group parallel conduits in the same area together on a common rack.
- F. Conduit Support:
1. Secure and support conduits in accordance with NFPA 70 and Section 26 0529 using suitable supports and methods approved by the authority having jurisdiction.
  2. Provide required vibration isolation and/or seismic controls in accordance with Section 26 0548.
  3. Provide independent support from building structure. Do not provide support from piping, ductwork, or other systems.
  4. Installation Above Suspended Ceilings: Do not provide support from ceiling support system. Do not provide support from ceiling grid or allow conduits to lay on ceiling tiles.
  5. Use conduit strap to support single surface-mounted conduit.
  6. Use metal channel (strut) with accessory conduit clamps to support multiple parallel surface-mounted conduits.
  7. Use conduit clamp to support single conduit from beam clamp or threaded rod.
  8. Use trapeze hangers assembled from threaded rods and metal channel (strut) with accessory conduit clamps to support multiple parallel suspended conduits.
  9. Use non-penetrating rooftop supports to support conduits routed across rooftops (only where approved).
  10. Use of spring steel conduit clips for support of conduits is not permitted.
  11. Use of wire for support of conduits is not permitted.
  12. Where conduit support intervals specified in NFPA 70 and NECA standards differ, comply with the most stringent requirements.
- G. Connections and Terminations:
1. Use approved zinc-rich paint or conduit joint compound on field-cut threads of galvanized steel conduits prior to making connections.
  2. Where two threaded conduits must be joined and neither can be rotated, use three-piece couplings or split couplings. Do not use running threads.
  3. Use suitable adapters where required to transition from one type of conduit to another.
  4. Terminate threaded conduits in boxes and enclosures using threaded hubs or double lock nuts for dry locations and raintight hubs for wet locations.
  5. Provide insulating bushings or insulated throats at all conduit terminations to protect conductors.
  6. Secure joints and connections to provide maximum mechanical strength and electrical continuity.
- H. Penetrations:
1. Do not penetrate or otherwise notch or cut structural members, including footings and grade beams, without approval of Structural Engineer.
  2. Make penetrations perpendicular to surfaces unless otherwise indicated.
  3. Provide sleeves for penetrations as indicated or as required to facilitate installation. Set sleeves flush with exposed surfaces unless otherwise indicated or required.
  4. Conceal bends for conduit risers emerging above ground.
  5. Seal interior of conduits entering the building from underground at first accessible point to prevent entry of moisture and gases.
  6. Provide modular seal where conduits penetrate exterior wall below grade.
  7. Where conduits penetrate waterproof membrane, seal as required to maintain integrity of membrane.



8. Make penetrations for roof-mounted equipment within associated equipment openings and curbs where possible to minimize roofing system penetrations. Where penetrations are necessary, seal as indicated or as required to preserve integrity of roofing system and maintain roof warranty. Include proposed locations of penetrations and methods for sealing with submittals. All roof penetrations to be by certified roofing Contractor.
9. Provide metal escutcheon plates for conduit penetrations exposed to public view.
10. Install firestopping to preserve fire resistance rating of partitions and other elements, using materials and methods specified in Section 07 8400.
- I. Underground Installation:
  1. All trenching and backfilling by Site Contractor. Sand bed and conduits by Electric Contractor.
  2. Minimum Cover, Unless Otherwise Indicated or Required:
    - a. Underground, Exterior: 24 inches.
    - b. Under Slab on Grade: 12 inches to bottom of slab.
  3. Provide underground detectable warning tape in accordance with Section 26 0553.
- J. Conduit Movement Provisions: Where conduits are subject to movement, provide expansion and expansion/deflection fittings to prevent damage to enclosed conductors or connected equipment. This includes, but is not limited to:
  1. Where conduits cross structural joints intended for expansion, contraction, or deflection.
- K. Condensation Prevention: Where conduits cross barriers between areas of potential substantial temperature differential, provide sealing fitting or approved sealing compound at an accessible point near the penetration to prevent condensation. This includes, but is not limited to:
  1. Where conduits pass from outdoors into conditioned interior spaces.
  2. Where conduits pass from unconditioned interior spaces into conditioned interior spaces.
  3. Where conduits penetrate coolers or freezers.
- L. Provide pull string in all empty conduits and in conduits where conductors and cables are to be installed by others. Leave minimum slack of 12 inches at each end.
- M. Provide grounding and bonding in accordance with Section 26 0526.
- N. Identify conduits in accordance with Section 26 0553.
- O. Paint exposed conduits and associated components, in finished spaces, in accordance with Section 09 9000
- P. Provide conduit bushings on all low voltage conduit stub-outs.

### **3.03 FIELD QUALITY CONTROL**

- A. See Section 01 4000 - Quality Requirements, for additional requirements.
- B. Repair cuts and abrasions in galvanized finishes using zinc-rich paint recommended by manufacturer. Replace components that exhibit signs of corrosion.
- C. Correct deficiencies and replace damaged or defective conduits.

### **3.04 CLEANING**

- A. Clean interior of conduits to remove moisture and foreign matter.

### **3.05 PROTECTION**

- A. Immediately after installation of conduit, use suitable manufactured plugs to provide protection from entry of moisture and foreign material and do not remove until ready for installation of conductors.

## **END OF SECTION**

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**SECTION 26 0533.16**  
**BOXES FOR ELECTRICAL SYSTEMS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Outlet and device boxes up to 100 cubic inches, including those used as junction and pull boxes.
- B. Cabinets and enclosures, including junction and pull boxes larger than 100 cubic inches.
- C. Boxes and enclosures for integrated power, data, and audio/video.
- D. Boxes for hazardous (classified) locations.
- E. Floor boxes.
- F. Accessories.

**1.02 RELATED REQUIREMENTS**

- A. Section 07 8400 - Firestopping.
- B. Section 26 0526 - Grounding and Bonding for Electrical Systems.
- C. Section 26 0529 - Hangers and Supports for Electrical Systems.
- D. Section 26 0533.13 - Conduit for Electrical Systems.
- E. Section 26 0533.23 - Surface Raceways for Electrical Systems:
- F. Section 26 0553 - IDENTIFICATION FOR ELECTRICAL SYSTEMS: Identification products and requirements.
- G. Section 26 2726 - Wiring Devices:

**1.03 REFERENCE STANDARDS**

- A. NECA 1 - Standard for Good Workmanship in Electrical Construction 2015.
- B. NEMA FB 1 - Fittings, Cast Metal Boxes, and Conduit Bodies for Conduit, Electrical Metallic Tubing, and Cable 2014.
- C. NEMA OS 1 - Sheet-Steel Outlet Boxes, Device Boxes, Covers, and Box Supports 2013.
- D. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum) 2018.
- E. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- F. UL 1203 - Explosion-Proof and Dust-Ignition-Proof Electrical Equipment for Use in Hazardous (Classified) Locations Current Edition, Including All Revisions.

**1.04 ADMINISTRATIVE REQUIREMENTS**

- A. Coordination:
  - 1. Coordinate the work with other trades to avoid placement of ductwork, piping, equipment, or other potential obstructions within the dedicated equipment spaces and working clearances for electrical equipment required by NFPA 70.
  - 2. Coordinate arrangement of electrical equipment with the dimensions and clearance requirements of the actual equipment to be installed.
  - 3. Coordinate minimum sizes of boxes with the actual installed arrangement of conductors, clamps, support fittings, and devices, calculated according to NFPA 70.
  - 4. Coordinate minimum sizes of pull boxes with the actual installed arrangement of connected conduits, calculated according to NFPA 70.
  - 5. Coordinate the placement of boxes with millwork, furniture, devices, equipment, etc. installed under other sections or by others.
  - 6. Coordinate the work with other trades to preserve insulation integrity.
  - 7. Coordinate the work with other trades to provide walls suitable for installation of flush-mounted boxes where indicated.
  - 8. Notify Architect of any conflicts with or deviations from the contract documents. Obtain direction before proceeding with work.

**1.05 SUBMITTALS**

- A. See Section 01 3300 - Submittal Procedures, for submittal process.

- B. Product Data: Provide manufacturer's standard catalog pages and data sheets for outlet and device boxes and junction and pull boxes.
- C. Project Record Documents: Record actual locations for outlet and device boxes, pull boxes, cabinets and enclosures, floor boxes, and underground boxes/enclosures.
- 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. Keys for Lockable Enclosures: Two of each different key.

## **1.06 QUALITY ASSURANCE**

- A. Conform to requirements of NFPA 70.
- B. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

## **1.07 DELIVERY, STORAGE, AND HANDLING**

- A. Receive, inspect, handle, and store products in accordance with manufacturer's instructions.

## **PART 2 PRODUCTS**

### **2.01 BOXES**

- A. General Requirements:
  - 1. Do not use boxes and associated accessories for applications other than as permitted by NFPA 70 and product listing.
  - 2. Provide all boxes, fittings, supports, and accessories required for a complete raceway system and to accommodate devices and equipment to be installed.
  - 3. Provide products listed, classified, and labeled as suitable for the purpose intended.
  - 4. Where box size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified.
  - 5. Provide grounding terminals within boxes where equipment grounding conductors terminate.
- B. Outlet and Device Boxes Up to 100 cubic inches, Including Those Used as Junction and Pull Boxes:
  - 1. Use sheet-steel boxes for dry locations unless otherwise indicated or required.
  - 2. Use cast iron boxes for damp or wet locations unless otherwise indicated or required; furnish with compatible weatherproof gasketed covers.
  - 3. Do not use "through-wall" boxes designed for access from both sides of wall.
  - 4. Sheet-Steel Boxes: Comply with NEMA OS 1, and list and label as complying with UL 514A.
  - 5. Cast Metal Boxes: Comply with NEMA FB 1, and list and label as complying with UL 514A; furnish with threaded hubs.
  - 6. Boxes for Supporting Luminaires and Ceiling Fans: Listed as suitable for the type and weight of load to be supported; furnished with fixture stud to accommodate mounting of luminaire where required.
  - 7. Boxes for Ganged Devices: Use multigang boxes of single-piece construction. Do not use field-connected gangable boxes.
  - 8. Minimum Box Size, Unless Otherwise Indicated:
    - a. Wiring Devices (Other Than Communications Systems Outlets): 4 inch square by 1-1/2 inch deep (100 by 38 mm) trade size.
    - b. Communications Systems Outlets: Comply with Section 27 1000.
  - 9. Wall Plates: Comply with Section 26 2726.
  - 10. Manufacturers:
    - a. Cooper Crouse-Hinds, a division of Eaton Corporation: [www.cooperindustries.com/#sle](http://www.cooperindustries.com/#sle).
    - b. Hubbell Incorporated; RACO Products: [www.hubbell-rtb.com](http://www.hubbell-rtb.com).
    - c. O-Z/Gedney, a brand of Emerson Industrial Automation: [www.emersonindustrial.com/#sle](http://www.emersonindustrial.com/#sle).
    - d. Thomas & Betts Corporation: [www.tnb.com/#sle](http://www.tnb.com/#sle).
- C. Cabinets and Enclosures, Including Junction and Pull Boxes Larger Than 100 cubic inches:

1. Comply with NEMA 250, and list and label as complying with UL 50 and UL 50E, or UL 508A.
2. NEMA 250 Environment Type, Unless Otherwise Indicated:
  - a. Indoor Clean, Dry Locations: Type 1, painted steel.
  - b. Outdoor Locations: Type 3R, painted steel.
3. Junction and Pull Boxes Larger Than 100 cubic inches:
  - a. Provide screw-cover or hinged-cover enclosures unless otherwise indicated.
  - b. Boxes 6 square feet and Larger: Provide sectionalized screw-cover or hinged-cover enclosures.
4. Cabinets and Hinged-Cover Enclosures, Other Than Junction and Pull Boxes:
  - a. Provide lockable hinged covers, all locks keyed alike unless otherwise indicated.
5. Finish for Painted Steel Enclosures: Manufacturer's standard grey unless otherwise indicated.
6. Manufacturers:
  - a. Cooper B-Line, a division of Eaton Corporation: [www.cooperindustries.com/#sle](http://www.cooperindustries.com/#sle).
  - b. Hoffman, a brand of Pentair Technical Products: [www.hoffmanonline.com/#sle](http://www.hoffmanonline.com/#sle).
  - c. Hubbell Incorporated; Wiegmann Products: [www.hubbell-wiegmann.com/#sle](http://www.hubbell-wiegmann.com/#sle).
- D. Boxes and Enclosures for Integrated Power, Data, and Audio/Video: Size and configuration as indicated or as required with partitions to separate services; field-connected gangable boxes may be used.
- E. Boxes for Hazardous (Classified) Locations: Listed and labeled as complying with UL 1203 for the classification of the installed location.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that field measurements are as shown on drawings.
- B. Verify that mounting surfaces are ready to receive boxes.
- C. Verify that conditions are satisfactory for installation prior to starting work.
- D. Verify locations of floor boxes and outlets in offices and work areas prior to rough-in.

### **3.02 INSTALLATION**

- A. Install products in accordance with manufacturer's instructions.
- B. Perform work in a neat and workmanlike manner in accordance with NECA 1 and, where applicable, NECA 130, including mounting heights specified in those standards where mounting heights are not indicated.
- C. Arrange equipment to provide minimum clearances in accordance with manufacturer's instructions and NFPA 70.
- D. Provide separate boxes for emergency power and normal power systems.
- E. Unless otherwise indicated, provide separate boxes for line voltage and low voltage systems.
- F. Flush-mount boxes in finished areas unless specifically indicated to be surface-mounted.
- G. Unless otherwise indicated, boxes may be surface-mounted where exposed conduits are indicated or permitted.
- H. Box Locations:
  1. Locate boxes to be accessible. Provide access panels in accordance with Section 08 3100 as required where approved by the Architect.
  2. Unless dimensioned, box locations indicated are approximate.
  3. Locate boxes as required for devices installed under other sections or by others.
    - a. Switches, Receptacles, and Other Wiring Devices: Comply with Section 26 2726.
    - b. Communications Systems Outlets: Comply with Section 27 1000.
  4. Locate boxes so that wall plates do not span different building finishes.
  5. Locate boxes so that wall plates do not cross masonry joints.
  6. Unless otherwise indicated, where multiple outlet boxes are installed at the same location at different mounting heights, install along a common vertical center line.
  7. Do not install flush-mounted boxes on opposite sides of walls back-to-back. Provide minimum 6 inches horizontal separation unless otherwise indicated.

8. Fire Resistance Rated Walls: Install flush-mounted boxes such that the required fire resistance will not be reduced.
  - a. Do not install flush-mounted boxes on opposite sides of walls back-to-back; provide minimum 24 inches separation where wall is constructed with individual noncommunicating stud cavities or protect both boxes with listed putty pads.
  - b. Do not install flush-mounted boxes with area larger than 16 square inches or such that the total aggregate area of openings exceeds 100 square inches for any 100 square feet of wall area.
9. Locate junction and pull boxes as indicated, as required to facilitate installation of conductors, and to limit conduit length and/or number of bends between pulling points in accordance with Section 26 0533.13.
10. Locate junction and pull boxes in the following areas, unless otherwise indicated or approved by the Architect:
  - a. Concealed above accessible suspended ceilings.
  - b. Within joists in areas with no ceiling.
  - c. Electrical rooms.
  - d. Mechanical equipment rooms.
- I. Box Supports:
  1. Secure and support boxes in accordance with NFPA 70 and Section 26 0529 using suitable supports and methods approved by the authority having jurisdiction.
  2. Provide independent support from building structure. Do not provide support from piping, ductwork, or other systems.
  3. Installation Above Suspended Ceilings: Do not provide support from ceiling grid or ceiling support system.
  4. Use far-side support to secure flush-mounted boxes supported from single stud in hollow stud walls. Repair or replace supports for boxes that permit excessive movement.
- J. Install boxes plumb and level.
- K. Flush-Mounted Boxes:
  1. Install boxes in noncombustible materials such as concrete, tile, gypsum, plaster, etc. so that front edge of box or associated raised cover is not set back from finished surface more than 1/4 inch or does not project beyond finished surface.
  2. Install boxes in combustible materials such as wood so that front edge of box or associated raised cover is flush with finished surface.
  3. Repair rough openings around boxes in noncombustible materials such as concrete, tile, gypsum, plaster, etc. so that there are no gaps or open spaces greater than 1/8 inch at the edge of the box.
- L. Install boxes as required to preserve insulation integrity.
- M. Inaccessible Ceiling Areas: Install outlet and junction boxes no more than 6 inches from ceiling access panel or from removable recessed luminaire.
- N. Install permanent barrier between ganged wiring devices when voltage between adjacent devices exceeds 300 V.
- O. Install firestopping to preserve fire resistance rating of partitions and other elements, using materials and methods specified in Firestopping Specification Section .
- P. Close all unused box openings.
- Q. Install blank wall plates on junction boxes and on outlet boxes with no devices or equipment installed.
- R. Provide grounding and bonding in accordance with Section 26 0526.
- S. Identify boxes in accordance with Section 26 0553.

### **3.03 CLEANING**

- A. Clean interior of boxes to remove dirt, debris, plaster and other foreign material.

### **3.04 PROTECTION**

- A. Immediately after installation, protect boxes from entry of moisture and foreign material until ready for installation of conductors.

## **END OF SECTION**

**SECTION 26 0533.23**  
**SURFACE RACEWAYS FOR ELECTRICAL SYSTEMS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Surface raceway systems.
- B. Lay-in Wireways / Wiring Troughs.

**1.02 RELATED REQUIREMENTS**

- A. Section 26 0526 - Grounding and Bonding for Electrical Systems.
- B. Section 26 0529 - Hangers and Supports for Electrical Systems.
- C. Section 26 0533.13 - Conduit for Electrical Systems.
- D. Section 26 0533.16 - Boxes for Electrical Systems.
- E. Section 26 0553 - IDENTIFICATION FOR ELECTRICAL SYSTEMS:
- F. Section 26 2726 - Wiring Devices:

**1.03 REFERENCE STANDARDS**

- A. NECA 1 - Standard for Good Workmanship in Electrical Construction 2015.
- B. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- C. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum) 2018.
- D. NEMA PRP 5 - Installation Guidelines for Surface Nonmetallic Raceway 2015.
- E. UL 5 - Surface Metal Raceways and Fittings Current Edition, Including All Revisions.
- F. UL 5A - Nonmetallic Surface Raceways and Fittings Current Edition, Including All Revisions.
- G. UL 111 - Outline of Investigation for Multioutlet Assemblies Current Edition, Including All Revisions.
- H. UL 870 - Wireways, Auxiliary Gutters, and Associated Fittings Current Edition, Including All Revisions.

**1.04 ADMINISTRATIVE REQUIREMENTS**

- A. Coordination:
  - 1. Coordinate the placement of raceways with millwork, furniture, equipment, etc. installed under other sections or by others.
  - 2. Coordinate rough-in locations of outlet boxes provided under Section 26 0533.16 and conduit provided under Section 26 0533.13 as required for installation of raceways provided under this section.
  - 3. Verify minimum sizes of raceways with the actual conductors and components to be installed.
  - 4. Notify Architect of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.
- B. Sequencing:
  - 1. Do not install raceways until final surface finishes and painting are complete.
  - 2. Do not begin installation of conductors and cables until installation of raceways system is substantially complete between outlet, junction and splicing points.

**1.05 SUBMITTALS**

- A. See Section 01 3300-Administrative Requirements, for submittal procedures.
- B. Product Data: Provide manufacturer's standard catalog pages and data sheets including dimensions, knockout sizes and locations, materials, fabrication details, finishes, service condition requirements, and accessories.
  - 1. Surface Raceway Systems: Include information on fill capacities for conductors and cables.
- C. Shop Drawings:

1. Wireways: Provide dimensioned plan and elevation views including adjacent equipment with all required clearances indicated.

