Volume 1 of 1

BID SET ISSUANCE : AUGUST 2, 2022

PROJECT MANUAL

Nanuet Union Free School District

Nanuet High School Elevator Addition

103 Church Street, Nanuet, NY 10954

SED Control Numbers:
Nanuet HS School: 50-01-08-03-0-003-032

Architect: KSQ Design dba KSQ Architects P.C. 215 West 40th Street, 15th Floor New York, NY 10018 T. 646.435.0660	**MEP Engineer**: Sage Engineering LLP 9 Columbia Circle Albany, NY 12203 T. 518.453.6091
Civil Engineer / Landscape Architect: LaBella Associates 4 British American Boulevard Latham, NY 12110 T. 518.266.7373	**Environmental Engineer**: Green Path Environmental, INC 79 Grove Street, Suite 1 Staten Island, NY 10308 T. 347.276.2339
Structural Engineer: Clapper Structural Engineering 160 Partition Street Saugerties, NY 12477 T. 845.943.9601	**Construction Manager**: Jacobs One Penn Plaza 54th Floor, Suite 5420 New York, NY 10119 T. 646.908.6550
Owner: Nanuet Union Free School District 101 Church Street Nanuet, NY 10308 T. 845.343.1481	**Design conforms to applicable provisions of the New York State Uniform Fire Prevention and Building Code, New York State Energy Conservation Construction Code, and NY State Education Department Building Standards**

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Project Name: **Nanuet UFSD**
Nanuet High School Elevator Addition

Contractor Name: _____

Respond to: _____

Fax Number: _____

Address: _____

_____

Subject: _____

Drawing/Reference No.: _____

Request: _____

_____

_____

_____

Reply: _____

_____

_____

_____

_____

By: _____ Date: _____

Request to: **KSQ Design**
Attn: Ofe Clarke
Email: oclarke@ksq.design

END OF SECTION 00 0301

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SECTION 00 0300 - NOTICE TO BIDDERS

PART 1 - GENERAL

1.1 The Nanuet Union Free School District, Rockland County, NY, invites bid proposals for the following:

A. Nanuet High School Elevator Addition Project

1.2 CONTRACT:

A. Separate Prime Contracts will be let for:

1. General Construction – (GC-01)
2. Electrical Contract #1– (EC-01)
3. Mechanical/Plumbing Contract #1– (MC-01)

1.3 SCHEDULE:

A. Bidding Documents Available:

1. At **12:00 p.m. on August 2, 2022** Bidding Documents for the proposed project will be on file and publicly exhibited online at **www.usinglesspaper.com**
2. Copies of said Bidding Documents can be obtained from **Rev Plans, 28 Church Street, Unit #7, Warwick, NY 10990** or **www.usinglesspaper.com**
3. Digital Download: Bid documents can be downloaded for **Forty Nine Dollars ($49.00).** Non-refundable fee payable by credit card from www.usinglesspaper.com .
4. Hard Copy Drawings: $ 100 refundable upon return of set in good condition. Make checks or Money Orders payable to Nanuet Union Free School District.
5. Any bidder requiring documents to be shipped shall make arrangements with the printer and pay for all packaging and shipping costs.
6. All bid addenda will be transmitted to registered plan holders via email and will be available at **www.usinglesspaper.com**. Plan holders who have paid for hard copies of the Bidding Documents will need to make the determination if hard copies of the addenda are required for their use, and coordinate directly with the printer for hard copies of addenda to be issued. There will be no charge for registered plan holders to obtain hard copies of the bid addenda.

B. Pre-Bid Conference:

1. Date & Time: Tuesday, August 16, 2022 2:00 PM
2. Location: Nanuet Senior High School
3. Address: 103 Church street, Nanuet, NY 10954

4. Prospective bidders are strongly encouraged to attend.

C. Bid Due Date:

1. Sealed proposals will be received as indicated below, and at that time and place will be publicly opened and read aloud in the administrative conference room. All bidders shall comply with the General Municipal Law (103).

2. Date: Friday, August 26, 2022

3. Time: 1:30 PM (local time)

4. Location: Nanuet Union Free School District Business office

5. Address: 101 Church Street, Nanuet, NY, 10954

D. Request for Information:

1. All pre-bid "Request For Information" (RFI) or Clarification must be submitted NO LATER THAN **Monday, August 22, 2022 by 12:00pm (noon)**

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 PROVISIONS:

A. Wages to workers, laborers and mechanics employed to work on this project, shall be paid in accordance with Section 220 of the Labor Law, and in accordance with the Prevailing Rate Schedules **(PRC #** found in the Project Manual**)** and proof of such payments will be required.

B. Each bid for <u>each</u> Contract must be identified, in typed format, on the outside of a sealed manila envelope, with the name and address of the bidder and designated as bid for the Project titled above and appropriate Contract number and name titled above. The Nanuet Union Free School District is not responsible for bids opened prior to the bid opening if bid contract number and opening date do not appear on the envelope. Bids opened prior to date and time indicated are invalid. The bidder assumes the risk of any delay in the mail, or in the handling of the mail by employees of the Nanuet Union Free School District, as well as improper hand delivery.