#### **1.06 QUALITY ASSURANCE**

- A. Comply with requirements of NFPA 70.
- B. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

#### **1.07 DELIVERY, STORAGE, AND HANDLING**

- A. Receive, inspect, handle, and store products in accordance with manufacturer's instructions.
- B. Products: Furnish products listed and classified by Underwriters Laboratories Inc. as suitable for purpose specified and shown.

### **PART 2 PRODUCTS**

#### **2.01 RACEWAY REQUIREMENTS**

- A. Provide all components, fittings, supports, and accessories required for a complete raceway system.
- B. Provide products listed, classified, and labeled as suitable for the purpose intended.
- C. Do not use raceways for applications other than as permitted by NFPA 70 and product listing.

#### **2.02 DUAL CHANNEL SURFACE RACEWAY**

- A. Basis of Design: Wiremold 5400TB Series.
- B. Acceptable Manufacturers:
  1. The Wiremold Co.
  2. Hubbell Wiring Devices.
  3. Mono Systems
- C. Materials: The raceway and all system components must be composed of UL Listed materials and exhibit nonflammable self-extinguishing characteristics, tested to comparable specifications of UL94V-0. The raceway base and cover shall be manufactured of rigid PVC compound.
- D. Color: Finish shall be Ivory
- E. Raceway:
  1. The raceway shall be a 2-piece design with a base and snap-on covers. The raceway base shall accept both a single cover that spans the entire base or two (2) individual TwinSnap™ covers. Total width shall be 5.25 inches x 1.75 inches deep with an approximate thickness of 0.095 inches. The base and cover shall be available in 8 foot lengths. The raceway shall be available with two wiring channels separated by one integral barrier.
  2. Each channel must be large enough to accept standard power and communications devices without restricting capacity of the adjacent channel.
- F. Fittings and Inserts:
  1. A complete line of full capacity corner elbows and tee fittings must be available to maintain a controlled 2 inch cable bend radius which meets the specifications for fiber optic and UTP/STP cabling and exceeds the TIA 569 requirements for communication pathways.
  2. A full complement of fittings for the cable area shall be available including, but not limited to 45 degree and 90 degree flat, vertical inside, and outside elbows, tee and cross fittings, couplings for joining sections of the tray, reducers, end blanks, field-installed dividers, wire clips, and all other components necessary to make the system as described on the contract drawings workable. The fittings and inserts shall have finish matching that of the wiremold assembly.
- G. Device Brackets and plates: Device brackets shall be available for mounting standard devices in-line or offset from the raceway. A device bracket shall provide up to three single-gang openings at one location. Faceplates shall be 5507 Series that match and fit flush in



the device plate. They shall be manufactured of rigid PVC compound.

- H. Plastic Overlapping Cover Bracket and Faceplates:
  - 1. A complete line of full capacity corner elbows and tee fittings must be available to maintain a controlled 2" cable bend radius which meets the specifications for Fiber Optic and UTP/STP cabling and exceeds the TIA 569 requirements for communication pathways.
  - 2. Cover and face plates for communication devices shall be compatible with modular devices as specified in Section 26 2726.
- I. Communication Modular Devices and Identification:
  - 1. The raceway manufacturer will provide a complete line of connectivity outlets and modular inserts for UTP, STP, fiber optic, coaxial, and other cabling types with faceplates and bezels to facilitate mounting
  - 2. Port identification labels, snap-in icon buttons as well as write-on station identification labels shall be provided for each assembly.
  - 3. Refer to Section 26 2726 specification section for additional requirements.
- J. Branch Circuits and Receptacles: Refer to Power plans for branch circuit wiring requirements. Provide branch circuits and receptacles as identified on drawings. Coordinate wiring device manufacturer and model numbers to provide receptacles that are designed for the raceway product.
  - 1. Devices shall comply with requirements (ampacity, voltage and quality/grade) as specified in Section 26 2726.

### **2.03 SINGLE CHANNEL SURFACE RACEWAY**

- A. Basis of Design: Wiremold 700 Series.
- B. Materials: Galvanized steel
- C. Color: Finish shall be Ivory
- D. Raceway:
  - 1. The raceway shall be of one-piece design with a base and cover factory assembled. Total width shall be 0.75 inch x 0.66 inch deep with a cross sectional area of 0.25 square inches. The raceway shall be available in 5 foot and 10 foot lengths. Use a manufacturer approved cutting tool for all field cuts to ensure clean, square cuts.
  - 2. Finish shall be a base coat with a polyester topcoat ivory base coat.
- E. Fittings and Inserts:
  - 1. A full compliment of fittings shall be available including but not limited to mounting clips and straps, couplings, flat, internal and external elbows, cover clips, tees, entrance fittings, conduit connectors and bushings. The covers shall be painted with an enamel finish, in ivory color to match the V800 series raceway. They shall overlap the raceway to hide uneven cuts. All fittings shall be supplied with a base where applicable.
- F. Device and Fixture Boxes:
  - 1. Device boxes shall be available for mounting standard devices and faceplates. A device box shall be available in single- or multiple-gang configurations up to six-gang. They shall range in depth from 0.94 inch to 2.75 inches. Single-gang boxes shall allow for snap-on and fastener applications. Extension boxes shall be available to adapt to existing standard flush switch and receptacle boxes. Round fixture and extension boxes shall be available to mount fixtures and other devices with mounting centers of 1-15/32 inches, 1-5/8 inches, 1-23/32 inches, 1-27/32 inches, 2-3/4 inches, 3-1/2 inches, and 4-1/16 inches diameters. Round fixture and extension boxes shall be available in depths ranging from 0.47 inch to 1 inch and in diameters of 3.00 inches, 4.75 inches, 5.50 inches, and 6.38 inches. All devices and fixture box covers shall be painted with an enamel finish, ivory in color to match the raceway cover.
- G. Communication Modular Devices and Identification:
  - 1. The raceway manufacturer will provide a complete line of connectivity outlets and modular inserts for UTP, STP, fiber optic, coaxial, and other cabling types with faceplates and bezels to facilitate mounting
  - 2. Port identification labels, snap-in icon buttons as well as write-on station identification labels shall be provided for each assembly.

3. Refer to Section 26 2726 specification section for additional requirements.
- H. Branch Circuits and Receptacles: Refer to Power plans for branch circuit wiring requirements. Provide branch circuits and receptacles as identified on drawings. Coordinate wiring device manufacturer and model numbers to provide receptacles that are designed for the raceway product.
  1. Devices shall comply with requirements (ampacity, voltage and quality/grade) as specified in Section 26 2726.

#### **2.04 LAY-IN WIREWAYS / WIRING TROUGHS**

- A. Manufacturers:
  1. Cooper B-Line, a division of Cooper Industries: [www.cooperindustries.com/#sle](http://www.cooperindustries.com/#sle).
  2. Enduro Composites: [www.endurocomposites.com/#sle](http://www.endurocomposites.com/#sle).
  3. Hoffman, a brand of Pentair Technical Products: [www.hoffmanonline.com/#sle](http://www.hoffmanonline.com/#sle).
  4. Schneider Electric; Square D Products: [www.schneider-electric.us/#sle](http://www.schneider-electric.us/#sle).
- B. Description: Lay-in wireways and wiring troughs with removable covers; listed and labeled as complying with UL 870.
- C. Wireway Type, Unless Otherwise Indicated:
  1. Indoor Clean, Dry Locations: NEMA 250, Type 1, painted steel with screw-cover.
  2. Outdoor Locations: NEMA 250, Type 3R, painted steel with screw-cover; include provision for padlocking.
- D. Minimum Wireway Size: 4 by 4 inches unless otherwise indicated.
- E. Where wireway size is not indicated, size to comply with NFPA 70 but not less than applicable minimum size requirements specified. Size wireway for minimum 40% wire fill ratio, unless noted otherwise.

#### **2.05 SOURCE QUALITY CONTROL**

- A. See Section 01 4000 - Quality Requirements, for additional requirements.
- B. Factory test each production unit for pre-wired surface raceway systems to verify proper wiring.

### **PART 3 EXECUTION**

#### **3.01 EXAMINATION**

- A. Verify that field measurements are as indicated.
- B. Verify that outlet boxes and conduit terminations are installed in proper locations and are properly sized in accordance with NFPA 70 to accommodate raceways.
- C. Verify that mounting surfaces are ready to receive raceways and that final surface finishes are complete, including painting.
- D. Verify that conditions are satisfactory for installation prior to starting work.

#### **3.02 INSTALLATION**

- A. Install products in accordance with manufacturer's instructions.
- B. Perform work in accordance with NECA 1 (general workmanship).
- C. Surface Nonmetallic Raceways: Install in accordance with NEMA PRP 5.
- D. Install raceways plumb and level.
- E. Arrange wireways and associated raceway connections to comply with NFPA 70, including but not limited to requirements for deflected conductors and wireways used as pullboxes. Increase size of wireway where necessary.
- F. Secure and support raceways in accordance with Section 26 0529 at intervals complying with NFPA 70 and manufacturer's requirements.
- G. Close unused raceway openings.
- H. Provide grounding and bonding in accordance with Section 26 0526.
- I. Identify raceways in accordance with Section 26 0553.
- J. Coordinate dual channel installations with contractor responsible for Div 27 work. Provide required backing plates and associated components for wiring devices shown in T-series

drawings.

- K. Coordinate in field all locations, mounting heights, and raceway configurations with Architect prior to rough-in.

### **3.03 FIELD QUALITY CONTROL**

- A. See Section 01 4000 - Quality Requirements, for additional requirements.
- B. Inspect raceways for damage and defects.
- C. Surface Raceway Systems with Integrated Devices: Test each wiring device to verify operation and proper polarity.
- D. Correct wiring deficiencies and replace damaged or defective raceways.

### **3.04 CLEANING**

- A. Clean exposed surfaces to remove dirt, paint, or other foreign material and restore to match original factory finish.

### **3.05 PROTECTION**

- A. Protect installed raceways from subsequent construction operations.

**END OF SECTION**

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**SECTION 26 0553**  
**IDENTIFICATION FOR ELECTRICAL SYSTEMS**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Electrical identification requirements.
- B. Identification nameplates and labels.
- C. Wire and cable color coding.
- D. Voltage markers.
- E. Underground warning tape.
- F. Floor marking tape.

**1.02 REFERENCE STANDARDS**

- A. ANSI Z535.2 - American National Standard for Environmental and Facility Safety Signs 2011.
- B. ANSI Z535.4 - American National Standard for Product Safety Signs and Labels 2011.
- C. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- D. NFPA 70E - Standard for Electrical Safety in the Workplace 2018.

**1.03 ADMINISTRATIVE REQUIREMENTS**

- A. Coordination:
  - 1. Verify final designations for equipment, systems, and components to be identified prior to fabrication of identification products.
- B. Sequencing:
  - 1. Do not conceal items to be identified, in locations such as above suspended ceilings, until identification products have been installed.
  - 2. Do not install identification products until final surface finishes and painting are complete.

**1.04 SUBMITTALS**

- A. See Section 01 3300 - Submittal Procedures, for submittal process.
- B. Product Data: Provide manufacturer's standard catalog pages and data sheets for each product.

**1.05 QUALITY ASSURANCE**

- A. Conform to requirements of NFPA 70.

**1.06 FIELD CONDITIONS**

- A. Do not install adhesive products when ambient temperature is lower than recommended by manufacturer.

**PART 2 PRODUCTS**

**2.01 IDENTIFICATION REQUIREMENTS**

- A. Identification for Equipment:
  - 1. Use identification nameplate to identify each piece of electrical distribution and control equipment and associated sections, compartments, and components.
    - a. Switchboards:
      - 1) Use identification nameplate to identify load(s) served for each branch device. Identify spares and spaces.
    - b. Panelboards:
      - 1) Identify ampere rating.
      - 2) Identify voltage and phase.
      - 3) Identify installation date.
      - 4) Identify power source and circuit number. Include location when not within sight of equipment.

- 5) Identify main overcurrent protective device. Use identification label for panelboards with a door. For power distribution panelboards without a door, use identification nameplate.
- 6) Use typewritten circuit directory to identify load(s) served for panelboards with a door. Identify spares and spaces.
- 7) For power panelboards without a door, use identification nameplate to identify load(s) served for each branch device. Identify spares and spaces.
- c. Enclosed switches, circuit breakers, and motor controllers:
  - 1) Identify voltage and phase.
  - 2) Identify installation date.
  - 3) Identify power source and circuit number. Include location when not within sight of equipment.
  - 4) Identify load(s) served. Include location when not within sight of equipment.
- d. Enclosed Contactors:
  - 1) Identify ampere rating.
  - 2) Identify voltage and phase.
  - 3) Identify configuration, e.g., E.O.E.H. (electrically operated, electrically held) or E.O.M.H. (electrically operated, mechanically held).
  - 4) Identify coil voltage.
  - 5) Identify load(s) and associated circuits controlled. Include location.
2. Use voltage marker to identify highest voltage present for each piece of electrical equipment.
3. Use identification nameplate to identify disconnect location for equipment with remote disconnecting means.
4. Use identification label on inside of door at each fused switch to identify required NEMA fuse class and size.
5. Use identification label to identify overcurrent protective devices for branch circuits serving fire alarm circuits. Identify with text "FIRE ALARM CIRCUIT".
6. Use field-painted floor markings, floor marking tape, or warning labels to identify required equipment working clearances where indicated or where required by the authority having jurisdiction.
7. Arc Flash Hazard Warning Labels: Use warning labels to identify arc flash hazards for electrical equipment, such as switchboards, panelboards, industrial control panels, meter socket enclosures, and motor control centers that are likely to require examination, adjustment, servicing, or maintenance while energized.
  - a. Minimum Size: 3.5 by 5 inches.
  - b. Legend: Include orange header that reads "WARNING", followed by the word message "Arc Flash and Shock Hazard; Appropriate PPE Required; Do not operate controls or open covers without appropriate personal protection equipment; Failure to comply may result in injury or death; Refer to NFPA 70E for minimum PPE requirements" or approved equivalent.
- B. Identification for Conductors and Cables:
  1. Color Coding for Power Conductors 600 V and Less: Comply with Section 26 0519.
  2. Identification for Communications Conductors and Cables: Comply with Section 27 1000.
  3. Use identification nameplate or identification label to identify color code for ungrounded and grounded power conductors inside door or enclosure at each piece of feeder or branch-circuit distribution equipment when premises has feeders or branch circuits served by more than one nominal voltage system.
  4. Use wire and cable markers to identify circuit number or other designation indicated for power, control, and instrumentation conductors and cables at the following locations:
    - a. At each source and load connection.
    - b. Within boxes when more than one circuit is present.
    - c. Within equipment enclosures when conductors and cables enter or leave the enclosure.
- C. Identification for Raceways:

1. Use voltage markers to identify highest voltage present for accessible conduits at maximum intervals of 20 feet.
  2. Use voltage markers or color-coded bands to identify systems other than normal power system for accessible conduits at maximum intervals of 20 feet.
    - a. Color-Coded Bands: Use field-painting or vinyl color coding electrical tape to mark bands 3 inches wide.
      - 1) Color Code:
        - (a) Fire Alarm System: Red.
      - 2) Field-Painting: Comply with Section 09 9123 and 09 9113.
      - 3) Vinyl Color Coding Electrical Tape: Comply with Section 26 0519.
  3. Use identification labels or plastic marker tags to identify circuits enclosed for accessible conduits at wall penetrations, at floor penetrations, at roof penetrations, and at equipment terminations when source is not within sight.
  4. Use identification labels or plastic marker tags to identify spare conduits at each end. Identify purpose and termination location.
  5. Use underground warning tape to identify underground raceways.
  6. Use voltage markers to identify highest voltage present for wireways at maximum intervals of 20 feet.
- D. Identification for Boxes:
1. Use voltage markers to identify highest voltage present.
  2. Use voltage markers or color coded boxes to identify systems other than normal power system.
    - a. Color-Coded Boxes: Field-painted in accordance with Section 09 9123 and 09 9113 per the same color code used for raceways.
      - 1) Fire Alarm System: Red.
    - b. For exposed boxes in public areas, do not color code.
  3. Use identification labels to identify circuits enclosed.
    - a. For exposed boxes in public areas, use only identification labels.
- E. Identification for Devices:
1. Identification for Communications Devices: Comply with Section 27 1000.
  2. Wiring Device and Wallplate Finishes: Comply with Section 26 2726.
  3. Use identification label to identify fire alarm system devices.
    - a. For devices concealed above suspended ceilings, provide additional identification on ceiling tile below device location.
  4. Use identification label or engraved wallplate to identify serving branch circuit for all receptacles.
  5. Use identification label or engraved wallplate to identify load controlled for wall-mounted control devices controlling loads that are not visible from the control location and for multiple wall-mounted control devices installed at one location.
  6. Use identification label to identify receptacles protected by upstream GFI protection, where permitted.

## 2.02 IDENTIFICATION NAMEPLATES AND LABELS

- A. Identification Nameplates:
1. Manufacturers:
    - a. Brady Corporation: [www.bradycorp.com](http://www.bradycorp.com)
    - b. Seton Identification Products: [www.seton.com/aec](http://www.seton.com/aec)
    - c. Hellermann Tyton: [www.hellermannntyton.com](http://www.hellermannntyton.com)
    - d. Brimar Industries, Inc: [www.brimar.com/#sle](http://www.brimar.com/#sle).
  2. Materials:
    - a. Indoor Clean, Dry Locations: Use plastic nameplates.
    - b. Outdoor Locations: Use plastic, stainless steel, or aluminum nameplates suitable for exterior use.
  3. Plastic Nameplates: Two-layer or three-layer laminated acrylic or electrically non-conductive phenolic with beveled edges; minimum thickness of 1/16 inch; engraved text.
    - a. Exception: Provide minimum thickness of 1/8 inch when any dimension is greater than 4 inches.

4. Stainless Steel Nameplates: Minimum thickness of 1/32 inch; engraved or laser-etched text.
  5. Aluminum Nameplates: Anodized; minimum thickness of 1/32 inch; engraved or laser-etched text.
  6. Mounting Holes for Mechanical Fasteners: Two, centered on sides for sizes up to 1 inch high; Four, located at corners for larger sizes.
- B. Identification Labels:
1. Manufacturers:
    - a. Brady Corporation: [www.bradyid.com](http://www.bradyid.com).
    - b. Brother International Corporation: [www.brother-usa.com/#sle](http://www.brother-usa.com/#sle).
    - c. Panduit Corp: [www.panduit.com/#sle](http://www.panduit.com/#sle).
  2. Materials: Use self-adhesive laminated plastic labels; UV, chemical, water, heat, and abrasion resistant.
    - a. Use only for indoor locations.
  3. Text: Use factory pre-printed or machine-printed text. Do not use handwritten text unless otherwise indicated.
- C. Format for Equipment Identification:
1. Minimum Size: 1 inch by 2.5 inches.
  2. Legend:
    - a. System designation where applicable:
      - 1) Emergency Power System: Identify with text "EMERGENCY".
      - 2) Fire Alarm System: Identify with text "FIRE ALARM".
    - b. Equipment designation or other approved description.
    - c. Other information as indicated.
  3. Text: All capitalized unless otherwise indicated.
  4. Minimum Text Height:
    - a. System Designation: 1 inch.
    - b. Equipment Designation: 1/2 inch.
    - c. Other Information: 1/4 inch.
    - d. Exception: Provide minimum text height of 1 inch for equipment located more than 10 feet above floor or working platform.
  5. Color:
    - a. Normal Power System: White text on black background.
    - b. Emergency Power System: White text on red background.
    - c. Fire Alarm System: White text on red background.
- D. Format for General Information and Operating Instructions:
1. Minimum Size: 1 inch by 2.5 inches.
  2. Legend: Include information or instructions indicated or as required for proper and safe operation and maintenance.
  3. Text: All capitalized unless otherwise indicated.
  4. Minimum Text Height: 1/4 inch.
  5. Color: Black text on white background unless otherwise indicated.
    - a. Exceptions:
      - 1) Provide white text on red background for general information or operational instructions for fire alarm systems.
- E. Format for Receptacle Identification:
1. Minimum Size: 3/8 inch by 1.5 inches.
  2. Legend: Power source and circuit number or other designation indicated.
  3. Text: All capitalized unless otherwise indicated.
  4. Minimum Text Height: 3/16 inch.
  5. Color: Black text on clear background.

## 2.03 WIRE AND CABLE MARKERS

- A. Manufacturers:
1. Brady Corporation: [www.bradyid.com](http://www.bradyid.com).
  2. HellermannTyton: [www.hellermannntyton.com](http://www.hellermannntyton.com).
  3. Panduit Corp: [www.panduit.com](http://www.panduit.com).

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- B. Lighting and power wiring shall be color coded as indicated in Section 26 0519.
- C. Markers for Conductors and Cables: Use wrap-around self-adhesive vinyl cloth type markers suitable for the conductor or cable to be identified.
- D. Markers for Conductor and Cable Bundles: Use plastic marker tags secured by nylon cable ties.
- E. Legend: Power source and circuit number or other designation indicated.
- F. Text: Use factory pre-printed or machine-printed text, all capitalized unless otherwise indicated.
  - 1. Do not use handwritten text.
- G. Minimum Text Height: 1/8 inch.
- H. Color: Black text on white background unless otherwise indicated.

#### **2.04 VOLTAGE MARKERS**

- A. Manufacturers:
  - 1. Brady Corporation: [www.bradyid.com](http://www.bradyid.com).
  - 2. Brimar Industries, Inc: [www.brimar.com/#sle](http://www.brimar.com/#sle).
  - 3. Seton Identification Products: [www.seton.com](http://www.seton.com).
- B. Markers for Conduits: Use factory pre-printed self-adhesive vinyl cloth type markers.
- C. Markers for Boxes and Equipment Enclosures: Use factory pre-printed self-adhesive vinyl cloth type markers.
- D. Minimum Size:
  - 1. Markers for Equipment: 1 1/8 by 4 1/2 inches.
  - 2. Markers for Conduits: As recommended by manufacturer for conduit size to be identified.
  - 3. Markers for Pull Boxes: 1 1/8 by 4 1/2 inches.
  - 4. Markers for Junction Boxes: 1/2 by 2 1/4 inches.
- E. Legend:
  - 1. Markers for Voltage Identification: Highest voltage present.
  - 2. Markers for System Identification:
    - a. Other Systems: Type of service.
- F. Color: Black text on orange background unless otherwise indicated.

#### **2.05 UNDERGROUND WARNING TAPE**

- A. Manufacturers:
  - 1. Brady Corporation: [www.bradyid.com](http://www.bradyid.com).
  - 2. Brimar Industries, Inc: [www.brimar.com/#sle](http://www.brimar.com/#sle).
  - 3. Seton Identification Products: [www.seton.com](http://www.seton.com).
- B. Materials: Use foil-backed detectable type polyethylene tape suitable for direct burial, unless otherwise indicated.
- C. Foil-backed Detectable Type Tape: 3 inches wide, with minimum thickness of 5 mil, unless otherwise required for proper detection.
- D. Legend: Type of service, continuously repeated over full length of tape.
- E. Color:
  - 1. Tape for Buried Power Lines: Black text on red background.
  - 2. Tape for Buried Communication, Alarm, and Signal Lines: Black text on orange background.

#### **2.06 FLOOR MARKING TAPE**

- A. Manufacturers:
  - 1. Brady Corporation: [www.bradyid.com/#sle](http://www.bradyid.com/#sle).
  - 2. Brimar Industries, Inc: [www.brimar.com/#sle](http://www.brimar.com/#sle).
  - 3. Seton Identification Products: [www.seton.com/#sle](http://www.seton.com/#sle).

- B. Floor Marking Tape for Equipment Working Clearance Identification: Self-adhesive vinyl or polyester tape with overlamine, 3 inches wide, with alternating black and white stripes.

## **2.07 WARNING SIGNS AND LABELS**

- A. Manufacturers:
  - 1. Brimar Industries, Inc: [www.brimar.com/#sle](http://www.brimar.com/#sle).
  - 2. Clarion Safety Systems, LLC: [www.clarionsafety.com](http://www.clarionsafety.com).
  - 3. Seton Identification Products: [www.seton.com](http://www.seton.com).
- B. Comply with ANSI Z535.2 or ANSI Z535.4 as applicable.
- C. Warning Signs:
  - 1. Materials:
    - a. Indoor Dry, Clean Locations: Use factory pre-printed rigid plastic or self-adhesive vinyl signs.
    - b. Outdoor Locations: Use factory pre-printed rigid aluminum signs.
  - 2. Rigid Signs: Provide four mounting holes at corners for mechanical fasteners.
  - 3. Minimum Size: 7 by 10 inches unless otherwise indicated.
- D. Warning Labels:
  - 1. Materials: Use factory pre-printed or machine-printed self-adhesive polyester or self-adhesive vinyl labels; UV, chemical, water, heat, and abrasion resistant; produced using materials recognized to UL 969.
    - a. Do not use labels designed to be completed using handwritten text.
  - 2. Machine-Printed Labels: Use thermal transfer process printing machines and accessories recommended by label manufacturer.
  - 3. Minimum Size: 2 by 4 inches unless otherwise indicated.

## **PART 3 EXECUTION**

### **3.01 PREPARATION**

- A. Clean surfaces to receive adhesive products according to manufacturer's instructions.

### **3.02 INSTALLATION**

- A. Install products in accordance with manufacturer's instructions.
- B. Install identification products to be plainly visible for examination, adjustment, servicing, and maintenance. Unless otherwise indicated, locate products as follows:
  - 1. Surface-Mounted Equipment: Enclosure front.
  - 2. Flush-Mounted Equipment: Inside of equipment door.
  - 3. Free-Standing Equipment: Enclosure front; also enclosure rear for equipment with rear access.
  - 4. Elevated Equipment: Legible from the floor or working platform.
  - 5. Branch Devices: Adjacent to device.
  - 6. Interior Components: Legible from the point of access.
  - 7. Conduits: Legible from the floor.
  - 8. Boxes: Outside face of cover.
  - 9. Conductors and Cables: Legible from the point of access.
  - 10. Devices: Inside face of cover.
- C. Install identification products centered, level, and parallel with lines of item being identified.
- D. Secure nameplates to exterior surfaces of enclosures using stainless steel screws and to interior surfaces using self-adhesive backing or epoxy cement.
  - 1. Do not use adhesives on exterior surfaces
- E. Install self-adhesive labels and markers to achieve maximum adhesion, with no bubbles or wrinkles and edges properly sealed.
- F. Install underground warning tape above buried lines with one tape per trench at 12 inch(es) below finished grade.
- G. Secure rigid signs using stainless steel screws.

### **3.03 FIELD QUALITY CONTROL**

- A. See Section 01 4000 - Quality Requirements, for additional requirements.

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- B. Replace self-adhesive labels and markers that exhibit bubbles, wrinkles, curling or other signs of improper adhesion.

**END OF SECTION**

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**SECTION 26 0923  
LIGHTING CONTROL DEVICES**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Vacancy sensors.
- B. Outdoor motion sensors.
- C. Time switches.
- D. Outdoor photo controls.
- E. Accessories.

**1.02 REFERENCE STANDARDS**

- A. ANSI C136.24 - American National Standard for Roadway and Area Lighting Equipment - Nonlocking (Button) Type Photocontrols 2004 (R2010).
- B. NECA 1 - Standard for Good Workmanship in Electrical Construction 2015.
- C. NECA 130 - Standard for Installing and Maintaining Wiring Devices 2010.
- D. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum) 2018.
- E. NEMA 410 - Performance Testing for Lighting Controls and Switching Devices with Electronic Drivers and Discharge Ballasts 2016.
- F. NEMA ICS 2 - Industrial Control and Systems Controllers, Contactors and Overload Relays Rated 600 Volts 2000, with Errata (2008).
- G. NEMA ICS 5 - Industrial Control and Systems: Control Circuit and Pilot Devices 2017.
- H. NEMA ICS 6 - Industrial Control and Systems: Enclosures 1993 (Reaffirmed 2016).
- I. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- J. UL 917 - Clock-Operated Switches Current Edition, Including All Revisions.
- K. UL 60947-1 - Low-Voltage Switchgear and Controlgear - Part 1: General Rules Current Edition, Including All Revisions.

**1.03 ADMINISTRATIVE REQUIREMENTS**

- A. Coordination:
  - 1. Coordinate the placement of lighting control devices with millwork, furniture, equipment, etc. installed under other sections or by others.
  - 2. Coordinate the placement of wall switch occupancy sensors with actual installed door swings.
  - 3. Coordinate the placement of occupancy sensors with millwork, furniture, equipment or other potential obstructions to motion detection coverage installed under other sections or by others.
  - 4. Notify Architect of any conflicts or deviations from the contract documents to obtain direction prior to proceeding with work.
- B. Sequencing:
  - 1. Do not install lighting control devices until final surface finishes and painting are complete.

**1.04 SUBMITTALS**

- A. See Section 01 3000 - Administrative Requirements, for submittal procedures.
- B. See Section 01 3300-Administrative Requirements, for submittal procedures.
- C. Field Quality Control Reports.
- D. Manufacturer's Installation Instructions: Include application conditions and limitations of use stipulated by product testing agency. Include instructions for storage, handling, protection, examination, preparation, and installation of product.
- E. Operation and Maintenance Data: Include detailed information on device programming and setup.
- F. 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 Locking Receptacle-Mounted Outdoor Photo Controls: Five percent of total quantity installed for each type, but not less than two of each type.
- G. Project Record Documents: Record actual installed locations and settings for lighting control devices.

#### **1.05 QUALITY ASSURANCE**

- A. Conform to requirements of NFPA 70.
- B. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

#### **1.06 DELIVERY, STORAGE, AND PROTECTION**

- A. Store products in a clean, dry space in original manufacturer's packaging in accordance with manufacturer's written instructions until ready for installation.

#### **1.07 FIELD CONDITIONS**

- A. Maintain field conditions within manufacturer's required service conditions during and after installation.

#### **1.08 WARRANTY**

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.

### **PART 2 PRODUCTS**

#### **2.01 LIGHTING CONTROL DEVICES - GENERAL REQUIREMENTS**

- A. Provide products listed, classified, and labeled as suitable for the purpose intended.
- B. Unless specifically indicated to be excluded, provide all required conduit, wiring, connectors, hardware, components, accessories, etc. as required for a complete operating system.
- C. Products for Switching of Electronic Ballasts/Drivers: Tested and rated to be suitable for peak inrush currents specified in NEMA 410.

#### **2.02 OUTDOOR MOTION SENSORS**

- A. Manufacturers:
  1. Hubbell Lighting, Inc: [www.hubbellighting.com/#sle](http://www.hubbellighting.com/#sle).
  2. Lithonia Lighting: [www.lithonia.com/#sle](http://www.lithonia.com/#sle).
  3. WattStopper: [www.wattstopper.com/#sle](http://www.wattstopper.com/#sle).
  4. Source Limitations: Furnish products produced by a single manufacturer and obtained from a single supplier.
- B. Description: Factory-assembled wet location listed device suitable for wall or ceiling/eave mounting, with integral swivel for field adjustment of coverage, capable of detecting motion for automatic control of load indicated.
- C. Sensor Technology: Passive Infrared (PIR) designed to detect occupancy by sensing movement of thermal energy between zones.
- D. Operation: Unless otherwise indicated, motion sensor to turn load on when motion is detected and to turn load off when no motion is detected during an adjustable turn-off delay time interval.
- E. Turn-Off Delay: Field adjustable, with time delay settings available up to 15 minutes.
- F. Integral Photocell: For dusk to dawn operation.
- G. Manual Override: Activated by switching power off to unit and then back on.
- H. Load Rating: 1,000 W incandescent and fluorescent load at 120 V ac.
- I. Coverage: Capable of detecting motion within a distance of 50 feet at a mounting height of 8 feet, with a field of view of 270 degrees.
- J. Finish: Color to be selected.

#### **2.03 TIME SWITCHES**

- A. Manufacturers:

1. Intermatic, Inc: [www.intermatic.com/#sle](http://www.intermatic.com/#sle).
  2. Paragon, a brand of Invensys Controls: [www.invensyscontrols.com](http://www.invensyscontrols.com).
  3. Tork, a division of NSI Industries LLC: [www.tork.com/#sle](http://www.tork.com/#sle).
  4. Source Limitations: Furnish products produced by a single manufacturer and obtained from a single supplier.
- B. Electromechanical Time Switches:
1. Description: Factory-assembled controller with motor-operated timing dial mechanism and adjustable trippers for setting on/off operations, listed and labeled as complying with UL 917.
  2. Program Capability:
    - a. 7-Day Time Switches: Capable of different schedule for each day of the week.
    - b. Astronomic Time Switches: With same schedule for each day of the week and skip-a-day feature to omit selected days with automatic adjustment for seasonal changes in sunrise and sunset times.
  3. Schedule Capacity:
    - a. 24-Hour Time Switches: Accommodating not less than 12 pairs of selected on/off operations per day.
  4. Provide spring reserve backup to maintain clock during power outage.
  5. Manual override: Capable of overriding current schedule both permanently and temporarily until next scheduled event.
  6. Input Supply Voltage: As indicated on the drawings.
  7. Output Switch Configuration: As required to control the load indicated on drawings.
  8. Provide lockable enclosure; environmental type per NEMA 250 as specified for the following installation locations:
    - a. Indoor clean, dry locations: Type 1.

## **2.04 OUTDOOR PHOTO CONTROLS**

- A. Manufacturers:
1. Intermatic, Inc: [www.intermatic.com/#sle](http://www.intermatic.com/#sle).
  2. Paragon, a brand of Invensys Controls: [www.invensyscontrols.com](http://www.invensyscontrols.com).
  3. Tork, a division of NSI Industries LLC: [www.tork.com/#sle](http://www.tork.com/#sle).
  4. Source Limitations: Furnish products produced by a single manufacturer and obtained from a single supplier.
- B. Button Type Outdoor Photo Controls
1. Description: Direct-wired photo control unit complying with ANSI C136.24 with weatherproof gasketed wall plate where required or indicated, listed and labeled as complying with UL 773A.
  2. Housing: Weather resistant polycarbonate.
  3. Photo Sensor: Cadmium sulfide.
  4. Light Level Activation: 1 to 3 footcandles turn-on and 3 to 1 turn-off to turn-on ratio with delayed turn-off.
  5. Voltage: As required to control the load indicated on the drawings.
  6. Failure Mode: Fails to the on position.
  7. Load Rating: As required to control the load indicated on the drawings.

## **2.05 LIGHTING CONTACTORS**

- A. Manufacturers:
1. ABB/GE: [www.geindustrial.com/#sle](http://www.geindustrial.com/#sle).
  2. Eaton Corporation: [www.eaton.com/#sle](http://www.eaton.com/#sle).
  3. Rockwell Automation Inc; Allen-Bradley Products; : [ab.rockwellautomation.com/#sle](http://ab.rockwellautomation.com/#sle).
  4. Schneider Electric; Square D Products: [www.schneider-electric.us/#sle](http://www.schneider-electric.us/#sle).
  5. Siemens Industry, Inc; : [www.usa.siemens.com/#sle](http://www.usa.siemens.com/#sle).
- B. Description: Magnetic lighting contactors complying with NEMA ICS 2, and listed and labeled as complying with UL 60947-1 and UL 60947-4-1; noncombination type unless otherwise indicated; ratings, configurations and features as indicated on the drawings.
- C. Combination Contactors: NEMA ICS 2, Class A combination controllers with magnetic contactor(s) and externally operable disconnect.
1. Disconnects: Circuit breaker type.

- a. Disconnect Switches: Fusible type unless otherwise indicated.
  - b. Provide externally operable handle with means for locking in the OFF position. Provide safety interlock to prevent opening the cover with the disconnect in the ON position with capability of overriding interlock for testing purposes.
  - c. Provide auxiliary interlock for disconnection of external control power sources where applicable.
- D. Short Circuit Current Rating:
  - 1. Provide contactors with listed short circuit current rating not less than the available fault current at the installed location as indicated on the drawings.
- E. Enclosures:
  - 1. Comply with NEMA ICS 6.
  - 2. Environment Type per NEMA 250: Unless otherwise indicated, as specified for the following installation locations:
    - a. Indoor Clean, Dry Locations: Type 1 or Type 12.
    - b. Outdoor Locations: Type 3R or Type 4.
  - 3. Finish: Manufacturer's standard unless otherwise indicated.

## **2.06 ACCESSORIES**

- A. Auxiliary Contacts:
  - 1. Comply with NEMA ICS 5.
  - 2. Provide number and type of contacts indicated or required to perform necessary functions, including holding (seal-in) circuit and interlocking, plus one normally open (NO) and one normally closed (NC) spare contact for each lighting contactor, minimum.
- B. Control and Timing Relays:
  - 1. Comply with NEMA ICS 5.
  - 2. Provide number and type of relays indicated or required to perform necessary functions.
  - 3. Timing Relays: Electronic or pneumatic as indicated.
    - a. Adjustable Timing Range: As indicated on drawings.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that field measurements are as shown on the drawings.
- B. Verify that outlet boxes are installed in proper locations and at proper mounting heights and are properly sized to accommodate devices and conductors in accordance with NFPA 70.
- C. Verify that openings for outlet boxes are neatly cut and will be completely covered by devices or wall plates.
- D. Verify that final surface finishes are complete, including painting.
- E. Verify that branch circuit wiring installation is completed, tested, and ready for connection to lighting control devices.
- F. Verify that the service voltage and ratings of lighting control devices are appropriate for the service voltage and load requirements at the location to be installed.
- G. Verify that conditions are satisfactory for installation prior to starting work.

### **3.02 PREPARATION**

- A. Provide extension rings to bring outlet boxes flush with finished surface.
- B. Clean dirt, debris, plaster, and other foreign materials from outlet boxes.

### **3.03 INSTALLATION**

- A. Perform work in a neat and workmanlike manner in accordance with NECA 1 and, where applicable, NECA 130, including mounting heights specified in those standards unless otherwise indicated.
- B. Install lighting control relays furnished under Section 25 3626
- C. Coordinate locations of outlet boxes provided under Section 26 0533.16 as required for installation of lighting control devices provided under this section.
  - 1. Mounting Heights: Unless otherwise indicated, as follows:



- a. Wall Switch Occupancy Sensors: 48 inches above finished floor.
- 2. Orient outlet boxes for vertical installation of lighting control devices unless otherwise indicated.
- D. Install lighting control devices in accordance with manufacturer's instructions.
- E. Unless otherwise indicated, connect lighting control device grounding terminal or conductor to branch circuit equipment grounding conductor and to outlet box with bonding jumper.
- F. Install lighting control devices plumb and level, and held securely in place.
- G. Where required and not furnished with lighting control device, provide wall plate in accordance with Section 26 2726.
- H. Provide required supports in accordance with Section 26 0529.
- I. Where applicable, install lighting control devices and associated wall plates to fit completely flush to mounting surface with no gaps and rough opening completely covered without strain on wall plate. Repair or reinstall improperly installed outlet boxes or improperly sized rough openings. Do not use oversized wall plates in lieu of meeting this requirement.
- J. Identify lighting control devices in accordance with Section 26 0553.
- K. Outdoor Photo Control Locations:
  - 1. Where possible, locate outdoor photo controls with photo sensor facing north. If north facing photo sensor is not possible, install with photo sensor facing east, west, or down.
  - 2. Locate outdoor photo controls so that photo sensors do not face artificial light sources, including light sources controlled by the photo control itself.
- L. Install outdoor photo controls so that connections are weatherproof. Do not install photo controls with conduit stem facing up in order to prevent infiltration of water into the photo control.
- M. Unless otherwise indicated, install power packs for lighting control devices above accessible ceiling or above access panel in inaccessible ceiling near the sensor location.
- N. Where indicated, install separate compatible wall switches for manual control interface with lighting control devices or associated power packs.
- O. Unless otherwise indicated, install switches on load side of power packs so that switch does not turn off power pack.
- P. Where indicated or required, provide cabinet or enclosure in accordance with Section 26 0533.16 for mounting of lighting control device system components.