C. Each proposal must be accompanied by a certified check in the sum of five percent (5%) of the amount of the bid, drawn upon a National or State Bank or Trust Company, payable to the order of the Nanuet Union Free School District, or a bond from a surety licensed to practice business in the State of New York with sufficient sureties in a penal sum equal to five percent (5%) of the bid, conditioned that if this bid is accepted, successful bidder will enter into a contract for the same and that he will execute such further security as may be required for the performance of the contract.

D. A separate Performance Bond, equal to one hundred percent (100%) of the contract amount will also be required of the successful bidders, and the bond shall be from a surety licensed to practice business in the State of New York, satisfactory to the School Board.

E. A separate Payment Bond, equal to one hundred percent (100%) of the contract sum will also be required of the successful bidders, and the bond shall be from a surety licensed to practice business in the State of New York, satisfactory to the School Board.

F. The bidders to whom the above referenced contracts may be awarded, shall within seven (7) days after the date of notification of the acceptance of their proposal, provide insurance and security as required by the above referenced contracts in a form acceptable by the Owner. In case of the bidders' failure to do so, or in case of the bidders' failure to give further security as herein prescribed, the bidders will be considered as having abandoned the same, and the certified check or other bid security accompanying the proposal shall be forfeited to the School District.

G. Each bidder shall agree to hold his/her bid price for forty -five (45) days after the formal bid opening

H. By Order of the Nanuet Union Free School District

1. Dated: August 2, 2022

2. Mr. Mario Spagnuolo, Attorney/Asst. Superintendent of Business

END OF SECTION 00 03 00

AIA® Document A701™ – 2018

Instructions to Bidders

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

NANUET UNION FREE SCHOOL DISTRICT
NANUET HIGH SCHOOL ELEVATOR ADDITION
SED#: 50-01-08-03-0-003-032

THE OWNER:
(Name, legal status, address, and other information)

Nanuet Union Free School District
101 Church Street
Nanuet, N.Y. 10954

THE ARCHITECT:
(Name, legal status, address, and other information)

KSQ Architects
215 W 40th Street
Floor 15
New York, NY 10018
T. 914.682.3700

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8 ENUMERATION OF THE PROPOSED CONTRACT DOCUMENTS

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

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

FEDERAL, STATE, AND LOCAL LAWS MAY IMPOSE REQUIREMENTS ON PUBLIC PROCUREMENT CONTRACTS. CONSULT LOCAL AUTHORITIES OR AN ATTORNEY TO VERIFY REQUIREMENTS APPLICABLE TO THIS PROCUREMENT BEFORE COMPLETING THIS FORM.

It is intended that AIA Document G612™–2017, Owner's Instructions to the Architect, Parts A and B will be completed prior to using this document.

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ARTICLE 1 DEFINITIONS

§ 1.1 Bidding Documents include the Bidding Requirements and the Proposed Contract Documents. The Bidding Requirements consist of the advertisement or invitation to bid, Instructions to Bidders, supplementary instructions to bidders, the bid form, and any other bidding forms. The Proposed Contract Documents consist of the unexecuted form of Agreement between the Owner and Contractor and that Agreement's Exhibits, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, all Addenda, and all other documents enumerated in Article 8 of these Instructions.

§ 1.2 Definitions set forth in the General Conditions of the Contract for Construction, or in other Proposed Contract Documents apply to the Bidding Documents.

§ 1.3 Addenda are written or graphic instruments issued by the Architect, which, by additions, deletions, clarifications, or corrections, modify or interpret the Bidding Documents.

§ 1.4 A Bid is a complete and properly executed proposal to do the Work for the sums stipulated therein, submitted in accordance with the Bidding Documents.

§ 1.5 The Base Bid is the sum stated in the Bid for which the Bidder offers to perform the Work described in the Bidding Documents, to which Work may be added or deleted by sums stated in Alternate Bids.

§ 1.6 An Alternate Bid (or Alternate) is an amount stated in the Bid to be added to or deducted from, or that does not change, the Base Bid if the corresponding change in the Work, as described in the Bidding Documents, is accepted.

§ 1.7 A Unit Price is an amount stated in the Bid as a price per unit of measurement for materials, equipment, or services, or a portion of the Work, as described in the Bidding Documents.

§ 1.8 A Bidder is a person or entity who submits a Bid and who meets the requirements set forth in the Bidding Documents.

§ 1.9 A Sub-bidder is a person or entity who submits a bid to a Bidder for materials, equipment, or labor for a portion of the Work.

ARTICLE 2 BIDDER'S REPRESENTATIONS

§ 2.1 By submitting a Bid, the Bidder represents that:

- **.1** the Bidder has read and understands the Bidding Documents;
- **.2** the Bidder understands how the Bidding Documents relate to other portions of the Project, if any, being bid concurrently or presently under construction;
- **.3** the Bid complies with the Bidding Documents;
- **.4** the Bidder has visited the site, become familiar with local conditions under which the Work is to be performed, and has correlated the Bidder's observations with the requirements of the Proposed Contract Documents;
- **.5** the Bid is based upon the materials, equipment, and systems required by the Bidding Documents without exception; and
- **.6** the Bidder has read and understands the provisions for liquidated damages, if any, set forth in the form of Agreement between the Owner and Contractor.