### **3.04 FIELD QUALITY CONTROL**

- A. See Section 01 4000 - Quality Requirements, for additional requirements.
- B. Inspect each lighting control device for damage and defects.
- C. Test outdoor photo controls to verify proper operation, including time delays where applicable.
- D. Correct wiring deficiencies and replace damaged or defective lighting control devices.

### **3.05 ADJUSTING**

- A. Adjust devices and wall plates to be flush and level.
- B. Adjust occupancy sensor settings to minimize undesired activations while optimizing energy savings, and to achieve desired function as indicated or as directed by Architect.
- C. Adjust position of outdoor motion sensors to achieve optimal coverage as required.
- D. Adjust time switch settings to achieve desired operation schedule as indicated or as directed by Architect. Record settings in written report to be included with submittals.
- E. Adjust external sliding shields on outdoor photo controls under optimum lighting conditions to achieve desired turn-on and turn-off activation as indicated or as directed by Architect.

### **3.06 CLEANING**

- A. Clean exposed surfaces to remove dirt, paint, or other foreign material and restore to match original factory finish.

### **3.07 COMMISSIONING**

- A. See Section 01 9113 - General Commissioning Requirements for commissioning requirements.

### **3.08 CLOSEOUT ACTIVITIES**

- A. See Section 01 7800 - Closeout Submittals, for closeout submittals.
- B. See Section 01 7900 - Demonstration and Training, for additional requirements.
- C. Demonstration: Demonstrate proper operation of lighting control devices to Architect, and correct deficiencies or make adjustments as directed.
- D. Training: Train Owner's personnel on operation, adjustment, programming, and maintenance of lighting control devices.
  - 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. Instructor: Qualified contractor familiar with the project and with sufficient knowledge of the installed lighting control devices.
  - 4. Location: At project site.

**END OF SECTION**

## **SECTION 26 2717 EQUIPMENT WIRING**

### **PART 1 GENERAL**

#### **1.01 SECTION INCLUDES**

- A. Electrical connections to equipment.

#### **1.02 RELATED REQUIREMENTS**

- A. Section 26 0519 - Low-Voltage Electrical Power Conductors and Cables.
- B. Section 26 0533.13 - Conduit for Electrical Systems.
- C. Section 26 0533.16 - Boxes for Electrical Systems.
- D. Section 26 2726 - Wiring Devices.
- E. Section 26 2816.16 - Enclosed Switches.
- F. Section 26 2913 - Enclosed Controllers.

#### **1.03 REFERENCE STANDARDS**

- A. NEMA WD 1 - General Color Requirements for Wiring Devices 1999 (Reaffirmed 2015).
- B. NEMA WD 6 - Wiring Devices - Dimensional Specifications 2016.
- C. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

#### **1.04 ADMINISTRATIVE REQUIREMENTS**

- A. Coordination:
  - 1. Obtain and review shop drawings, product data, manufacturer's wiring diagrams, and manufacturer's instructions for equipment furnished under other sections.
  - 2. Determine connection locations and requirements.
- B. Sequencing:
  - 1. Install rough-in of electrical connections before installation of equipment is required.
  - 2. Make electrical connections before required start-up of equipment.

#### **1.05 SUBMITTALS**

- A. See Section 01 3300 - Submittal Procedures, for submittal process.
- B. Product Data: Provide wiring device manufacturer's catalog information showing dimensions, configurations, and construction.

#### **1.06 QUALITY ASSURANCE**

- A. Conform to requirements of NFPA 70.
- B. Products: Listed, classified, and labeled as suitable for the purpose intended.
- C. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

### **PART 2 PRODUCTS**

#### **2.01 MATERIALS**

- A. Cords and Caps: NEMA WD 6; match receptacle configuration at outlet provided for equipment.
  - 1. Colors: Comply with NEMA WD 1.
  - 2. Cord Construction: NFPA 70, Type SJO, multiconductor flexible cord with identified equipment grounding conductor, suitable for use in damp locations.
  - 3. Size: Suitable for connected load of equipment, length of cord, and rating of branch circuit overcurrent protection.
- B. Disconnect Switches: As specified in Section 26 2816.16 and in individual equipment sections.
- C. Wiring Devices: As specified in Section 26 2726.
- D. Flexible Conduit: As specified in Section 26 0518.
- E. Wire and Cable: As specified in Section 26 0518.

- F. Boxes: As specified in Section 26 0533.16.

## **2.02 EQUIPMENT CONNECTIONS**

- A. Refer to Equipment Connection Schedule in Contract Documents:

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that equipment is ready for electrical connection, wiring, and energization.

### **3.02 ELECTRICAL CONNECTIONS**

- A. Make electrical connections in accordance with equipment manufacturer's instructions.
- B. Make conduit connections to equipment using flexible conduit. Use liquidtight flexible conduit with watertight connectors in damp or wet locations. Limit length of flexible raceway to 60" max.
- C. Connect heat producing equipment using wire and cable with insulation suitable for temperatures encountered.
- D. Provide receptacle outlet to accommodate connection with attachment plug.
- E. Provide cord and cap where field-supplied attachment plug is required.
- F. Install suitable strain-relief clamps and fittings for cord connections at outlet boxes and equipment connection boxes.
- G. Install disconnect switches, controllers, control stations, and control devices to complete equipment wiring requirements.
- H. Install terminal block jumpers to complete equipment wiring requirements.
- I. Install interconnecting conduit and wiring between devices and equipment to complete equipment wiring requirements.
- J. Coolers and Freezers: Cut and seal conduit openings in freezer and cooler walls, floor, and ceilings.

**END OF SECTION**

**SECTION 26 2726  
WIRING DEVICES**

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**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Wall switches.
- B. Wall dimmers.
- C. Receptacles.
- D. Wall plates.
- E. Floor box service fittings.

**1.03 REFERENCE STANDARDS**

- F. FS W-C-596 - Connector, Electrical, Power, General Specification for 2017h.
- G. FS W-S-896 - Switches, Toggle (Toggle and Lock), Flush-mounted (General Specification) 2017g.
- H. NECA 1 - Standard for Good Workmanship in Electrical Construction 2015.
- I. NECA 130 - Standard for Installing and Maintaining Wiring Devices 2010.
- J. NEMA WD 1 - General Color Requirements for Wiring Devices 1999 (Reaffirmed 2015).
- K. NEMA WD 6 - Wiring Devices - Dimensional Specifications 2016.
- L. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

**1.04 ADMINISTRATIVE REQUIREMENTS**

- M. Coordination:
  - 1. Coordinate the placement of outlet boxes with millwork, furniture, equipment, etc. installed under other sections or by others.
  - 2. Coordinate wiring device ratings and configurations with the electrical requirements of actual equipment to be installed.
  - 3. Coordinate the placement of outlet boxes for wall switches with actual installed door swings.
  - 4. Coordinate the installation and preparation of uneven surfaces, such as split face block, to provide suitable surface for installation of wiring devices.
  - 5. Notify Architect of any conflicts or deviations from the contract documents to obtain direction prior to proceeding with work.
- N. Sequencing:
  - 1. Do not install wiring devices until final surface finishes and painting are complete.

**1.05 SUBMITTALS**

- O. See Section 01 3300-Administrative Requirements, for submittal procedures.
- P. Product Data: Provide manufacturer's catalog information showing dimensions, colors, and configurations.
- Q. Manufacturer's Installation Instructions: Indicate application conditions and limitations of use stipulated by product testing agency. Include instructions for storage, handling, protection, examination, preparation, and installation of product.
- R. Operation and Maintenance Data:
  - 1. Wall Dimmers: Include information on operation and setting of presets.
  - 2. GFCI Receptacles: Include information on status indicators and testing procedures and intervals.
  - 3. Surge Protection Receptacles: Include information on status indicators.
- S. Project Record Documents: Record actual installed locations of wiring devices.
- T. 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 Keys for Locking Switches: five of each type.
3. Extra Wall Plates: Ten of each style, size, and finish.
4. Extra Flush Floor Service Fittings: Two of each type.

#### **1.06 QUALITY ASSURANCE**

- U. Conform to requirements of NFPA 70.
- V. Products: Listed, classified, and labeled as suitable for the purpose intended.

#### **1.07 DELIVERY, STORAGE, AND PROTECTION**

- W. Store in a clean, dry space in original manufacturer's packaging until ready for installation.

### **PART 2 PRODUCTS**

#### **2.01 MANUFACTURERS**

- A. Hubbell Incorporated: [www.hubbell-wiring.com](http://www.hubbell-wiring.com).
- B. Leviton Manufacturing Company, Inc: [www.leviton.com](http://www.leviton.com).
- C. Pass & Seymour, a brand of Legrand North America, Inc: [www.legrand.us](http://www.legrand.us)
- D. Source Limitations: Where possible, provide products for each type of wiring device produced by a single manufacturer and obtained from a single supplier.
- E. Source Limitations: Where wall controls are furnished as part of lighting control system, provide accessory matching receptacles and wallplates by the same manufacturer in locations indicated.

#### **2.02 WIRING DEVICE APPLICATIONS**

- F. Provide wiring devices suitable for intended use and with ratings adequate for load served.
- G. For single receptacles installed on an individual branch circuit, provide receptacle with ampere rating not less than that of the branch circuit.
- H. Provide weather resistant GFCI receptacles with specified weatherproof covers for receptacles installed outdoors or in damp or wet locations.
- I. Provide GFCI protection for receptacles installed within 6 feet of sinks.
- J. Provide GFCI protection for receptacles serving electric drinking fountains.
- K. Unless noted otherwise, do not use combination switch/receptacle devices.

#### **2.03 WIRING DEVICE FINISHES**

- L. Provide wiring device finishes as described below unless indicated otherwise.
- M. Wiring Devices Installed in Unfinished Spaces: Gray with stainless steel wall plate.
- N. Wiring Devices Installed in Wet or Damp Locations: Gray with specified weatherproof cover.

### **4.02 WALL SWITCHES**

- A. Manufacturers:
  1. Hubbell Incorporated: [www.hubbell-wiring.com](http://www.hubbell-wiring.com).
  2. Leviton Manufacturing Company, Inc: [www.leviton.com](http://www.leviton.com).
  3. Pass & Seymour, a brand of Legrand North America, Inc: [www.legrand.us](http://www.legrand.us)
- B. Wall Switches - General Requirements: AC only, quiet operating, general-use snap switches with silver alloy contacts, complying with NEMA WD 1 and NEMA WD 6, and listed as complying with UL 20 and where applicable FS W-S-896; types as indicated on the drawings.
  1. Wiring Provisions: Terminal screws for side wiring with separate ground terminal screw.
- C. Standard Wall Switches: Commercial specification grade, 20 A, 120/277 V with standard toggle type switch actuator and maintained contacts; single pole single throw, double pole single throw, three way, or four way as indicated on the drawings.

### **4.03 WALL PLATES**

- A. Manufacturers:
  1. Hubbell Incorporated: [www.hubbell-wiring.com](http://www.hubbell-wiring.com).
  2. Leviton Manufacturing Company, Inc: [www.leviton.com](http://www.leviton.com).

3. Lutron Electronics Company, Inc: [www.lutron.com](http://www.lutron.com).
  4. Pass & Seymour, a brand of Legrand North America, Inc: [www.legrand.us](http://www.legrand.us)
- B. Wall Plates: Comply with UL 514D.
    1. Configuration: One piece cover as required for quantity and types of corresponding wiring devices.
    2. Size: Standard.
    3. Screws: Metal with slotted heads finished to match wall plate finish.
  - C. Nylon Wall Plates: Smooth finish, high-impact thermoplastic.
  - D. Stainless Steel Wall Plates: Brushed satin finish, Type 302 stainless steel.
  - E. Galvanized Steel Wall Plates: Rounded corners and edges, with corrosion resistant screws.
  - F. Weatherproof Covers for Damp Locations: Gasketed, cast aluminum, with self-closing hinged cover and corrosion-resistant screws; listed as suitable for use in wet locations with cover closed.
  - G. Weatherproof Covers for Wet Locations: Gasketed, cast aluminum, with hinged lockable cover and corrosion-resistant screws; listed as suitable for use in wet locations while in use with attachment plugs connected and identified as extra-duty type.

## **PART 3 EXECUTION**

### **5.01 EXAMINATION**

- A. Verify that field measurements are as indicated.
- B. Verify that outlet boxes are installed in proper locations and at proper mounting heights and are properly sized to accommodate devices and conductors in accordance with NFPA 70.
- C. Verify that wall openings are neatly cut and will be completely covered by wall plates.
- D. Verify that final surface finishes are complete, including painting.
- E. Verify that branch circuit wiring installation is completed, tested, and ready for connection to wiring devices.
- F. Verify that conditions are satisfactory for installation prior to starting work.

### **5.02 PREPARATION**

- A. Provide extension rings to bring outlet boxes flush with finished surface.
- B. Clean dirt, debris, plaster, and other foreign materials from outlet boxes.

### **5.03 INSTALLATION**

- A. Perform work in a neat and workmanlike manner in accordance with NECA 1 and, where applicable, NECA 130, including mounting heights specified in those standards unless otherwise indicated.
- B. Coordinate locations of outlet boxes provided under Section 26 0533.16 as required for installation of wiring devices provided under this section.
  1. Orient outlet boxes for vertical installation of wiring devices unless otherwise indicated.
  2. Where multiple receptacles or wall switches are installed at the same location and at the same mounting height, gang devices together under a common wall plate.
  3. Locate wall switches on strike side of door with edge of wall plate 3 inches from edge of door frame. Where locations are indicated otherwise, notify Architect to obtain direction prior to proceeding with work.
  4. Locate receptacles for electric drinking fountains concealed behind drinking fountain according to manufacturer's instructions.
- C. Install wiring devices in accordance with manufacturer's instructions.
- D. Where required, connect wiring devices using pigtails not less than 6 inches long. Do not connect more than one conductor to wiring device terminals.
- E. Connect wiring devices by wrapping conductor clockwise 3/4 turn around screw terminal and tightening to proper torque specified by the manufacturer. Where present, do not use push-in pressure terminals that do not rely on screw-actuated binding.
- F. Unless otherwise indicated, connect wiring device grounding terminal to branch circuit equipment grounding conductor and to outlet box with bonding jumper.

- G. Unless otherwise indicated, GFCI receptacles may be connected to provide feed-through protection to downstream devices. Label such devices to indicate they are protected by upstream GFCI protection.
- H. Install wiring devices plumb and level with mounting yoke held rigidly in place.
- I. Install wall switches with OFF position down.
- J. Do not share neutral conductor on branch circuits utilizing wall dimmers.
- K. Install vertically mounted receptacles with grounding pole on top and horizontally mounted receptacles with grounding pole on right.
- L. Install wall plates to fit completely flush to wall with no gaps and rough opening completely covered without strain on wall plate. Repair or reinstall improperly installed outlet boxes or improperly sized rough openings. Do not use oversized wall plates in lieu of meeting this requirement.
- M. Install blank wall plates on junction boxes and on outlet boxes with no wiring devices installed or designated for future use.
- N. Identify wiring devices in accordance with Section 26 0553.

#### **5.04 FIELD QUALITY CONTROL**

- A. See Section 01 4000 - Quality Requirements, for additional requirements.
- B. Inspect each wiring device for damage and defects.
- C. Operate each wall dimmer with circuit energized to verify proper operation.
- D. Test each receptacle to verify operation and proper polarity.
- E. Test each GFCI receptacle for proper tripping operation according to manufacturer's instructions.
- F. Inspect each surge protection receptacle to verify surge protection is active.
- G. Tests for Convenience Receptacles:
  - 1. Line Voltage: Acceptable range is 105 to 132 V.
  - 2. Percent Voltage Drop under 15-A Load: A value of 6 percent or higher is not acceptable.
  - 3. Ground Impedance: Values of up to 2 ohms are acceptable.
  - 4. GFCI Trip: Test for tripping values specified in UL 1436 and UL 943.
  - 5. Using the test plug, verify that the device and its outlet box are securely mounted.
  - 6. The tests shall be diagnostic, indicating damaged conductors, high resistance at the circuit breaker, poor connections, inadequate fault current path, defective devices, or similar problems. Correct circuit conditions, remove malfunctioning units and replace with new ones, and retest as specified above.
- H. Correct wiring deficiencies and replace damaged or defective wiring devices.

#### **5.05 ADJUSTING**

- A. Adjust devices and wall plates to be flush and level.
- B. Adjust presets for wall dimmers according to manufacturer's instructions as directed by Architect.

#### **5.06 CLEANING**

- A. Clean exposed surfaces to remove dirt, paint, or other foreign material and restore to match original factory finish.

### **END OF SECTION**



## **SECTION 26 5100 INTERIOR LIGHTING**

### **PART 1 GENERAL**

#### **1.01 SECTION INCLUDES**

- A. Interior luminaires.
- B. LED drivers.
- C. Luminaire accessories.

#### **1.02 REFERENCE STANDARDS**

- A. 47 CFR 15 - Radio Frequency Devices current edition.
- B. ANSI C82.11 - American National Standard for Lamp Ballasts - High Frequency Fluorescent Lamp Ballasts - Supplements 2017.
- C. IEEE C62.41.2 - IEEE Recommended Practice on Characterization of Surges in Low-Voltage (1000 V and less) AC Power Circuits 2002 (Corrigendum 2012).
- D. IESNA LM-63 - ANSI Approved Standard File Format for Electronic Transfer of Photometric Data and Related Information 2002 (Reaffirmed 2008).
- E. IES LM-79 - Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products; Illuminating Engineering Society; 2008.
- F. IES LM-80 - Approved Method: Measuring Luminous Flux and Color Maintenance of LED Packages, Arrays, and Modules 2015, with Errata (2017).
- G. NECA 1 - Standard for Good Workmanship in Electrical Construction 2015.
- H. NECA/IESNA 500 - Standard for Installing Indoor Commercial Lighting Systems 2006.
- I. NECA/IESNA 502 - Standard for Installing Industrial Lighting Systems 2006.
- J. NEMA LE 4 - Recessed Luminaires, Ceiling Compatibility 2012.
- K. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- L. UL 1598 - Luminaires Current Edition, Including All Revisions.
- M. UL 8750 - Light Emitting Diode (LED) Equipment for Use in Lighting Products Current Edition, Including All Revisions.

#### **1.03 ADMINISTRATIVE REQUIREMENTS**

- A. Coordination:
  - 1. Coordinate the installation of luminaires with mounting surfaces installed under other sections or by others. Coordinate the work with placement of supports, anchors, etc. required for mounting. Coordinate compatibility of luminaires and associated trims with mounting surfaces at installed locations.
  - 2. Coordinate the placement of luminaires with structural members, ductwork, piping, equipment, diffusers, fire suppression system components, and other potential conflicts installed under other sections or by others.
  - 3. Coordinate the placement of exit signs with furniture, equipment, signage or other potential obstructions to visibility installed under other sections or by others.
  - 4. Notify Architect of any conflicts or deviations from the contract documents to obtain direction prior to proceeding with work.

#### **1.04 SUBMITTALS**

- A. See Section 01 3300 - Submittal Procedures, for submittal process.
- B. Product Data: Provide manufacturer's standard catalog pages and data sheets including detailed information on luminaire construction, dimensions, ratings, finishes, mounting requirements, listings, service conditions, photometric performance, installed accessories, and ceiling compatibility; include model number nomenclature clearly marked with all proposed features.
  - 1. LED Luminaires:
    - a. Include estimated useful life, calculated based on IES LM-80 test data.
    - b. Include IES LM-79 test report upon request.

2. Provide electronic files of photometric data certified by a National Voluntary Laboratory Accreditation Program (NVLAP) lab or independent testing agency in IESNA LM-63 standard format upon request.
- C. Manufacturer's Installation Instructions: Indicate application conditions and limitations of use stipulated by product testing agency. Include instructions for storage, handling, protection, examination, preparation, and installation of product.
- 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 fixtures: Provide three complete, ready to use, fixtures of each type used.
  3. Extra LED Drivers: Two percent of total quantity installed for each type, but not less than one of each type.
- E. Project Record Documents: Record actual connections and locations of luminaires and any associated remote components.

#### **1.05 QUALITY ASSURANCE**

- A. Conform to requirements of NFPA 70.
- B. Maintain at the project site a copy of each referenced document that prescribes execution requirements.
- C. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.

#### **1.06 DELIVERY, STORAGE, AND PROTECTION**

- A. Receive, handle, and store products according to NECA/IESNA 500 (commercial lighting), NECA/IESNA 502 (industrial lighting), and manufacturer's written instructions.
- B. Keep products in original manufacturer's packaging and protect from damage until ready for installation.

#### **1.07 FIELD CONDITIONS**

- A. Maintain field conditions within manufacturer's required service conditions during and after installation.

#### **1.08 WARRANTY**

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.
- B. Provide five year manufacturer warranty for all LED luminaires, including drivers. Warranty shall warrant performance, lifetime and color consistency of the luminaire.

### **PART 2 PRODUCTS**

#### **2.01 LUMINAIRE TYPES**

- A. Furnish products along with components as indicated in luminaire schedule included on the drawings.
- B. Substitutions: See Section 01 6000 - Product Requirements except where individual luminaire types are designated with substitutions not permitted.

#### **2.02 LUMINAIRES**

- A. Provide products that comply with requirements of NFPA 70.
- B. Provide products that are listed and labeled as complying with UL 1598, where applicable.
- C. Provide products listed, classified, and labeled as suitable for the purpose intended.
- D. Unless otherwise indicated, provide complete luminaires including lamp(s) and all sockets, ballasts, reflectors, lenses, housings and other components required to position, energize and protect the lamp and distribute the light.
- E. Unless specifically indicated to be excluded, provide all required conduit, boxes, wiring, connectors, hardware, supports, trims, accessories, etc. as necessary for a complete operating system.
- F. Provide products suitable to withstand normal handling, installation, and service without any damage, distortion, corrosion, fading, discoloring, etc.
- G. LED Luminaires:
  1. Components: UL 8750 recognized or listed as applicable.

2. Tested in accordance with IES LM-79 and IES LM-80.
3. Light source should be tested at a minimum case temperature of 70 degrees C.
4. LED Estimated Useful Life: Minimum of 50,000 hours at 70 percent lumen maintenance, calculated based on IES LM-80 test data. The module shall not exceed a temperature specified by OEM manufacturer in order to maintain 50,000 hours of life.
5. Modules shall conform to the lamp standard, IEC62471 'Photobiological Safety of Lamps and Lamp Systems'.
6. Provide "future-proof" modules (module dimensions remain constant) with fixed dimension formats and fixed optical interfaces.
7. Fixture shall have a negative temperature coefficient (NTC) which regulates the light output down if certain critical temperature points have been exceeded.
8. Provide fixtures with Fortimo LED systems portfolio utilizing LED Module and Driver.
9. Module must adhere to Zhaga compliant certified light engine, where applicable.
10. Minimum CRI shall be 80.
11. Correlated Color Temperature shall be within +/-245K of stated value. A range of commonly used CCT's (2,700K, 3,000K, 3,500K, 4,000K) shall be available to ensure that a wide variety of lighting needs can be met.
12. Provide 100% of units within 4 standard deviation color matching (SDCM).
13. Units shall be dimmable and feature 100% light run control interface that allows the same light source to be used on a 0-10V, phase cut, step dim, DALI, DMX/RDM network.
14. The module shall have a Tc point to measure application temperature.

### 2.03 DRIVERS

- A. Manufacturers:
  1. Philips Lighting Electronics/Advance: [www.advance.philips.com](http://www.advance.philips.com).
  2. Lutron Electronics Company, Inc; [www.lutron.com/#sle](http://www.lutron.com/#sle).
  3. Osram Sylvania: [www.sylvania.com/#sle](http://www.sylvania.com/#sle).
  4. Philips Lighting Electronics/Advance: [www.advance.philips.com](http://www.advance.philips.com).
  5. Substitutions: See Section 01 6000 - Product Requirements.
  6. Manufacturer Limitations: Where possible, for each type of luminaire provide ballasts produced by a single manufacturer.
  7. Ballast shall be manufactured in a factory certified to ISO 9002 Quality System Standards.
  8. Manufacturer shall have a 20 year history of producing electronic ballasts for the North American market.
- B. Dimmable LED Drivers:
  1. Regulatory Requirements:
    - a. Driver shall not contain any Polychlorinated Biphenyl (PCB).
    - b. Underwriters Laboratories (UL) recognized for Dry and Damp location and Canadian Standards Association (CSA) certified where applicable.
    - c. Compliant to UL 1310, First Edition, revised dated November 1, 2011.
    - d. Comply with ANSI C62.41 Category A for transient protection.
    - e. Comply with ANSI C82.11 where applicable.
    - f. Comply with the requirements of the Federal Communications Commission (FCC) rules and regulations, Title 47 CFR part 18, Non-Consumer (Class A) EMI/RFI (conducted and radiated) and Class B for residential use.
    - g. Driver shall comply with NEMA 410 for in-rush current limits.
    - h. Driver shall meet the RoHS Directive 2002/95EC on the restriction of hazardous substances such as lead, cadmium, mercury, hexavalent chromium, PBB's and PBDE's.

### 2.04 ACCESSORIES

- A. Stems for Suspended Luminaires: Steel tubing, minimum 1/2" size, factory finished to match luminaire or field-painted as directed.
- B. Threaded Rods for Suspended Luminaires: Zinc-plated steel, minimum 1/4" size, field-painted as directed.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that field measurements are as shown on the drawings.
- B. Verify that outlet boxes are installed in proper locations and at proper mounting heights and are properly sized to accommodate conductors in accordance with NFPA 70.
- C. Verify that suitable support frames are installed where required.
- D. Verify that branch circuit wiring installation is completed, tested, and ready for connection to luminaires.
- E. Verify that conditions are satisfactory for installation prior to starting work.

### **3.02 PREPARATION**

- A. Provide extension rings to bring outlet boxes flush with finished surface.
- B. Clean dirt, debris, plaster, and other foreign materials from outlet boxes.

### **3.03 INSTALLATION**

- A. Coordinate locations of outlet boxes provided under Section 26 0533.16 as required for installation of luminaires provided under this section.
- B. Install products according to manufacturer's instructions.
- C. Install luminaires securely, in a neat and workmanlike manner, as specified in NECA 1 (general workmanship), NECA 1 (general workmanship), and NECA 1 (general workmanship).
- D. Install luminaires plumb and square and aligned with building lines and with adjacent luminaires.
- E. Suspended Ceiling Mounted Luminaires:
  - 1. Do not use ceiling tiles to bear weight of luminaires.
  - 2. Do not use ceiling support system to bear weight of luminaires unless ceiling support system is certified as suitable to do so.
  - 3. Secure surface-mounted and recessed luminaires to ceiling support channels or framing members.
  - 4. Secure pendant-mounted luminaires to building structure with redundant air-craft safety cable.
  - 5. Secure lay-in luminaires to ceiling support channels using listed safety clips at four corners.
  - 6. In addition to ceiling support wires, provide two galvanized steel safety wire(s), minimum 12 gage, connected from opposing corners of each recessed luminaire to building structure.
- F. Suspended Luminaires:
  - 1. Install using the suspension method indicated, with support lengths and accessories as required for specified mounting height.
  - 2. Install canopies tight to mounting surface.
  - 3. Unless otherwise indicated, support pendants from swivel hangers.
- G. Install accessories furnished with each luminaire.
- H. Bond products and metal accessories to branch circuit equipment grounding conductor.
- I. Install fixtures and accessories when furnished by Owner.

### **3.04 FIELD QUALITY CONTROL**

- A. See Section 01 4000 - Quality Requirements, for additional requirements.
- B. Inspect each product for damage and defects.
- C. Operate each luminaire after installation and connection to verify proper operation.
- D. Correct wiring deficiencies and repair or replace damaged or defective products. Repair or replace excessively noisy ballasts as determined by Architect.

### **3.05 ADJUSTING**

- A. Aim and position adjustable luminaires to achieve desired illumination as indicated or as directed by Architect. Secure locking fittings in place.

- B. Exit Signs with Field-Selectable Directional Arrows: Set as indicated or as required to properly designate egress path as directed by Architect or authority having jurisdiction.

### **3.06 CLEANING**

- A. Clean surfaces according to NECA 500 (commercial lighting), NECA 502 (industrial lighting), and manufacturer's instructions to remove dirt, fingerprints, paint, or other foreign material and restore finishes to match original factory finish.

### **3.07 CLOSEOUT ACTIVITIES**

- A. See Section 01 7800 - Closeout Submittals, for closeout submittals.
- B. Demonstration: Demonstrate proper operation of luminaires to Architect, and correct deficiencies or make adjustments as directed.
- C. Just prior to Substantial Completion, replace all fixtures having failed prior to substantial completion. .

### **3.08 PROTECTION**

- A. Protect installed luminaires from subsequent construction operations.

**END OF SECTION**

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## **SECTION 26 5600 EXTERIOR LIGHTING**

### **PART 1 GENERAL**

#### **1.01 SECTION INCLUDES**

- A. Exterior luminaires.
- B. Drivers.
- C. Poles and accessories.
- D. Luminaire accessories.

#### **1.02 REFERENCE STANDARDS**

- A. IES LM-79 - Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products; Illuminating Engineering Society; 2008.
- B. IES LM-80 - Approved Method: Measuring Luminous Flux and Color Maintenance of LED Packages, Arrays, and Modules 2015, with Errata (2017).
- C. NECA 1 - Standard for Good Workmanship in Electrical Construction 2015.
- D. NECA/IESNA 501 - Standard for Installing Exterior Lighting Systems 2006.
- E. NFPA 70 - National Electrical Code Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
- F. UL 1598 - Luminaires Current Edition, Including All Revisions.
- G. UL 8750 - Light Emitting Diode (LED) Equipment for Use in Lighting Products Current Edition, Including All Revisions.

#### **1.03 ADMINISTRATIVE REQUIREMENTS**

- A. Coordination:
  - 1. Coordinate placement of poles and associated foundations with utilities, curbs, sidewalks, trees, walls, fences, striping, etc. installed under other sections or by others. Coordinate elevation to obtain specified foundation height.
  - 2. Notify Architect of any conflicts or deviations from the contract documents to obtain direction prior to proceeding with work.

#### **1.04 SUBMITTALS**

- A. See Section 01 3300 - Submittal Procedures, for submittal process.
- B. Shop Drawings:
  - 1. Indicate dimensions and components for each luminaire that is not a standard product of the manufacturer.
  - 2. Provide structural calculations for each pole.
- C. Product Data: Provide manufacturer's standard catalog pages and data sheets including detailed information on luminaire construction, dimensions, ratings, finishes, mounting requirements, listings, service conditions, photometric performance, weight, effective projected area (EPA), and installed accessories; include model number nomenclature clearly marked with all proposed features.
  - 1. LED Luminaires:
    - a. Include estimated useful life, calculated based on IES LM-80 test data.
    - b. Include IES LM-79 test report upon request.
- D. Certificates for Poles and Accessories: Manufacturer's documentation that products are suitable for the luminaires to be installed and comply with designated structural design criteria.
- E. Operation and Maintenance Data: Instructions for each product including information on replacement parts.
- F. 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 Fixtures: Provide three complete, ready to use, fixtures of each type used.

#### **1.05 QUALITY ASSURANCE**

- A. Conform to requirements of NFPA 70.

- B. Specified fixtures shall match exactly the dimensions and aesthetics of existing fixtures previously installed on exterior of A-wing. Fixtures not matching shall not be permitted.
- C. Electrical Components: Listed and classified by Underwriters Laboratories Inc. as suitable for the purpose specified and indicated.

#### **1.06 DELIVERY, STORAGE, AND HANDLING**

- A. Receive, handle, and store products according to NECA/IESNA 501 and manufacturer's written instructions.
- B. Keep products in original manufacturer's packaging and protect from damage until ready for installation.

#### **1.07 WARRANTY**

- A. See Section 01 7800 - Closeout Submittals, for additional warranty requirements.
- B. Provide three year manufacturer warranty for all LED luminaires, including drivers.

### **PART 2 PRODUCTS**

#### **2.01 MANUFACTURERS**

- A. Acuity Brands, Inc: [www.acuitybrands.com](http://www.acuitybrands.com).
- B. Cooper Lighting, a division of Cooper Industries: [www.cooperindustries.com](http://www.cooperindustries.com).
- C. Hubbell Lighting, Inc: [www.hubbellighting.com](http://www.hubbellighting.com).

#### **2.02 LUMINAIRE TYPES**

- A. Furnish products as indicated in luminaire schedule included on the drawings.
- B. Substitutions: Specified fixtures shall match exactly the dimensions and aesthetics of existing fixtures previously installed on exterior of A-wing. Fixtures not matching the dimensions and aesthetics shall not be permitted.

#### **2.03 LUMINAIRES**

- A. Provide products that comply with requirements of NFPA 70.
- B. Provide products that are listed and labeled as complying with UL 1598, where applicable.
- C. Provide products listed, classified, and labeled as suitable for the purpose intended.
- D. Unless otherwise indicated, provide complete luminaires including modules, drivers, reflectors, lenses, housings and other components required to position, energize and protect the lamp and distribute the light.
- E. Unless specifically indicated to be excluded, provide all required conduit, boxes, wiring, connectors, hardware, poles, foundations, supports, trims, accessories, etc. as necessary for a complete operating system.
- F. Provide products suitable to withstand normal handling, installation, and service without any damage, distortion, corrosion, fading, discoloring, etc.
- G. Provide luminaires listed and labeled as suitable for wet locations unless otherwise indicated.
- H. LED Luminaires:
  - 1. Components: UL 8750 recognized or listed as applicable.
  - 2. Tested in accordance with IES LM-79 and IES LM-80.
  - 3. LED Estimated Useful Life: Minimum of 50,000 hours at 70 percent lumen maintenance, calculated based on IES LM-80 test data.

#### **2.04 DRIVERS**

- A. Manufacturers:
  - 1. Osram Sylvania: [www.sylvania.com/#sle](http://www.sylvania.com/#sle).
  - 2. Philips Lighting Electronics/Advance: [www.advance.philips.com](http://www.advance.philips.com).
  - 3. Osram Sylvania; [www.sylvania.com](http://www.sylvania.com).
  - 4. Substitutions: See Section 01 6000 - Product Requirements.
- B. All Drivers:
  - 1. LED driver shall operate at 120/277 volts with +/-10% variation tolerance.



2. LED driver shall have adjustable output current to optimize lumens and efficacy of luminaire.
3. The enclosure case of the driver must be connected to earth ground when installed in the end-use application.
4. LED driver shall have 0.9 PF and <20% THD at maximum load under all input voltage variations.
5. Driver shall tolerate sustained open circuit and short circuit output conditions without damage.
6. Driver shall not contain any Polychlorinated Biphenyl (PCB's).
7. Provide driver complying with all current applicable federal and state efficiency/efficacy standards.
8. Provide driver with surge protection.
9. Driver shall be manufactured in a factory certified to ISO 9001 Quality System Standards.
10. Manufacturer shall have a twenty year history of producing electronic drivers for the North American Market.

## **PART 3 EXECUTION**

### **3.01 EXAMINATION**

- A. Verify that field measurements are as shown on the drawings.
- B. Verify that outlet boxes are installed in proper locations and at proper mounting heights and are properly sized to accommodate conductors in accordance with NFPA 70.
- C. Verify that suitable support frames are installed where required.
- D. Verify that branch circuit wiring installation is completed, tested, and ready for connection to luminaires.
- E. Verify that conditions are satisfactory for installation prior to starting work.

### **3.02 PREPARATION**

- A. Provide extension rings to bring outlet boxes flush with finished surface.
- B. Clean dirt, debris, plaster, and other foreign materials from outlet boxes.

### **3.03 INSTALLATION**

- A. Coordinate locations of outlet boxes provided under Section 26 0533.16 as required for installation of luminaires provided under this section.
- B. Install products according to manufacturer's instructions.
- C. Install luminaires securely, in a neat and workmanlike manner, as specified in NECA 1 (general workmanship) and NECA/IESNA 501 (exterior lighting).
- D. Install luminaires plumb and square and aligned with building lines and with adjacent luminaires.
- E. Install accessories furnished with each luminaire.
- F. Bond products and metal accessories to branch circuit equipment grounding conductor.

### **3.04 FIELD QUALITY CONTROL**

- A. See Section 01 4000 - Quality Requirements, for additional requirements.
- B. Inspect each product for damage and defects.
- C. Operate each luminaire after installation and connection to verify proper operation.
- D. Measure illumination levels at night with calibrated meters to verify conformance with performance requirements. Record test results in written report to be included with submittals.

### **3.05 ADJUSTING**

- A. Aim and position adjustable luminaires to achieve desired illumination as indicated or as directed by Architect. Secure locking fittings in place.

### **3.06 CLEANING**

- A. Clean surfaces according to NECA/IESNA 501 and manufacturer's instructions to remove dirt, fingerprints, paint, or other foreign material and restore finishes to match original factory finish.

### **3.07 CLOSEOUT ACTIVITIES**

- A. See Section 01 7800 - Closeout Submittals, for closeout submittals.
- B. Just prior to Substantial Completion, replace all fixtures having failed prior to substantial completion..

### **3.08 PROTECTION**

- A. Protect installed luminaires from subsequent construction operations.

### **3.09 SCHEDULE - SEE DRAWINGS**

**END OF SECTION**

## **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 31 2200 - Grading: Topsoil removal.

### **PART 2 PRODUCTS -- NOT USED**

### **PART 3 EXECUTION**

#### **3.01 SITE CLEARING**

- A. Conform to applicable regulations relating to environmental requirements, disposal of debris, and use of herbicides.
- B. Contractor shall be responsible for verification of utilities on site prior to clearing activities.
- C. Protect utilities to remain from damage.
- D. Protect other features designated to remain as final landscaping.
- E. Protect bench marks and survey control points from damage or displacement.