ARTICLE 3 BIDDING DOCUMENTS

§ 3.1 Distribution

§ 3.1.1 Bidders shall obtain complete Bidding Documents, as indicated below, from the issuing office designated in the advertisement or invitation to bid, for the deposit sum, if any, stated therein.
(Indicate how, such as by email, website, host site/platform, paper copy, or other method Bidders shall obtain Bidding Documents.)

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§ 3.1.2 Any required deposit shall be refunded to Bidders who submit a bona fide Bid and return the paper Bidding Documents in good condition within ten days after receipt of Bids. The cost to replace missing or damaged paper documents will be deducted from the deposit. A Bidder receiving a Contract award may retain the paper Bidding Documents, and the Bidder's deposit will be refunded.

§ 3.1.3 Bidding Documents will not be issued directly to Sub-bidders unless specifically offered in the advertisement or invitation to bid, or in supplementary instructions to bidders.

§ 3.1.4 Bidders shall use complete Bidding Documents in preparing Bids. Neither the Owner nor Architect assumes responsibility for errors or misinterpretations resulting from the use of incomplete Bidding Documents.

§ 3.1.5 The Bidding Documents will be available for the sole purpose of obtaining Bids on the Work. No license or grant of use is conferred by distribution of the Bidding Documents.

§ 3.2 Modification or Interpretation of Bidding Documents

§ 3.2.1 The Bidder shall carefully study the Bidding Documents, shall examine the site and local conditions, and shall notify the Architect of errors, inconsistencies, or ambiguities discovered and request clarification or interpretation pursuant to Section 3.2.2.

§ 3.2.2 Requests for clarification or interpretation of the Bidding Documents shall be submitted by the Bidder in writing and shall be received by the Architect at least seven days prior to the date for receipt of Bids.
(Indicate how, such as by email, website, host site/platform, paper copy, or other method Bidders shall submit requests for clarification and interpretation.)

§ 3.2.3 Modifications and interpretations of the Bidding Documents shall be made by Addendum. Modifications and interpretations of the Bidding Documents made in any other manner shall not be binding, and Bidders shall not rely upon them.

§ 3.3 Substitutions

§ 3.3.1 The materials, products, and equipment described in the Bidding Documents establish a standard of required function, dimension, appearance, and quality to be met by any proposed substitution.

§ 3.3.2 Substitution Process

§ 3.3.2.1 Written requests for substitutions shall be received by the Architect at least ten days prior to the date for receipt of Bids. Requests shall be submitted in the same manner as that established for submitting clarifications and interpretations in Section 3.2.2.

§ 3.3.2.2 Bidders shall submit substitution requests on a Substitution Request Form if one is provided in the Bidding Documents.

§ 3.3.2.3 If a Substitution Request Form is not provided, requests shall include (1) the name of the material or equipment specified in the Bidding Documents; (2) the reason for the requested substitution; (3) a complete description of the proposed substitution including the name of the material or equipment proposed as the substitute, performance and test data, and relevant drawings; and (4) any other information necessary for an evaluation. The request shall include a statement setting forth changes in other materials, equipment, or other portions of the Work, including changes in the work of other contracts or the impact on any Project Certifications (such as LEED), that will result from incorporation of the proposed substitution.

§ 3.3.3 The burden of proof of the merit of the proposed substitution is upon the proposer. The Architect's decision of approval or disapproval of a proposed substitution shall be final.

§ 3.3.4 If the Architect approves a proposed substitution prior to receipt of Bids, such approval shall be set forth in an Addendum. Approvals made in any other manner shall not be binding, and Bidders shall not rely upon them.

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§ 3.3.5 No substitutions will be considered after the Contract award unless specifically provided for in the Contract Documents.

§ 3.4 Addenda

§ 3.4.1 Addenda will be transmitted to Bidders known by the issuing office to have received complete Bidding Documents.

(Indicate how, such as by email, website, host site/platform, paper copy, or other method Addenda will be transmitted.)

§ 3.4.2 Addenda will be available where Bidding Documents are on file.

§ 3.4.3 Addenda will be issued no later than four days prior to the date for receipt of Bids, except an Addendum withdrawing the request for Bids or one which includes postponement of the date for receipt of Bids.

§ 3.4.4 Prior to submitting a Bid, each Bidder shall ascertain that the Bidder has received all Addenda issued, and the Bidder shall acknowledge their receipt in the Bid.

ARTICLE 4 BIDDING PROCEDURES

§ 4.1 Preparation of Bids

§ 4.1.1 Bids shall be submitted on the forms included with or identified in the Bidding Documents.

§ 4.1.2 All blanks on the bid form shall be legibly executed. Paper bid forms shall be executed in a non-erasable medium.

§ 4.1.3 Sums shall be expressed in both words and numbers, unless noted otherwise on the bid form. In case of discrepancy, the amount entered in words shall govern.

§ 4.1.4 Make no erasures, cross-outs, whiteouts, write-overs, obliterations, or changes of any kind in the Bid Form phraseology, in the entry of unit prices, or anywhere on the Bid form. Fill in all blanks spaces legibly. An illegible entry may disqualify the bid in its entirety. If a mistake is made, use a new Bid Form. No post bid meetings will be afforded to any bidder to explain or clarify illegible or changed entries.

§ 4.1.5 All requested Alternates shall be bid. If no change in the Base Bid is required, enter "No Change" or as required by the bid form.

§ 4.1.6 Where two or more Bids for designated portions of the Work have been requested, the Bidder may, without forfeiture of the bid security, state the Bidder's refusal to accept award of less than the combination of Bids stipulated by the Bidder. The Bidder shall neither make additional stipulations on the bid form nor qualify the Bid in any other manner.

§ 4.1.7 Each copy of the Bid shall state the legal name and legal status of the Bidder. As part of the documentation submitted with the Bid, the Bidder shall provide evidence of its legal authority to perform the Work in the jurisdiction where the Project is located. Each copy of the Bid shall be signed by the person or persons legally authorized to bind the Bidder to a contract. A Bid by a corporation shall further name the state of incorporation and have the corporate seal affixed. A Bid submitted by an agent shall have a current power of attorney attached, certifying the agent's authority to bind the Bidder.

§ 4.1.8 A Bidder shall incur all costs associated with the preparation of its Bid.

§ 4.2 Bid Security

§ 4.2.1 Each Bid shall be accompanied by a bid security in the form and amount required if so stipulated in the Instructions to Bidders. The Bidder pledges to enter into a Contract with the Owner on the terms stated in the Bid and will, if required, furnish bonds covering the faithful performance of the Contract and payment of all obligations arising thereunder. Should the Bidder refuse to enter into such Contract or fail to furnish such bonds if required, the amount of the bid security shall be forfeited to the Owner as liquidated damages, not as a penalty. Each Bid shall be accompanied by the following bid security:

(Insert the form and amount of bid security.)

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Five Percent (5%) of the contract sum of work

§ 4.2.2 The Bidder pledges to enter into a Contract with the Owner on the terms stated in the Bid and shall, if required, furnish bonds covering the faithful performance of the Contract and payment of all obligations arising thereunder. Should the Bidder refuse to enter into such Contract or fail to furnish such bonds if required, the amount of the bid security shall be forfeited to the Owner as liquidated damages, not as a penalty. In the event the Owner fails to comply with Section 6.2, the amount of the bid security shall not be forfeited to the Owner.

§ 4.2.3 If a surety bond is required as bid security, it shall be written on AIA Document A310™, Bid Bond, unless otherwise provided in the Bidding Documents. The attorney-in-fact who executes the bond on behalf of the surety shall affix to the bond a certified and current copy of an acceptable power of attorney. The Bidder shall provide surety bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

§ 4.2.4 The Owner will have the right to retain the bid security of Bidders to whom an award is being considered until (a) the Contract has been executed and bonds, if required, have been furnished; (b) the specified time has elapsed so that Bids may be withdrawn; or (c) all Bids have been rejected. However, if no Contract has been awarded or a Bidder has not been notified of the acceptance of its Bid, a Bidder may, beginning days after the opening of Bids, withdraw its Bid and request the return of its bid security.

§ 4.3 Submission of Bids

§ 4.3.1 A Bidder shall submit its Bid as indicated below:
(Indicate how, such as by website, host site/platform, paper copy, or other method Bidders shall submit their Bid.)

Paper Copy

§ 4.3.2 Paper copies of the Bid, the bid security, and any other documents required to be submitted with the Bid shall be enclosed in a sealed opaque envelope. The envelope shall be addressed to the party receiving the Bids and shall be identified with the Project name, the Bidder's name and address, and, if applicable, the designated portion of the Work for which the Bid is submitted. If the Bid is sent by mail, the sealed envelope shall be enclosed in a separate mailing envelope with the notation "SEALED BID ENCLOSED" on the face thereof.

§ 4.3.3 Bids shall be submitted by the date and time and at the place indicated in the invitation to bid. Bids submitted after the date and time for receipt of Bids, or at an incorrect place, will not be accepted.

§ 4.3.4 The Bidder shall assume full responsibility for timely delivery at the location designated for receipt of Bids.

§ 4.3.5 A Bid submitted by any method other than as provided in this Section 4.3 will not be accepted.

§ 4.4 Modification or Withdrawal of Bid

§ 4.4.1 Prior to the date and time designated for receipt of Bids, a Bidder may submit a new Bid to replace a Bid previously submitted, or withdraw its Bid entirely, by notice to the party designated to receive the Bids. Such notice shall be received and duly recorded by the receiving party on or before the date and time set for receipt of Bids. The receiving party shall verify that replaced or withdrawn Bids are removed from the other submitted Bids and not considered. Notice of submission of a replacement Bid or withdrawal of a Bid shall be worded so as not to reveal the amount of the original Bid.