#### **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.

#### **3.03 VEGETATION**

- A. Do not remove or damage vegetation beyond the limits indicated on drawings.
- B. Vegetation Removed: Do not burn, bury, landfill, or leave on site, except as indicated.
  - 1. Remove roots to a minimum depth of 12 inches below the existing surrounding grade or subgrade of new graded surface, whichever is lower.
  - 2. Sod: Remove without disturbing subsoil.
- C. Dead Wood: Remove all dead trees (standing or down), limbs, and dry brush on entire site; treat as specified for vegetation removed.
- D. 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 CONSERVATION OF TOPSOIL**

- A. Topsoil: Satisfactory topsoil is reasonable free of subsoil, clay lumps, stones, and other objects over 2 inches in diameter and without weeds, roots, and other objectionable material.
- B. Strip topsoil to depths encountered; prevent intermingling with underlying subsoil and other objectionable material.
  - 1. Remove heavy growths of grass from areas before stripping.
- C. Maintain stockpile in a manner which will not obstruct the natural flow of drainage. Place silt fence around stockpile to prevent erosion.
  - 1. Separate soils and sod. Soils only are to be reused.
  - 2. Maintain stockpile free from debris and trash.
  - 3. Keep topsoil damp to prevent dust and drying out.
  - 4. Protect stockpiled topsoil from erosion and washouts.

#### **3.05 REMOVAL**

- A. Remove portions of concrete sidewalk and pavement; as indicated. Neatly saw cut edges at right angle to surface.

- B. Remove portions of existing storm drainage and water systems; as indicated.
- C. Remove portions of the existing site lighting system; as indicated.
- D. Remove debris from site.

**3.06 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 and storage of topsoil.
- B. Rough grading for site structures building pads and roadways.
- C. Finish grading for planting.

#### **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 2316.26 - Rock Removal.
- E. Section 31 2323 - Fill: Filling and compaction.

#### **1.03 QUALITY ASSURANCE**

- A. Perform Work in accordance with State of New York, Department of Transportation standards.
  - 1. Maintain one copy on site.

### **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. Locate, identify, and protect from damage above- and below-grade utilities to remain.
- D. Notify utility company to remove and relocate utilities.
- E. Provide temporary means and methods to remove all standing or ponding water from areas prior to grading.
- F. 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.
- G. Protect plants, lawns, rock outcroppings, and other features to remain as a portion of final landscaping.
- H. Permission to interrupt any existing utility service shall be requested in writing a minimum of seven calendar days in advance. The request for any outage shall state the date and duration of the outage.

#### **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. Benching Slopes: Horizontally bench existing slopes greater than 1:4 to key fill material to slope for firm bearing.
- 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 STOCKPILING**

- A. Stockpile topsoil to be re-used on site; topsoil not used on site shall be stockpiled for the Owner at a designated location on the Owner's property.
- B. 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 in areas where seeding and planting are indicated.
- F. Place topsoil where required to level finish grade.
- G. Place topsoil to the following compacted thicknesses:
  - 1. Areas to be Seeded with Grass: 6 inches.
  - 2. Shrub Beds: 18 inches.
  - 3. Flower Beds: 12 inches.
- H. Place topsoil during dry weather.
- I. Topsoil shall be screened to remove roots, weeds, rocks, and foreign material while spreading.
- J. Near plants spread topsoil manually to prevent damage.
- K. Fine grade topsoil to eliminate uneven areas and low spots. Maintain profiles and contour of subgrade.
- L. Lightly compact placed topsoil.
- M. 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 CLEANING**

- A. Remove unused stockpiled topsoil. Grade stockpile area to prevent standing water.
- B. Leave site clean and raked, ready to receive landscaping.

**END OF SECTION**

**SECTION 31 2316.26  
ROCK REMOVAL**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. Removal of identified rock during excavation.

**1.02 RELATED REQUIREMENTS**

- A. Section 31 2323 - Fill: Fill materials.

**1.03 PRICE AND PAYMENT PROCEDURES**

- A. Rock Removal: By the cubic yard measured before disintegration. Includes preparation of rock for removal, removal from position, loading and stockpiling onsite for reuse onsite. For over excavation, payment will not be made for over excavated work nor for replacement materials.

**1.04 DEFINITIONS**

- A. Rock: Solid mineral material and rock fragments or boulders that cannot be removed using conventional excavation equipment.

**1.05 SUBMITTALS**

- A. See Section 01 3300 for submittal procedures.

**1.06 QUALITY ASSURANCE**

- A. Seismic Survey Firm: Company specializing in seismic surveys with five years documented experience.

**PART 2 PRODUCTS - NOT USED**

**PART 3 EXECUTION**

**3.01 EXAMINATION**

- A. Verify site conditions and note subsurface irregularities affecting work of this section.

**3.02 PREPARATION**

- A. Identify required lines, levels, contours, and datum.

**3.03 ROCK REMOVAL**

- A. Excavate and remove rock by mechanical methods.
- B. Mechanical Methods: Drill holes and utilize expansive tools to fracture rock.
- C. Form level bearing at bottom of excavations.
- D. Remove shaled layers to provide sound and unshattered base for footings.
- E. In utility trenches, excavate to 6 inches below invert elevation of pipe and 24 inches wider than pipe diameter.
- F. Remove excavated materials from site.
- G. Correct unauthorized rock removal in accordance with Fill and compacting requirements of Section 31 2323.

**3.04 FIELD QUALITY CONTROL**

- A. Independent agency field inspection will be provided under provisions of Section 01 4000 - Quality Requirements.
- B. Provide for visual inspection of foundation bearing surfaces and cavities formed by removed rock.

**END OF SECTION**

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## **SECTION 31 2316 EXCAVATION**

### **PART 1 GENERAL**

#### **1.01 SECTION INCLUDES**

- A. Excavating for site improvements, site improvements, site improvements, site improvements, site improvements, site improvements, and site improvements.
- B. Rock excavation is defined as the removal of established bedrock, ledgerrock or similar naturally occurring materials 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.
- C. Trenching for utilities outside the building to utility main connections.

#### **1.02 RELATED REQUIREMENTS**

- A. Section 31 2200 - Grading: Grading.
- B. Section 31 2316.13 - Trenching: Excavating for utility trenches outside the building to utility main connections.
- C. Section 31 2323 - Fill: Fill materials, filling, and compacting.

#### **1.03 PROJECT CONDITIONS**

- A. Verify that survey bench mark and intended elevations for the Work are as indicated.

### **PART 2 PRODUCTS - NOT USED**

### **PART 3 EXECUTION**

#### **3.01 PREPARATION**

- A. Identify required lines, levels, contours, and datum locations.
- B. See Section 31 2200 for additional requirements.
- C. Locate, identify, and protect utilities that remain and protect from damage.
- D. Notify utility company to remove and relocate utilities.
- E. Protect bench marks, survey control points, existing structures, fences, sidewalks, paving, and curbs from excavating equipment and vehicular traffic.
- F. Protect plants, lawns, rock outcroppings, and other features to remain.
- G. 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 the Architect.

#### **3.02 EXCAVATING**

- A. Excavate to accommodate new structures and construction operations.
- B. Strip existing topsoil and existing fills from the structure area and proof-roll subgrade. Proof-rolling shall be completed with five (5) passes of a five (5) ton, smooth drum compactor operating in its vibratory mode followed by another five (5) passes in a direction perpendicular to the first. Areas of subgrade which become unstable shall be undercut and backfilled in accordance with Section 31 2323 - Fill
- C. Notify Architect/Engineer of unexpected subsurface conditions and discontinue affected Work in area until notified to resume work.
- D. Slope banks of excavations in accordance with OSHA Standards or provide shoring. Contractor is responsible for excavation safety.
- E. Slope banks of excavations deeper than 4 feet to angle of repose or less until shored.
- F. Do not interfere with 45 degree bearing splay of foundations.
- G. Cut utility trenches wide enough to allow inspection of installed utilities.
- H. Hand trim excavations. Remove loose matter.
- I. Remove lumped subsoil, boulders, and rock up to 1/3 cu yd measured by volume. See Section 31 2316.26 for removal of larger material.

- J. Correct areas that are over-excavated and load-bearing surfaces that are disturbed; see Section 31 2323.
- K. Grade top perimeter of excavation to prevent surface water from draining into excavation.
- L. Determine the prevailing groundwater level prior to excavation. If the proposed excavation extends less than 1 foot into the prevailing groundwater, control groundwater intrusion with perimeter drains routed to sump pumps, or as directed by the Architect. If the proposed excavation extends more than 1 foot into the excavation, control groundwater intrusion with a comprehensive dewatering procedures, or as directed by the Geotechnical Engineer.
- M. All excavation subgrades and structural fill surfaces shall be crowned or sloped to direct precipitation, runoff or ground water which enter the excavation to its periphery. Excavations shall be maintained dry.
- N. Protect bottom of excavations and soil adjacent to and beneath foundations from frost.
- O. Protect excavations by shoring, bracing, sheet piling, underpinning or other methods required to prevent cave-in or loose soil from falling into excavation.
- P. Remove excavated material that is unsuitable for re-use from site.
- Q. Remove excess excavated material from site.

### **3.03 BUILDING AND ROADWAY LIMITS**

- A. Excavate as required to proper subgrade elevations as indicated on the Contract Drawings. Excavate only that area which can be completely backfilled during the day. Excavation shall be performed with backhoe type equipment. All construction equipment other than the excavating equipment shall be confined to areas where backfill operations have been completed. Building and Roadway limits are established for the purpose of this paragraph as five feet (5'-0") beyond the building and/or edge of pavement.

### **3.04 EXCAVATION FOR FOOTINGS**

- A. All footing excavations shall be to elevations as indicated on the Contract Documents. Cut off bottom of trenches, level and remove all loose soil. Backfill to proper lines and grades with select granular fill as specified in Section 31 2323 Fill.

### **3.05 OTHER AREAS**

- A. Excavate to grades shown on drawings. Where excavation grades are not shown on the drawings, excavate as required to accommodate the installation.

### **3.06 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 before placement of foundations.

### **3.07 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.
- F. Protect survey benchmarks, the Contractor shall replace any benchmarks or monuments disturbed as a result of his Work at his expense.

### **END OF SECTION**

## **SECTION 31 2323 FILL**

### **PART 1 GENERAL**

#### **1.01 SECTION INCLUDES**

- A. Filling, backfilling, and compacting for footings, slabs-on-grade, paving, site structures, and utilities within the building.
- B. Backfilling and compacting for utilities outside the building to utility main connections.

#### **1.02 RELATED REQUIREMENTS**

- A. Section 31 2200 - Grading: Removal and handling of soil to be re-used.
- 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. AASHTO T 180 - Standard Specification for Moisture-Density Relations of Soils Using a 4.54-kg (10-lb) Rammer and a 457-mm (18 in.) Drop 2018.
- B. 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, with Editorial Revision (2015).
- C. ASTM D1556/D1556M - Standard Test Method for Density and Unit Weight of Soil in Place by Sand-Cone Method 2015, with Editorial Revision (2016).
- D. ASTM D1557 - Standard Test Methods for Laboratory Compaction Characteristics of Soil Using Modified Effort (56,000 ft-lbf/ft<sup>3</sup> (2,700 kN m/m<sup>3</sup>)) 2012, with Editorial Revision (2015).
- E. ASTM D2167 - Standard Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method 2015.
- F. ASTM D3017 - Standard Test Method for Water Content of Soil and Rock in Place by Nuclear Methods (Shallow Depth) 2005.
- G. ASTM D6938 - Standard Test Methods for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth) 2017a.

#### **1.04 SUBMITTALS**

- A. See Section 01 3300 - Submittal Procedures, for submittal process.
- B. 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. Test results must be taken within a twelve month period.
- E. Compaction Density Test Reports.

#### **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. General Fill: Subsoil excavated on-site and/or imported off-site.
  - 1. General Fill material shall be used for fill in non-load bearing and lawn areas.
  - 2. General Fill used outside of building footprint shall not have more than 20 percent, by weight, of the particles passing the No. 200 sieve and must be approved for use before starting backfill operations.

3. Free of lumps larger than 6", rocks larger than 6", debris, and organic matter.
- B. Granular Fill: Pit run washed stone, sand and gravel or blends of these materials; or tested and approved onsite recovered granular material, free of shale, clay, friable material and debris.
1. Granular fill material shall be used as subgrade fill. The granular fill 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. Graded in accordance with the New York State Department of Transportation.
    - a. 2" sieve: 100 percent passing.
    - b. 1/4" sieve: 30 to 65 percent passing.
    - c. No. 40: 5 to 40 percent passing.
    - d. No. 200: 0 to 10 percent passing.
  3. Not more than 30 percent, by weight, of the particles retained on the 3/4" 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 limit specified, gap graded material being unsuitable.
- C. Select Granular Fill: Well graded crushed rock, free of shale, clay, friable material and debris.
1. Select Granular fill shall be as subbase material below foundations, and floor slabs, and below exterior finished concrete such as sidewalks. Subgrades shall be sloped and graded to promote drainage.
  2. 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.
  3. Graded in accordance with the New York State Department of Transportation.
    - a. 2" sieve: 100 percent passing by dry unit weight.
    - b. 1/4" sieve: 25 to 60 percent passing by dry unit weight.
    - c. No. 40: 5 to 40 percent passing by dry unit weight.
    - d. No. 200: 0 to 10 percent passing by dry unit weight.
  4. Select granular fill to be placed within 2'-0" of final exterior grade shall be subject soundness requirements. Soundness requirements shall be less than 30 percent based upon a four-cycle magnesium sulfate soundness test.
  5. Select granular fill shall have a well defined moisture density relationship curve.
- D. Topsoil: Topsoil excavated on-site and/or imported off-site.
1. Top soil shall be screened and free of roots, rocks larger than 1/4", subsoil, debris, large weeds and foreign matter.
  2. Acidity range (pH) of 5.5 to 7.5.
  3. Containing a minimum of 4 percent and a maximum of 25 percent organic matter. Topsoil shall be amended with stable compost, type A as per NYS DOT specifications.
  4. The Contractor shall be responsible for processing the topsoil to meet that requirements as stated above.
    - a. The topsoil shall be modified so that the final mix contains at least 75 percent sand.
    - b. A uniform sand in a medium size class shall be used for soil modification. Particle size shall be in the 16 to 150 sieve size.
    - c. Soil tests shall be performed to determine the appropriate proportion of sand to be used.
- E. Pipe Bedding: Shall be Select Granular Fill.
- F. Coarse Aggregate: Crushed rock, free of shale, clay, friable material and debris.
1. Graded as follows:
    - a. No. 1A Stone:
      - 1) 1/2": 100 percent passing.
      - 2) 1/4": 90 - 100 percent passing.
      - 3) 1/8": 0 - 15 percent passing.
      - 4) No. 200: 0 - 1.0 percent passing.
    - b. No. 1 Stone:
      - 1) 1": 100 percent passing.

- 2) 1/2": 90 - 100 percent passing.
- 3) 1/4": 0 - 15 percent passing.
- 4) No. 200: 0 - 1.0 percent passing.
- c. No. 2 Stone:
  - 1) 1-1/2": 100 percent passing.
  - 2) 1": 90 - 100 percent passing.
  - 3) 1/2": 0 - 15 percent passing.
  - 4) No. 200: 0 - 1.0 percent passing.
- d. No. 5 Stone:
  - 1) 4": 90 - 100 percent passing.
  - 2) 3": 0 - 15 percent passing.
  - 3) No. 200: 0 - 0.7 percent passing.
- e. 50-50 Mix No. 1 and No. 2 Stone (ASTM No. 57 Stone):
  - 1) 1-1/2": 100 percent passing.
  - 2) 1": 95 - 100 percent passing.
  - 3) 1/2": 25 - 60 percent passing.
  - 4) No. 4: 0 - 10 percent passing.
  - 5) No. 200: 0 - 1 percent passing.
- G. Coarse Sand: Material shall consist of crushed stone, sand, gravel, and screened gravel.
  - 1. Graded as follows:
    - a. 1/4": 100 percent passing.
    - b. No. 40: 50 - 100 percent passing.
    - c. No. 80: 10 - 50 percent passing.
    - d. No. 200: 0 - 10 percent passing.
- H. Stone Mulch: Natural rounded river stone ranging in size from 1/2" to 2" in diameter. Stone coloration shall be a mix of natural earth tones, including reds, browns, and tans.

## **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. See Section 31 2200 for additional requirements.
- D. Verify areas to be filled are not compromised with surface or ground water.

### **3.02 PREPARATION**

- A. Scarify subgrade surface to a depth of 6" 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 to contours and elevations indicated using unfrozen materials.
- B. Fill up to subgrade elevations unless otherwise indicated.
- C. Employ a placement method that does not disturb or damage other work.
- D. Systematically fill to allow maximum time for natural settlement. Do not fill over porous, wet, frozen or spongy subgrade surfaces.
- E. Maintain optimum moisture content of fill materials to attain required compaction density.
- F. Granular Fill: Place and compact materials in equal continuous layers not exceeding 6" compacted depth.
- G. Slope grade away from building minimum 2" in 10', unless noted otherwise. Make gradual grade changes. Blend slope into level areas.
- H. Correct areas that are over-excavated.
  - 1. Other areas: Use general fill, flush to required elevation, compacted to minimum 95 percent of maximum dry density.

- I. Compaction Density Unless Otherwise Specified or Indicated:
  - 1. Under pipe bedding and all trench backfill under pavement, under paving, slabs-on-grade, and below footings and pipe lines, under and around structures: Proctor Test - Modified Method A; 95 percent of maximum dry density.
  - 2. At other locations, including trenches under lawns or gardens, and rough site grading outside pavement and building areas: Proctor Test - Standard Method A; 90 percent of maximum dry density.
  - 3. Expressed as a percentage of the maximum dry weight of material compacted in the laboratory. Field density tests of materials determined by Nuclear Density Methods.
  - 4. The Architect/Engineer reserves the right to order additional "In-Place Density" tests to ascertain consistent conformance and maintenance of the compaction requirements for each situation as indicated above. Payment for these tests will be made by the Contractor. The Contractor shall cooperate by digging test holes at no additional cost to the Owner.
- 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 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 AASHTO T 180, AASHTO T 180, or AASHTO T 180.
- D. If tests indicate work does not meet specified requirements, remove work, replace and retest.
- E. Proof roll compacted fill at surfaces that will be under slabs-on-grade.

#### **3.05 CLEANING**

- A. See Section 01 7419 - Construction Waste Management and Disposal, for additional requirements.
- 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**

**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: Topsoil fill at areas adjacent to aggregate base course.
- D. Section 31 2323 - Fill: Compacted fill under base course.
- E. Section 32 1216 - Asphalt Paving: Binder and finish asphalt courses.

**1.03 REFERENCE STANDARDS**

- A. ASTM D1556/D1556M - Standard Test Method for Density and Unit Weight of Soil in Place by Sand-Cone Method 2015, with Editorial Revision (2016).
- B. ASTM D2167 - Standard Test Method for Density and Unit Weight of Soil in Place by the Rubber Balloon Method 2015.
- C. ASTM D2487 - Standard Practice for Classification of Soils for Engineering Purposes (Unified Soil Classification System) 2017, with Editorial Revision.
- D. ASTM D6938 - Standard Test Methods for In-Place Density and Water Content of Soil and Soil-Aggregate by Nuclear Methods (Shallow Depth) 2017a.
- E. The New York State Department of Transportation, Standard Specification Construction and Materials.

**1.04 SUBMITTALS**

- A. See Section 01 3300 - Submittal Procedures, for submittal process.
- 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. 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. Base Course, Type 4: Well Graded Crushed Rock, conforming to New York State Department of Transportation standards.
  - 1. Graded in accordance with ASTM C136/C136M, within the following limits:
    - a. 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.
- B. Geotextile: Synthetic Fabric, Mirafi HP370 or approved equal.
- C. Asphalt Millings: Cold milled on-site recovered asphalt pavement produced in accordance with NYS DOT specifications. To be used in areas indicated on site plans or as otherwise directed by the Engineer.