§ 4.4.2 Withdrawn Bids may be resubmitted up to the date and time designated for the receipt of Bids in the same format as that established in Section 4.3, provided they fully conform with these Instructions to Bidders. Bid security shall be in an amount sufficient for the Bid as resubmitted.

§ 4.4.3 After the date and time designated for receipt of Bids, a Bidder who discovers that it made a clerical error in its Bid shall notify the Architect of such error within two days, or pursuant to a timeframe specified by the law of the jurisdiction where the Project is located, requesting withdrawal of its Bid. Upon providing evidence of such error to the reasonable satisfaction of the Architect, the Bid shall be withdrawn and not resubmitted. If a Bid is withdrawn pursuant to this Section 4.4.3, the bid security will be attended to as follows:
(State the terms and conditions, such as Bid rank, for returning or retaining the bid security.)

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ARTICLE 5 CONSIDERATION OF BIDS

§ 5.1 Opening of Bids

If stipulated in an advertisement or invitation to bid, or when otherwise required by law, Bids properly identified and received within the specified time limits will be publicly opened and read aloud. A summary of the Bids may be made available to Bidders.

§ 5.2 Rejection of Bids

Unless otherwise prohibited by law, the Owner shall have the right to reject any or all Bids.

§ 5.3 Acceptance of Bid (Award)

§ 5.3.1 It is the intent of the Owner to award a Contract to the lowest responsive and responsible Bidder, provided the Bid has been submitted in accordance with the requirements of the Bidding Documents. Unless otherwise prohibited by law, the Owner shall have the right to waive informalities and irregularities in a Bid received and to accept the Bid which, in the Owner's judgment, is in the Owner's best interests.

§ 5.3.2 Unless otherwise prohibited by law, the Owner shall have the right to accept Alternates in any order or combination, unless otherwise specifically provided in the Bidding Documents, and to determine the lowest responsive and responsible Bidder on the basis of the sum of the Base Bid and Alternates accepted.

§5.3.3 A tie-bid is defined as an instance where bids are received from two or more Bidders who are the low responsive Bidders, and their offers are identical. It is the policy of the District to settle the outcome of tie-bids by either drawing a name from a hat or flipping a coin within 24 hours of the bid opening. All affected firms will be notified of the tie, the time and place of the resolution of the tie and shall be invited to witness the outcome. Attendance is not mandatory. The drawing/flip will be held at the District Administration Office. Two impartial witnesses will be provided and shall be present. All attendees will acknowledge the results of the tie-breaker on the bid tabulation sheet. All firms affected by the bids will be notified of the results. The results pursuant to this provision shall be considered final.

ARTICLE 6 POST-BID INFORMATION

§ 6.1 Contractor's Qualification Statement

Bidders to whom award of a Contract is under consideration shall submit to the Architect, upon request and within the timeframe specified by the Architect, a properly executed AIA Document A305™, Contractor's Qualification Statement, unless such a Statement has been previously required and submitted for this Bid.

§ 6.2 The apparent low bidder must submit the required pre-award submittal package described below to the Owner and Architect within 48 hours after the bids are opened.

Nanuet Union Free School District
Rudy Villanyi, Director of School Facilities
Email: rvillanyi@nanuetsd.org

KSQ Design
Ofe Clarke
Email: oclarke@ksq.design
215 W 40th Street
15th Floor
New York, NY 10018

Submissions must be emailed and must include the Project Name of this contract in the Subject Line of the Pre-Award submission email.

(1) Pre-award Submittal Package
  (i) Fully execute AIA A305 Contractors Qualification Statement
  (ii) Most recent financial statement by CPM

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(iii) References and experience:

1. List of all past contracts with K12 Public School Districts
2. Provide three (3) references (Name, Title, and Phone Number) associated with three (3) different projects (public or private sector) of similar scope and size to the one identified in this contract. Additionally, include the names of two major suppliers used for each of these three (3) projects.

(2) Workforce and Work Plan – Provide a detailed written Work Plan which shall demonstrate the contractor's understanding of overall project scope and shall include, but not be limited, to the following:

(i) Sequential listing of specific project activities required to successfully complete the Work of the contract.

1. Include Critical Milestones,
2. Include phasing of the Work, if required.
3. Include listing of long lead items.
4. Impact of weather and restricted work period(s).
5. Statement that the project can be completed in established time.

(ii) Resumes for Contractor's proposed supervisory staff, including qualifications for specialized expertise or any certification(s) required to perform the Work.

(iii) Names of proposed major sub-contractors (more than 15% of the bid amount) and a listing of the related trade of work and value.

(iv) Any special coordination requirements with other trades.

(v) Any special storage and staging requirements for construction materials.

(vi) Any other special requirements.

(3) Detailed Cost Estimate:

(i) A copy of a Detailed Cost Estimate outlined in CSI format.

§ 6.3 Submittals

§ 6.3.1 After notification of selection for the award of the Contract, the Bidder shall, as soon as practicable or as stipulated in the Bidding Documents, submit in writing to the Owner through the Architect:

.1 a designation of the Work to be performed with the Bidder's own forces;

.2 names of the principal products and systems proposed for the Work and the manufacturers and suppliers of each; and

.3 names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for the principal portions of the Work.

§ 6.3.2 The Bidder will be required to establish to the satisfaction of the Architect and Owner the reliability and responsibility of the persons or entities proposed to furnish and perform the Work described in the Bidding Documents.

§ 6.3.3 Prior to the execution of the Contract, the Architect will notify the Bidder if either the Owner or Architect, after due investigation, has reasonable objection to a person or entity proposed by the Bidder. If the Owner or Architect has reasonable objection to a proposed person or entity, the Bidder may, at the Bidder's option, withdraw the Bid or submit an acceptable substitute person or entity. The Bidder may also submit any required adjustment in the Base Bid or Alternate Bid to account for the difference in cost occasioned by such substitution. The Owner may accept the adjusted bid price or disqualify the Bidder. In the event of either withdrawal or disqualification, bid security will not be forfeited.

§ 6.3.4 Persons and entities proposed by the Bidder and to whom the Owner and Architect have made no reasonable objection must be used on the Work for which they were proposed and shall not be changed except with the written consent of the Owner and Architect.

ARTICLE 7 PERFORMANCE BOND AND PAYMENT BOND

§ 7.1 Bond Requirements

§ 7.1.1 If stipulated in the Bidding Documents, the Bidder shall furnish bonds covering the faithful performance of the Contract and payment of all obligations arising thereunder.

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§ 7.1.2 If the furnishing of such bonds is stipulated in the Bidding Documents, the cost shall be included in the Bid. If the furnishing of such bonds is required after receipt of bids and before execution of the Contract, the cost of such bonds shall be added to the Bid in determining the Contract Sum.

§ 7.1.3 The Bidder shall provide surety bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

§ 7.1.4 Unless otherwise indicated below, the Penal Sum of the Payment and Performance Bonds shall be the amount of the Contract Sum.
(If Payment or Performance Bonds are to be in an amount other than 100% of the Contract Sum, indicate the dollar amount or percentage of the Contract Sum.)

§ 7.2 Time of Delivery and Form of Bonds
§ 7.2.1 The Bidder shall deliver the required bonds to the Owner not later than three days following the date of execution of the Contract. If the Work is to commence sooner in response to a letter of intent, the Bidder shall, prior to commencement of the Work, submit evidence satisfactory to the Owner that such bonds will be furnished and delivered in accordance with this Section 7.2.1.

§ 7.2.2 Unless otherwise provided, the bonds shall be written on AIA Document A312, Performance Bond and Payment Bond.

§ 7.2.3 The bonds shall be dated on or after the date of the Contract.

§ 7.2.4 The Bidder shall require the attorney-in-fact who executes the required bonds on behalf of the surety to affix to the bond a certified and current copy of the power of attorney.

ARTICLE 8 ENUMERATION OF THE PROPOSED CONTRACT DOCUMENTS
§ 8.1 Copies of the proposed Contract Documents have been made available to the Bidder and consist of the following documents:

.1 AIA Document A101™–2017, Standard Form of Agreement Between Owner and Contractor, unless otherwise stated below.
(Insert the complete AIA Document number, including year, and Document title.)

.2 AIA Document A101™–2017, Exhibit A, Insurance and Bonds, unless otherwise stated below.
(Insert the complete AIA Document number, including year, and Document title.)

.3 AIA Document A201™–2007, General Conditions of the Contract for Construction, unless otherwise stated below.
(Insert the complete AIA Document number, including year, and Document title.)

.4 AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, dated as indicated below:
(Insert the date of the E203-2013.)

.5 Drawings

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Number	Title	Date

.6 Specifications

Section	Title	Date	Pages

.7 Addenda:

Number	Date	Pages

.8 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.)

[ ] The Sustainability Plan:

Title	Date	Pages

[ ] Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages

.9 Other documents listed below:
(List here any additional documents that are intended to form part of the Proposed Contract Documents.)

ARTICLE 9 TAXES

§ 9.1 SALES TAX

§ 9.1.1 State and local sales tax on materials incorporated into the construction shall not be included in the Bid. Owner is a tax-exempt organization and will take title to materials used in the Project in order to permit tax exemption.

§ 9.1.2 Owner will furnish certificate with Owner's Tax Exemption Number to successful Bidder for use in purchasing tangible personal property required for Project.

§ 9.1.3 Tax Exemption does not apply to machinery, equipment, tools, or other items purchased, leased, rented, or otherwise acquired for contractor's use even though machinery, equipment, tools, or other items are used either in part or entirely on Work. Exemption shall apply only to materials fully incorporated into Work of Contract as accepted and approved by Architect.

ARTICLE 10 BONDS

§10.1 PERFORMANCE BOND AND PAYMENT BOND

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§ 10.1.1 Successful Bidder shall furnish to Owner bonds covering faithful performance of Contract and payment obligations there under.