## **2.02 SOURCE QUALITY CONTROL**

- A. Where aggregate materials are specified using ASTM D2487 classification, test and analyze samples for compliance before delivery to site.
- B. 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 subgrade has been compacted, inspected, gradients and elevations are correct, and is dry.
- C. 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.
- C. Proofrolling of pavement subgrades shall be performed using a ten (10) ton vibratory compactor completing a minimum of eight (8) passes. Any unstable areas detected shall be undercut and replaced.

### **3.03 INSTALLATION**

- A. The subgrade for the subbase course under bituminous concrete pavement shall be shaped to line and grade as shown on the drawings with the finish surface not more than 1/2" above or 1/2" below the required subgrade elevation, unless otherwise specified herein, compacted and prepared as specified.
- B. Prior to placing subbase course, debris from construction, vegetation or rubbish shall be grubbed or raked as necessary and removed from the site. Preparation of subgrade for the subbase course shall follow the grading and leveling operation. The procedure for preparation of subgrade shall be as specified below:
  - 1. Under bituminous concrete paved areas:
    - a. Following the finish grading of the subgrade, the ground surface shall be densified. Prior to densification, the density of the soil shall be checked. Following the initial rolling the soil density shall be determined again. If the percent compaction has increased by 2% or more, the area shall be rolled again. If the percent compaction has remained the same or increased by less than 2% additional rolling shall not be required. This procedure shall be repeated until the increase in percent compaction is less than 2%. The resulting compaction shall be at least 95% of the maximum dry density as determined by ASTM D1557-78, Method D.
    - b. Finished subgrade resulting from excavations or fills shall be uniformly smooth-graded and not vary more than 1/2" from the established grade and cross section. Upon completion of compaction place a geotextile as indicated herein.
    - c. The base course shall be dumped and spread to a uniform line and grade in a compacted thickness of 12", plus or minus 1/2". The crushed stone subbase shall not be placed on surfaces that are muddy, frozen or contain frost. Compaction shall be accomplished by rolling with tamping rollers, vibratory rollers, pneumatic tired rollers, or other equipment suited to the material being compacted and the work area location.
    - d. The crushed stone subbase and base course shall be dumped and spread to a uniform line and grade in a compacted thickness of 6", plus or minus 1/2". The crushed stone subbase shall not be placed on surfaces that are muddy, frozen or contain frost. Compaction shall be accomplished by rolling with tamping rollers, vibratory rollers, pneumatic tired rollers, or other equipment suited to the material being compacted and the work area location.
    - e. Compaction shall be at least 95% maximum dry density as determined by the modified Proctor test, ASTM D-1557.
- C. Place aggregate in maximum 6 inch layers and roller compact to specified density.
- D. Level and contour surfaces to elevations and gradients indicated.



- E. Use mechanical tamping equipment in areas inaccessible to compaction equipment.

#### **3.04 FIELD QUALITY CONTROL**

- A. See Section 01 4000 - Quality Requirements, for general requirements for field inspection and testing.
- B. Compaction density testing will be performed on compacted aggregate base course in accordance with ASTM D1556, ASTM D1556, ASTM D1556, or ASTM D1556.
- C. If tests indicate work does not meet specified requirements, remove work, replace and retest.

#### **3.05 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**

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**SECTION 32 1316  
DECORATIVE CONCRETE PAVING**

**PART 1 GENERAL**

**1.01 RELATED DOCUMENTS**

- A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

**1.02 SUMMARY**

- A. Section includes colored and stamped concrete paving.
- B. Related Requirements:
  - 1. Section 03 3000 Cast-In-Place concrete paving with other finishes, curbs and gutters, and stamped detectable warnings.

**1.03 DEFINITIONS**

- A. Cementitious Materials: Portland cement alone or in combination with one or more of blended hydraulic cement, fly ash, slag cement, and other pozzolans.
- B. W/CM Ratio: The ratio by weight of water to cementitious materials.

**1.04 PREINSTALLATION MEETINGS**

- A. Preinstallation Conference: Conduct conference at the project site.
  - 1. Review methods and procedures related to decorative concrete paving, including but not limited to-, the following:
    - a. Concrete mixture design.
    - b. Quality control of concrete materials and decorative concrete paving construction practices.
  - 2. Require representatives of each entity directly concerned with decorative concrete paving to attend, including the following:
    - a. Contractor's superintendent.
    - b. Independent testing agency responsible for concrete design mixtures.
    - c. Ready-mix concrete manufacturer.
    - d. Decorative concrete paving Installer.
    - e. Manufacturer's representative of decorative concrete paving system products.
    - f. Admixture manufacturer

**1.05 ACTION SUBMITTAL**

- A. Comply with the requirements of Section 01 33 23 - Submittal Procedures and as modified below.
- B. Product Data: For each type of product.
- C. Samples for Initial Selection: For each type of product, ingredient, or admixture requiring color, pattern, or texture selection.
- D. Samples for Verification: For each type of exposed color, pattern, or texture indicated.
- E. Design Mixtures: For each decorative concrete paving mixture. Include alternate design mixtures when characteristics of materials, Project conditions, weather, test results, or other circumstances warrant adjustments.

**1.06 INFORMATIONAL SUBMITTALS**

- A. Qualification Data: For qualified Installer, ready-mix concrete manufacturer and testing agency.
- B. Material Certificates: For the following, from manufacturer:
  - 1. Cementitious materials.
  - 2. Steel reinforcement and reinforcement accessories.
  - 3. Admixtures.
  - 4. Curing compounds.
  - 5. Applied finish materials.
  - 6. Bonding agent or epoxy adhesive.
  - 7. Joint fillers.

- C. Material Test Reports: For each of the following:
  - 1. Aggregates: Include service-record data indicating absence of deleterious expansion of concrete due to alkali-aggregate reactivity.
- D. Field quality-control reports.

#### **1.07 QUALITY ASSURANCE**

- A. Installer Qualifications: An employer of workers trained and approved by manufacturer of decorative concrete paving systems.
- B. Ready-Mix-Concrete Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products and that complies with ASTM C 94/C 94M requirements for production facilities and equipment.
- C. Testing Agency Qualifications: Qualified according to ASTM C 1077 and ASTM E 329 for testing indicated.
  - 1. Personnel conducting field tests shall be qualified as ACI Concrete Field Testing Technician, Grade 1, according to ACI CP-1 or an equivalent certification program.
- D. Mockups: Build mockups to verify selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.
  - 1. Build mockups of full-thickness sections of decorative concrete paving to demonstrate typical joints; surface color, pattern, and texture; curing; protective sealers; And standard of workmanship using same personnel, equipment and techniques to be used throughout Project. Cure concrete to receive stains minimum 14 days prior to treatment.
  - 2. Build mockups of decorative concrete paving in the location and of the size indicated or, if not indicated, build mockups where directed by Architect. Mockups shall be at least 10' by 10'.
  - 3. Acceptance of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.

#### **1.08 PRECONSTRUCTION TESTING**

- A. Preconstruction Testing Service: Engage a qualified independent testing agency to perform preconstruction testing on decorative concrete paving mixtures.

#### **1.09 FIELD CONDITIONS**

- A. Traffic Control: Maintain access for vehicular and pedestrian traffic as required for other construction activities.
- B. Cold-Weather Concrete Placement: Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing, or low temperatures. Comply with ACI 306.1 and the following:
  - 1. When air temperature has fallen to or is expected to fall below 40 deg F, uniformly heat water and aggregates before mixing to obtain a concrete mixture temperature of not less than 50 deg F and not more than 80 deg 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 specified and approved in design mixtures.
- C. Hot-Weather Concrete Placement: Comply with ACI 301 and as follows when hot-weather conditions exist:
  - 1. Cool ingredients before mixing to maintain concrete temperature below 90 deg F at time of placement. Chilled mixing water or chopped ice may be used to control temperature, provided water equivalent of ice is calculated in total amount of mixing water. Use liquid nitrogen to cool concrete is Contractor's option.
  - 2. Cover steel reinforcement with water-soaked burlap, so steel temperature will not exceed ambient air temperature immediately before embedding in concrete.
  - 3. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade moisture uniform without standing water, soft spots, or dry areas.

## **PART 2 - PRODUCTS**

### **2.01 CONCRETE, GENERAL**

- A. ACI Publications: Comply with ACI 301 unless otherwise indicated.

### **2.02 DECORATIVE CONCRETE PAVING SCHEDULE**

- A. Patterned Decorative Concrete Paving:
  - 1. Locations: Install at all locations indicated on the drawings.
  - 2. Coloring Method: Integrally colored with Pigmented mineral dry-shake hardener.
  - 3. Field Patterning Method: Stamped.
    - a. Texture and Pattern: "SLATE".
    - b. Pigmented Mineral Dry-Shake Hardener: As selected by Architect from manufacturer's full range.
    - c. Release Agent: Match pigmented mineral dry-shake hardener.
  - 4. Colors: As listed below, or as selected by Architect from manufacturer's full range.
    - a. Integral Color: Silver Gray CC770/1.
    - b. Pigmented Mineral Dry Shake Hardener and Release Agent: Dark Gray CC230/4.

### **2.03 FORMS**

- A. Form Materials: Plywood, metal, metal-framed plywood, or other approved panel-type materials to provide full-depth, continuous, straight, and smooth exposed surfaces.
  - 1. Use flexible or uniformly curved forms for curves of a radius of 100 feet or less. Do not use notched and bent forms.
- B. Form-Release Agent: Commercially formulated form-release agent that will not bond with, discolor, or adversely affect concrete surfaces and that will not impair subsequent treatments of concrete surfaces.

### **2.04 STEEL REINFORCEMENT**

- A. All steel reinforcement listed below shall be epoxy-coated except for Steel Welded-Wire Mesh reinforcement.
  - 1. Steel Welded-Wire Reinforcement: ASTM A 1064/A 1064M, fabricated from as-drawn steel wire into flat sheets.
  - 2. Reinforcing Bars: ASTM A 615/A 615M, Grade 60; deformed.
  - 3. Steel Bar Mats: ASTM A 184/A 184M; with ASTM A 615/A 615M, Grade 60 deformed bars; assembled with clips.
  - 4. Plain-Steel Wire: ASTM A 1064/A 1064M, as drawn.
- B. Joint Dowel Bars: ASTM A 615/A 615M, Grade 60 plain-steel bars. Cut bars true to length with ends square and free of burrs.
- C. Bar Supports: Bolsters, chairs, spacers, and other devices for spacing, supporting, and fastening reinforcing bars, welded-wire reinforcement, and dowels in place. Manufacture bar supports according to CRSI's "Manual of Standard Practice" from steel wire, plastic, or precast concrete of greater compressive strength than concrete specified, and as follows:

### **2.05 CONCRETE MATERIALS**

- A. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant, obtain aggregate from single source, and obtain admixtures from single source from single manufacturer.
- B. Cementitious Materials:
  - 1. Portland Cement: ASTM C 150/C 150M, Portland Cement Type I, II or I/II.
- C. Normal-Weight Aggregates: ASTM C 33/C 33M, Class 4S, uniformly graded. Provide aggregates from a single source with documented service-record data of at least 10 years' satisfactory service in similar paving applications and service conditions using similar aggregates and cementitious materials.
  - 1. Maximum Coarse-Aggregate Size: 3/4-inch nominal.
  - 2. Minimum Total Coarse Aggregate Content for Slabs on Grade and Topping Slabs:
    - a. 10.5 cubic feet per cubic yard for top size aggregate less than 1 inch.

3. Combined Aggregate Gradation for Slabs on Grade, Topping Slabs, And Other Designated Concrete:
  - a. 8 to 22 percent for smaller top size aggregates (1 or 3/4 inch) retained on each sieve below the top size and above the No. 100.
4. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement.
- D. Air-Entraining Admixture: ASTM C 260.
  1. Basis-of-Design Product: Subject to compliance with requirements, provide Euclid Chemical Company (The); EUCON Series or a comparable product by one of the following:
    - a. BASF Corporation - Construction Systems.
    - b. Sika Corporation.
- E. Chemical Admixtures: Admixtures certified by manufacturer to be compatible with other admixtures and to contain no more than 0.1 percent water-soluble chloride ions by mass of cementitious material.
  1. Water-Reducing Admixture: ASTM C 494, Type A.
    - a. Basis-of-Design Product: Subject to compliance with requirements, provide Euclid Chemical Company (The); EUCON Series or a comparable product by one of the following:
      - 1) BASF Corporation - Construction Systems.
      - 2) Sika Corporation.
  2. Retarding Admixture: ASTM C 494 Type B.
    - a. Basis-of-Design Product: Subject to compliance with requirements, provide Euclid Chemical Company (The); EUCON Series or a comparable product by one of the following:
      - 1) BASF Corporation - Construction Systems.
      - 2) Sika Corporation.
  3. Water-Reducing and Retarding Admixture: ASTM C 494, Type D.
    - a. Basis-of-Design Product: Subject to compliance with requirements, provide Euclid Chemical Company (The); [EUCON Series or a comparable product by one of the following:
      - 1) BASF Corporation - Construction Systems.
      - 2) Sika Corporation.
  4. High-Range, Water-Reducing Admixture: ASTM C 494, Type F.
    - a. Basis-of-Design Product: Subject to compliance with requirements, provide Euclid Chemical Company (The); EUCON Series, PLASTOL Series, or a comparable product by one of the following:
      - 1) BASF Corporation - Construction Systems.
      - 2) Sika Corporation.
  5. High-Range, Water-Reducing and Retarding Admixture: ASTM ' 494, Type G.
    - a. Basis-of-Design Product: Subject to Compliance with requirements, provide Euclid Company (The); EUCON Series or a comparable product by one of the following:
      - 1) BASF Corporation - Construction Systems.
      - 2) Sika Corporation.
  6. Plasticizing and Retarding Admixture: ASTM C 1017, Type II.
    - a. Basis-of-Design Product: Subject to compliance with requirements, provide Euclid Chemical Company (The); EUCON Series or a comparable product by one of the following:
      - 1) BASF Corporation - Construction Systems.
      - 2) Sika Corporation.
  7. Non-Chloride Set Accelerating Admixture: ASTM C 494, Type C and E
    - a. Basis-of-Design Product: Subject to compliance with requirements, provide Euclid Chemical Company (The); ACCELGUARD Series or a comparable product by one of the following:
      - 1) BASF Corporation - Construction Systems.
      - 2) Sika Corporation.

- F. Alkali Silica Reactivity (ASR) Control Admixture: Lithium nitrate admixture for the prevention of ASR in concrete when reactive aggregate, sufficient alkalis and moisture are present. Concrete containing proposed aggregate and ASR control admixture must have test data indicating conformance to ASTM C1293.
  - 1. Basis-of-Design Product: Subject to compliance with requirements, provide Euclid Chemical Company (The); EUCON INTEGRAL ARC or a comparable product by one of the following:
    - a. BASF Corporation - Construction Systems.
    - b. Sika Corporation.
- G. Color Pigment: ASTM C 979/C 979M, synthetic mineral-oxide pigments or colored water-reducing admixtures; color stable, free of carbon black, nonfading, and resistant to lime and other alkalis.
  - 1. Basis-of-Design Product: Subject to compliance with requirements, provide Euclid Chemical Company (The); INCRETE COLORCRETE INTEGRAL COLOR or a comparable product by one of the following:
    - a. QC Construction Products.
    - b. Scofield, L.M. Company.
  - 2. Color: Refer to paragraph 2.02.
- H. Water: Potable and complying with ASTM C 94/C 94M.

## **2.06 SURFACE COLORING MATERIALS**

- A. Pigmented Powder Release Agent: Factory-packaged, dry combination of surface-conditioning and dispersing agents interground with color pigments that facilitates release of stamp mats. Use color pigments that are finely ground, nonfading mineral oxides interground with cement.
  - 1. Basis-of-Design Product: Subject to compliance with requirements, provide Euclid Chemical Company (The); INCRETE COLOR RELEASE or a comparable product by one of the following:
    - a. QC Construction Products.
    - b. Scofield, L.M. Company.
  - 2. Color: Refer to paragraph 2.02.

## **2.07 STAMPING DEVICES**

- A. Stamp Mats: Semirigid polyurethane mats with projecting textured and ridged underside capable of imprinting texture and joint patterns on plastic concrete.
  - 1. Basis-of-Design Product: Subject to compliance with requirements, provide Euclid Chemical Company (The); INCRETE STAMPED CONCRETE TOOLS or a comparable product by one of the following:
    - a. Scofield, L.M. Company.
  - 2. Pattern: Refer to paragraph 2.02

## **2.08 CURING AND SEALING MATERIALS**

- A. Evaporation Retarder: Waterborne, monomolecular, film forming, manufactured for application to fresh concrete.
  - 1. Basis-of-Design Product: Subject to compliance with requirements, provide Euclid Chemical Company (The); INCRETE DELAY or a comparable product by one of the following:
    - a. Kaufman Products, Inc.
- B. Waterborne, Membrane-Forming Curing Compound: ASTM C 309, Type I, Class B, manufactured for colored concrete.
  - 1. Basis-of-Design Product: Subject to compliance with requirements, provide Euclid Chemical Company (The); INCRETE CURECRETE WATER BASED or a comparable product by one of the following:
    - a. Kaufman Products, Inc.
  - 2. For integrally colored concrete, curing compound shall be pigmented type approved by coloring admixture manufacturer.
  - 3. For concrete indicated to be sealed, curing compound shall be compatible with sealer.

## 2.09 RELATED MATERIALS

- A. Joint Fillers: ASTM D 1751, asphalt-saturated cellulosic fiber in preformed strips.
- B. Bonding Agent: ASTM C 1059/C 1059M, Type II, non-redispersible, acrylic emulsion or styrene butadiene.
  - 1. Basis-of-Design Product: Subject to compliance with requirements, provide Euclid Chemical Company (The) INCRETE BONDCRETE or a comparable product by one of the following:
    - a. Kaufman Products, Inc.
- C. Polyethylene Film: ASTM D 4397, 1 mil (0.025 mm) thick, clear.
- D. Joint Sealants: Single-Component Polyurethane: Provide the following:
  - 1. Urethane, S, P, 50, T, NT: Single-component, pourable, plus 50 percent and minus 50 percent movement capability, traffic-use, urethane joint sealant; ASTM C 920, Type S, Grade NS, Class 50, Uses T, M, A, and 0.
    - a. Basis-of-Design Product: Subject to compliance with requirements, provide Euclid Chemical Company (The); EUCOLASTIC SL or a comparable product by one of the following:
      - 1) BASF Corporation - Construction Systems.
      - 2) LymTal International Inc.
    - b. Color shall match integral color use in concrete.