ARTICLE 11 EXAMINATION OF THE SITE

§11.1 PRIOR ARRANGEMENTS

§ 11.1.1 Bidders may visit the existing facilities by making prior arrangements with Mr. Rudy Villanyi, Director of Facilities, telephone 845-627-9852.

ARTICLE 12 SUBSTITUTIONS OF MATERIALS AND EQUIPMENT

§12.1 EQUIVALENCY CLAUSE

§ 12.1.1 Whenever a material, article, or piece of equipment is identified on the Drawings or in the Specifications by reference to manufacturers' or vendors' names, trade 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 will 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, and function. It shall not be purchased or installed by the Contractor without the Architect's written approval.

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Additions and Deletions Report for
AIA® Document A701™ – 2018

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 16:05:52 ET on 07/28/2022.

PAGE 1

NANUET UNION FREE SCHOOL DISTRICT
NANUET HIGH SCHOOL ELEVATOR ADDITION
SED#: 50-01-08-03-0-003-032

...

Nanuet Union Free School District
101 Church Street
Nanuet, N.Y. 10954

...

KSQ Architects
215 W 40th Street
Floor 15
New York, NY 10018
T. 914.682.3700
PAGE 4

§ 4.1.4 ~~Edits to entries made on paper bid forms must be initialed by the signer of the Bid.~~Make no erasures, cross-outs, whiteouts, write-overs, obliterations, or changes of any kind in the Bid Form phraseology, in the entry of unit prices, or anywhere on the Bid form. Fill in all blanks spaces legibly. An illegible entry may disqualify the bid in its entirety. If a mistake is made, use a new Bid Form. No post bid meetings will be afforded to any bidder to explain or clarify illegible or changed entries.

...

§ 4.2.1 Each Bid shall be accompanied by a bid security in the form and amount required if so stipulated in the Instructions to Bidders. The Bidder pledges to enter into a Contract with the Owner on the terms stated in the Bid and will, if required, furnish bonds covering the faithful performance of the Contract and payment of all obligations arising thereunder. Should the Bidder refuse to enter into such Contract or fail to furnish such bonds if required, the amount of the bid security shall be forfeited to the Owner as liquidated damages, not as a penalty. Each Bid shall be accompanied by the following bid security:
PAGE 5

Five Percent (5%) of the contract sum of work

...

Paper Copy
PAGE 6

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§5.3.3 A tie-bid is defined as an instance where bids are received from two or more Bidders who are the low responsive Bidders, and their offers are identical. It is the policy of the District to settle the outcome of tie-bids by either drawing a name from a hat or flipping a coin within 24 hours of the bid opening. All affected firms will be notified of the tie, the time and place of the resolution of the tie and shall be invited to witness the outcome. Attendance is not mandatory. The drawing/flip will be held at the District Administration Office. Two impartial witnesses will be provided and shall be present. All attendees will acknowledge the results of the tie-breaker on the bid tabulation sheet. All firms affected by the bids will be notified of the results. The results pursuant to this provision shall be considered final.

...

§ 6.2 ~~Owner's Financial Capability~~The apparent low bidder must submit the required pre-award submittal package described below to the Owner and Architect within 48 hours after the bids are opened.

Nanuet Union Free School District
Rudy Villanyi, Director of School Facilities
Email: rvillanyi@nanuetsd.org

KSQ Design
Ofe Clarke
Email: oclarke@ksq.design
215 W 40th Street
15th Floor
New York, NY 10018

~~A Bidder to whom award of a Contract is under consideration may request in writing, fourteen days prior to the expiration of the time for withdrawal of Bids, that the Owner furnish to the Bidder reasonable evidence that financial arrangements have been made to fulfill the Owner's obligations under the Contract. The Owner shall then furnish such reasonable evidence to the Bidder no later than seven days prior to the expiration of the time for withdrawal of Bids. Unless such reasonable evidence is furnished within the allotted time, the Bidder will not be required to execute the Agreement between the Owner and Contractor.~~Submissions must be emailed and must include the Project Name of this contract in the Subject Line of the Pre-Award submission email.

(1) Pre-award Submittal Package
  (i) Fully execute AIA A305 Contractors Qualification Statement
  (ii) Most recent financial statement by CPM
  (iii) References and experience:
    1. List of all past contracts with K12 Public School Districts
    2. Provide three (3) references (Name, Title, and Phone Number) associated with three (3) different projects (public or private sector) of similar scope and size to the one identified in this contract. Additionally, include the names of two major suppliers used for each of these three (3) projects.

(2) Workforce and Work Plan – Provide a detailed written Work Plan which shall demonstrate the contractor's understanding of overall project scope and shall include, but not be limited, to the following:
  (i) Sequential listing of specific project activities required to successfully complete the Work of the contract.
    1. Include Critical Milestones,
    2. Include phasing of the Work, if required.
    3. Include listing of long lead items.
    4. Impact of weather and restricted work period(s).
    5. Statement that the project can be completed in established time.