## 2.10 CONCRETE MIXTURES

- A. Obtain each color, size, type, and variety of concrete mixture from single manufacturer with resources to provide concrete of consistent quality in appearance and physical properties.
- B. Prepare design mixtures proportioned according to ACI 301, for each type and strength of normal-weight concrete, and as determined by either laboratory trial mixtures or field experience.
  - 1. Use a qualified independent testing agency for preparing and reporting proposed concrete design mixtures for the trial batch method.
- C. Add air-entraining admixture at manufacturer's prescribed rate to result in normal-weight concrete at point of placement having an air content as follows:
  - 1. Air Content: 6 percent plus or minus 1.5 percent for 3/4-inch (19-mm) nominal maximum aggregate size.
- D. Limit water-soluble, chloride-ion content in hardened concrete to 0.15 percent by weight of cement.
- E. Chemical Admixtures: Use admixtures according to manufacturer's written instructions.
  - 1. Use water-reducing admixture, high-range, water-reducing admixture, high-range, water-reducing and retarding admixture, plasticizing and retarding admixture in concrete as required for placement and workability.
  - 2. Use water-reducing and retarding admixture when required by high temperatures, low humidity, or other adverse placement conditions.
  - 3. Use non-chloride accelerator for all concrete, less than 8 inches thick, placed at air temperatures below 50 degrees Fahrenheit.
  - 4. Use alkali-silica reactivity inhibitor unless ready mix company confirms that the aggregates to be used on the job are non-reactive per ASTM C1260, ASTM C1567 or ASTM C1293
- F. Color Pigment: Add color pigment to concrete mixture according to manufacturer's written instructions and to result in hardened concrete color consistent with approved mockup.
- G. Concrete Mixtures: Normal-weight concrete.
  - 1. Compressive Strength (28 Days): 5,000 psi.
  - 2. Maximum W/C Ratio at Point of Placement: 0.45.
  - 3. Slump: Unless otherwise specified, select a target slump at the point of delivery for all concrete mixtures. Selected target slump shall not exceed 9 in. Concrete shall not show visible signs of segregation. The target slump shall be enforced for the duration of the project. Determine the slump by ASTM C143/C 143M. Slump tolerances shall meet the requirements of ACI 117.



4. Slump adjustment: Unless otherwise specified, if concrete slump test results are below required slump, slump may be adjusted by adding chemical admixtures, or adding water up to amount allowed in accepted mixture proportions. Addition of water shall be in accordance with ASTM C94/C94M. Do not exceed specified maximum w/cm or w/cm used in proportioning the concrete or required slump. Do not add water to concrete delivered in equipment not acceptable for mixing. Measure slump and air content of air- entrained concrete after slump adjustment to verify compliance with specified requirements."

## **2.11 CONCRETE MIXING**

- A. Ready-Mixed Concrete: Measure, batch, and mix concrete materials and concrete according to ASTM C 94/C 94M. Furnish batch certificates for each batch discharged and used in the Work.
  1. When air temperature is between 85 and 90 deg F (30 and 32 deg C), reduce mixing and delivery time from 1-1/2 hours to 75 minutes; when air temperature is above 90 deg F (32 deg C), reduce mixing and delivery time to 60 minutes.

## **PART 3 - EXECUTION**

### **3.01 EXAMINATION**

- A. Proof-roll prepared subbase surface below decorative concrete paving to identify soft pockets and areas of excess yielding.
  1. Completely proof-roll subbase in one direction and repeat in perpendicular direction. Limit vehicle speed to 3 mph.
  2. Proof-roll with a pneumatic-tired and loaded, 10-wheel, tandem-axle dump truck weighing not less than 15 tons.
  3. Correct subbase with soft spots and areas of pumping or rotting exceeding depth of 1/2 inch in 10 feet, or according to requirements in Section 310000 "Earth Moving."
- B. Proceed with installation only after unsatisfactory conditions have been corrected.

### **3.02 PREPARATION**

- A. Remove loose material from compacted subbase surface immediately before placing concrete.
- B. Protect adjacent construction from discoloration and spillage during application of color hardeners, release agents, curing compounds, and sealers.

### **3.03 EDGE FORMS AND SCREED CONSTRUCTION**

- A. Set, brace, and secure edge forms, bulkheads, and intermediate screed guides to required lines, grades, and elevations. Install forms to allow continuous progress of work and so forms can remain in place at least 24 hours after concrete placement.
- B. Clean forms after each use and coat with form-release agent to ensure separation from concrete without damage.

### **3.04 STEEL REINFORCEMENT INSTALLATION**

- A. General: Comply with CRSI's "Manual of Standard Practice" for fabricating, 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.
- D. Install welded-wire reinforcement in lengths as long as practicable. Lap adjoining pieces at least one full mesh, and 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 2-inch overlap to adjacent mats.

### **3.05 JOINTS**

- A. General: Form isolation and contraction joints and tool edges true to line, with faces perpendicular to surface plane of concrete. Construct transverse joints at right angles to

centerline unless otherwise indicated.

1. When joining existing paving, place transverse joints to align with previously placed joints unless otherwise indicated.
- B. Isolation Joints: Form isolation joints of preformed joint-filler strips abutting concrete curbs, catch basins, manholes, inlets, structures, walks, other fixed objects, and where indicated.
  1. Locate expansion joints at intervals of 30 feet minimum and 45 feet maximum unless otherwise indicated.
  2. Extend joint fillers full width and depth of joint.
  3. Terminate joint filler not less than 1/2 inch or more than 1 inch below finished surface if joint sealant is indicated.
  4. Place top of joint filler flush with finished concrete surface if joint sealant is not indicated.
  5. Furnish joint fillers in one-piece lengths. Where more than one length is required, lace or clip joint-filler sections together.
  6. During concrete placement, protect top edge of joint filler with metal, plastic, or other temporary preformed cap. Remove protective cap after concrete has been placed on both sides of joint.
  7. Sawed Joints: Form contraction joints with power saws equipped with shatterproof abrasive or diamond-rimmed blades. Cut 1/8-inch wide joints into concrete when cutting action will not tear, abrade, or otherwise damage surface and before developing random contraction cracks.
    - a. Tolerance: Ensure that sawed joints are within 3 inches both directions from centers of dowels.
- C. Doweled Contraction Joints: Install dowel bars and support assemblies at joints where indicated. Lubricate or coat with asphalt one-half of dowel length to prevent concrete bonding to one side of joint.
- D. Edging: After initial floating, tool edges of paving, gutters, curbs, and joints in concrete with an edging tool to a 1/2-inch radius. Repeat tooling of edges after applying surface finishes. Eliminate edging-tool marks on concrete surfaces.

### **3.06 CONCRETE PLACEMENT**

- A. Before placing concrete, inspect and complete formwork installation, steel reinforcement, and items to be embedded or cast-in.
- B. Remove snow, ice, or frost from subbase surface and steel reinforcement before placing concrete. Do not place concrete on frozen surfaces.
- C. Moisten subbase to provide a uniform dampened condition at time concrete is placed. Do not place concrete around manholes or other structures until they are at required finish elevation and alignment.
- D. Comply with ACI 301 requirements 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.
- F. Consolidate concrete according to ACI 301 by mechanical vibrating equipment supplemented by hand spading, rodding, or tamping.
  1. Consolidate concrete along face of forms and adjacent to transverse joints with an internal vibrator. Keep vibrator away from joint assemblies, reinforcement, or side forms. Use only square-faced shovels for hand spreading and consolidation. Consolidate with care to prevent dislocating reinforcement, dowels, and joint devices.
- G. Screed paving surface with a straightedge and strike off.
- H. Commence initial floating using bull floats or darbies to impart an open-textured and uniform surface plane before excess moisture or bleedwater appears on the surface. Do not further disturb concrete surfaces before beginning finishing operations or spreading surface treatments.

### **3.07 FLOAT FINISHING**

- A. General: Do not add water to concrete surfaces during finishing operations.

- B. Float Finish: Begin the second floating operation when bleedwater sheen has disappeared and 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. Cut down high spots and fill low spots. Refloat surface immediately to uniform granular texture.

### **3.08 STAMPING**

- A. Mat Stamping: After floating and while concrete is plastic, apply mat-stamped finish.
  - 1. Pigmented Powder Release Agent: Uniformly distribute onto concrete at a rate of 3 to 4 lb/100 sq.
  - 2. After application of release agent, accurately align and place stamp mats in sequence.
  - 3. Uniformly load mats and press into concrete to produce required imprint pattern and depth of imprint on concrete surface. Gently remove stamp mats. Hand stamp edges and surfaces unable to be imprinted by stamp mats.
  - 4. Remove residual release agent according to manufacturer's written instructions, but no fewer than three days after stamping concrete, or when concrete has achieved sufficient strength not to be damaged. High-pressure-wash surface and joint patterns, taking care not to damage stamped concrete. Control, collect, and legally dispose of runoff.
- B. Tool Stamping: After floating and while concrete is plastic, apply tool-stamped finish.
  - 1. Cover surface with polyethylene film, stretch taut to remove wrinkles, lap sides and ends 3 inches, and secure to edge forms. Lightly broom surface to remove air bubbles.
  - 2. Accurately align and place stamp tools in sequence and tamp into concrete to produce required imprint pattern and depth of imprint on concrete surface. Gently remove stamp tools. Hand stamp edges and surfaces unable to be imprinted by stamp tools.
  - 3. Carefully remove polyethylene film immediately after tool stamping.

### **3.09 CONCRETE PROTECTION AND CURING**

- A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures.
- B. Comply with ACI 306.1 for cold-weather protection and ACI 301 for hot-weather protection during curing.
- C. Evaporation Retarder: Apply evaporation retarder to concrete surfaces if hot, dry, or windy conditions cause moisture loss approaching 0.2 lb/sq. ft. x h before and during finishing operations. Apply according to manufacturer's written instructions after placing, screeding, and bull floating or darbying concrete but before float finishing.
- D. Cure concrete in accordance with ACI 308.1 immediately after finishing concrete but not before free water has disappeared from concrete surface.
- E. Curing Compound: Apply immediately after final finishing. Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three hours after initial application. Maintain continuity of coating, and repair damage during curing period.
  - 1. Cure integrally colored concrete with a pigmented curing compound.
  - 2. Cure concrete finished with pigmented mineral dry-shake hardener with a pigmented curing compound.
  - 3. Coordinate selection of curing compounds for compatibility with color pigment, or pigmented mineral dry-shake hardener.

### **3.10 PAVING TOLERANCES**

- A. Comply with tolerances in ACI 117 and as follows:
  - 1. Elevation: 3/4 inch (19 mm).
  - 2. Thickness: Plus 3/8 inch (10 mm), minus 1/4 inch (6 mm).
  - 3. Surface: Gap below 10-foot- (3-m-) long, unlevelled straightedge not to exceed 1 1/2 inch (38 mm).
  - 4. Lateral Alignment and Spacing of Dowels: 1 inch (25 mm).
  - 5. Vertical Alignment of Dowels: 1/4 inch (6 mm).

6. Alignment of Dowel-Bar End Relative to Line Perpendicular to Paving Edge: 1/4 inch per 12 inches (6 mm per 300 mm) of dowel.
7. Joint Spacing: 3 inches (75 mm).
8. Contraction Joint Depth: Plus 1/4 inch (6 mm), no minus.
9. Joint Width: Plus 1/8 inch (3 mm), no minus.

### **3.11 FIELD QUALITY CONTROL**

- A. Testing Agency: Owner will engage a qualified testing agency to perform tests and inspections.
- B. Testing Services: Testing of composite samples of fresh concrete obtained according to ASTM C 172/C 172M shall be performed according to the following requirements:
  1. Testing Frequency: Obtain at least one composite sample for each 5000 sq. ft. or fraction thereof of each concrete mixture placed each day.
    - a. When frequency of testing will provide fewer than five compressive-strength tests for each concrete mixture, testing shall be conducted from at least five randomly selected batches or from each batch if fewer than five are used.
  2. Slump: ASTM C 143/C 143M; one test at point of placement for each composite sample, but not less than one test for each day's pour of each concrete mixture. Perform additional tests when concrete consistency appears to change.
  3. Air Content: ASTM C 231/C 231M, pressure method; one test for each composite sample, but not less than one test for each day's pour of each concrete mixture.
  4. Concrete Temperature: ASTM C 1064/C 1064M; one test hourly when air temperature is 40 deg F and below and when it is 80 deg F and above, and one test for each composite sample.
  5. Compression Test Specimens: ASTM C 31/C 31M; cast and laboratory cure one set of three standard cylinder specimens for each composite sample.
  6. Compressive-Strength Tests: ASTM C 39/C 39M; test one specimen at seven days and two specimens at 28 days.
    - a. A compressive-strength test shall be the average compressive strength from two specimens obtained from same composite sample and tested at 28 days.
- C. Strength of each concrete mixture will be satisfactory if average of any three-consecutive compressive- strength tests equals or exceeds specified compressive strength and no compressive-strength test value falls below specified compressive strength by more than 500 psi.
- D. Test results shall be reported in writing to Architect, concrete manufacturer, and Contractor within 48 hours of testing. Reports of compressive-strength tests shall contain project identification name and number, date of concrete placement, name of concrete testing and inspecting agency, location of concrete batch in Work, design compressive strength at 28 days, concrete mixture proportions and materials, compressive breaking strength, and type of break for both 7- and 28-day tests.
- E. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Architect but will not be used as sole basis for approval or rejection of concrete.
- F. Additional Tests: Testing and inspecting agency shall make additional tests of concrete when test results indicate that slump, air entrainment, compressive strengths, or other requirements have not been met, as directed by Architect.
- G. Decorative concrete paving will be considered defective if it does not pass tests and inspections.
- H. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
- I. Prepare test and inspection reports.

### **3.12 REPAIR AND PROTECTION**

- A. Remove and replace decorative concrete paving that is broken or damaged or does not comply with requirements in this Section. Remove work in complete sections from joint to joint unless otherwise approved by Architect.

- B. Detailing: Grind concrete "squeeze" left from tool placement. Color ground areas with slurry of color hardener mixed with water and bonding agent. Remove excess release agent with high-velocity blower.
- C. Protect decorative concrete paving from damage. Exclude traffic from paving for at least 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 decorative concrete paving free of stains, discoloration, dirt, and other foreign material. Sweep paving not more than two days before date scheduled for Substantial Completion inspections.

**END OF SECTION 32 1316**

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**SECTION 32 9210  
LANDSCAPING - LAWN**

**PART 1 GENERAL**

**1.01 SECTION INCLUDES**

- A. The Contractor for the work shall be held to have read all of the Bidding Requirements, the Proposal Forms, the General Conditions of the Contract, the Supplementary General Conditions and Division 1 and in the execution of the work, he will be bound by all of the conditions and requirements therein.

**1.02 RELATED SECTIONS**

- A. Section 31 2323 - Fill: Topsoil material.

**1.03 JOB CONDITIONS**

- A. Seeding shall be done between periods of May 1st to June 15th, or August 15 to October 1st.

**1.04 PRODUCT DELIVERY**

- A. Deliver all materials to the site in original, unopened containers, bearing manufacturer's analysis.

**1.05 SOIL ANALYSIS**

- A. The Contractor's shall obtain Soil Test Results to determining application rates.

**PART 2 PRODUCTS**

**2.01 TOPSOIL**

- A. For topsoil requirements see Section 31 2323 - Fill.

**2.02 FERTILIZER**

- A. Fertilizer: 26-4-12 Super Turf Fertilizer by Scotts or approved equal, recommended for grass, with fifty percent of the elements derived from organic sources; of proportion necessary to eliminate any deficiencies of topsoil, to the following proportions:
1. Nitrogen: 26 percent.
  2. Phosphoric Acid: 4 percent.
  3. Soluble Potash: 12 percent.
  4. Sulfur: 12 percent.
- B. Uniform in composition, dry and free flowing.

**2.03 COMBINATION WEED KILLER AND FERTILIZER**

- A. Commercial weed and feed containing by weight 20% nitrogen, 6% phosphorous and 4% potash.

**2.04 LAWN SEED MIX**

A. Seed Variety	% By Weight	Purity	Germination
Adobe Tall Fescue	49%	95	90
Aztec Tall Fescue	24.6%	95	90
Mirage Tall Fescue	24.6%	95	90
Inert Matter	1.5%		
Weeds, Crop Seeds	0.3%		

- B. Acceptable Manufacturers:
1. Spirit by Scott's
  2. Or equal.

**2.05 STRAW MULCH**

- 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. Materials which are low grade and unfit for farm use such as "U.S. Sample Grade" will be acceptable. Base weight calculations on maximum moisture content of 15 percent.

## **2.06 HYDRO-SEEDING MULCH**

- A. Acceptable Products:
  - 1. Turf-Fiber by Weyerhaeuser Co.
- B. Materials:
  - 1. Wood Cellulose fiber with green vegetable oil dye.

## **PART 3 EXECUTION**

### **3.01 FINE GRADING**

- A. Disc, harrow or otherwise completely pulverized to a minimum depth of three inches where topsoil has been spread and to a depth of six inches where no grade change is required, but new lawn is required.
- B. Remove all surface stone and other undesirable material over 1/4" in greatest dimension.
- C. Fine grade area to be seeded by machine or hand rakes prior to sowing seed.
- D. Carefully round tops and bottoms of slopes to provide smooth transition curves.

### **3.02 FERTILIZING**

- A. Uniformly distribute fertilizer at the rate specified by the manufacturer and work into the top
  - 1. 3" of soil prior to fine grading.

### **3.03 SEEDING**

- A. Quantity: 6lbs. per 1,000sf.
- B. Method:
  - 1. Please seed to a depth not exceeding 1/4" by mechanical drill or seeders.
  - 2. Make two passes with seeder over all areas, the second pass at right angle to the direction of the first. Use one-half seed for each pass.
  - 3. Lightly roll the seeded area and water with a fine spray.
    - a. Weight of roller - not more than 65 lbs. nor less than 40 lbs. per foot of width.
- C. Mulching:
  - 1. Uniformly spread mulch over entire seeded area, at the rate of 2 tons per acre, immediately after rolling and watering.
  - 2. Remove wind swept mulch piles as necessary to prevent damage to grass.

### **3.04 HYDRO SEEDING, FERTILIZING AND MULCHING**

- A. Apply seed, fertilizer and mulch uniformly over the entire area, as visually determined by the intensity of the green vegetable dye.
- B. Apply hydro-seeder at the following mix per acre:
  - 1. Seed: 6lbs. per 1,000sf.
  - 2. Fertilizer: As recommended by the manufacturer.
  - 3. Mulch: 1200 pounds.
  - 4. Water: 1000 pounds.
- C. All overspray from application of hydro-seed mix to pavements, building facades, and site amenities is to be cleaned off immediately before material is allowed to dry.

### **3.05 MAINTENANCE**

- A. The Contractor shall be responsible for the seeded areas for one complete growing season and shall protect, maintain and irrigate as required to produce a durable uniform stand of grass.
- B. 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.
- C. Neatly trim edges and hand clip where necessary.
- D. Water to prevent grass and soil from drying out. The Contractor shall provide at a minimum 1/4 inch of water per every 2 days during germination period and 1 inch per week for 8 weeks. The Contractor shall be responsible for providing the water necessary for irrigation. The Contractor shall not obtain water from the Owner for irrigation purposes unless written authorization from the the Owner is obtained.
- E. Roll surface to remove minor depressions or irregularities.



- F. Control growth of weeds. Apply broadleaf herbicides and fertilizer combination in accordance with turf field specialist.
- G. Immediately reseed areas which show bare spots.
- H. Areas which have been damaged through any cause prior to final inspection, and areas failing to receive a uniform application at the specified rate, shall be reseeded, refertilized and mulched at the Contractor's expense. The maintenance procedures as outlined above will continue for defective areas until all work is deemed satisfactory and accepted.
- I. Protect seeded areas with warning signs during maintenance period.

### **3.06 CLEAN-UP**

- A. Remove from the site and dispose of all sticks, rubbish, stones and other debris collected during raking and other operations.

**END OF SECTION**

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## **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. Division 31 0000 - Earthwork
- B. Section 32 9210 - Lawns

#### **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 33 00 - 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 77 00.

#### **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.
  - 2. Polyethylene Edging: Heavy duty, commercial grade, pure black polyethylene, weighing 5 pounds per 20 foot length; 5¼" depth. Provide connecting plugs, steel spikes and overlap connections. Similar to "Edg-King Lawn Edging" by Oly-Ola Sales, Inc., Villa Park, 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 32 93 00**