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(ii) Resumes for Contractor's proposed supervisory staff, including qualifications for specialized expertise or any certification(s) required to perform the Work.
(iii) Names of proposed major sub-contractors (more than 15% of the bid amount) and a listing of the related trade of work and value.
(iv) Any special coordination requirements with other trades.
(v) Any special storage and staging requirements for construction materials.
(vi) Any other special requirements.

(3) Detailed Cost Estimate:
(i) A copy of a Detailed Cost Estimate outlined in CSI format.

PAGE 8

.3 AIA Document ~~A201™–2017,~~ A201™–2007, General Conditions of the Contract for Construction, unless otherwise stated below.

PAGE 9

ARTICLE 9 TAXES

§ 9.1 SALES TAX

§ 9.1.1 State and local sales tax on materials incorporated into the construction shall not be included in the Bid. Owner is a tax-exempt organization and will take title to materials used in the Project in order to permit tax exemption.

§ 9.1.2 Owner will furnish certificate with Owner's Tax Exemption Number to successful Bidder for use in purchasing tangible personal property required for Project.

§ 9.1.3 Tax Exemption does not apply to machinery, equipment, tools, or other items purchased, leased, rented, or otherwise acquired for contractor's use even though machinery, equipment, tools, or other items are used either in part or entirely on Work. Exemption shall apply only to materials fully incorporated into Work of Contract as accepted and approved by Architect.

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§12.1 EQUIVALENCY CLAUSE

§ 12.1.1 Whenever a material, article, or piece of equipment is identified on the Drawings or in the Specifications by reference to manufacturers' or vendors' names, trade 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 will 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, and function. It shall not be purchased or installed by the Contractor without the Architect's written approval.

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Certification of Document's Authenticity

AIA® Document D401™ – 2003

I, David Short, 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 16:05:52 ET on 07/28/2022 under Order No. 2114341191 from AIA Contract Documents software and that in preparing the attached final document I made no changes to the original text of AIA® Document A701™ – 2018, Instructions to Bidders, 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)

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SECTION 00 3000 - GC BID FORM

CONTRACT 1 – GENERAL CONSTRUCTION PROPOSAL (GC-01):

_____
Bidding Firm Name

To The Board of Education,

The undersigned hereby proposes to furnish all labor, materials, devices, appliances, supplies, equipment, services and other facilities necessary to complete all of the work of the above referenced Contract for the Nanuet Union Free School District, Nanuet, New York, as required by, and in accordance with, the provisions of the Instructions to Bidders, the Supplementary Instructions to Bidders, the Conditions of the Contract, the Drawings and Specifications, all as prepared by KSQ Design designated as Nanuet Union Free School District High School Elevator Addition, dated **August 2, 2022** and that, if this Proposal is accepted, the Undersigned agrees to enter into an Agreement with the owner to perform this work for the lump sum of:

_____

_____Dollars & No Cents

($_____ .00)
herein referred to as the Base Bid.

ALLOWANCES:
The undersigned Contractor has included the Allowance(s) as specified in Section 01 2100 in their Base Bid.

UNIT PRICE:

Unit Price GC-#1: Abatement of ACM Floor Tile (VAT): $_____ Dollars $ No Cents

Unit Price GC- #2: Unsuitable Soil Removal: $_____ Dollars $ No Cents

Unit Price GC- #3: Trench Rock Removal: $_____ Dollars $ No Cents

Unit Price GC- #4: Construction Debris Soil Removal: $_____ Dollars $ No Cents

ALTERNATES: NONE NOTED

ADDENDA:

The undersigned acknowledges the receipt of the following addenda:

Addendum Number	Date	Addendum Number	Date
_____	_____	_____	_____
_____	_____	_____	_____

The Undersigned understands that the Owner reserves the right to accept or reject any or all proposals, but that if notice of the acceptance of the above Proposal is sent via United States Postal Service or any other overnight carrier, with signature required, to the Undersigned within sixty (60) days after the formal opening of Bids or anytime thereafter before this Proposal is withdrawn, the Undersigned will enter into, execute, and deliver a Contract within five (5) days after the date of said notification.

TIME OF COMPLETION:

The Undersigned agrees in the Base Bid to complete the work as per the Milestone Schedule provided in Specifications.

CLOSING: (signature)_____

DATE: _____

BY: _____

TITLE: _____

FIRM: _____

ADDRESS: _____

_____

TELEPHONE NUMBER: _____

FAX NUMBER: _____

CONTACT PERSON: _____

E-MAIL: _____

Submit Bid Form in duplicate.

END OF SECTION 00 3000

SECTION 00 3001 - EC BID FORM

CONTRACT 1 – ELECTRICAL CONSTRUCTION PROPOSAL (EC-01):

_____
Bidding Firm Name

To The Board of Education,

The undersigned hereby proposes to furnish all labor, materials, devices, appliances, supplies, equipment, services and other facilities necessary to complete all of the work of the above referenced Contract for the Nanuet Union Free School District, Nanuet, New York, as required by, and in accordance with, the provisions of the Instructions to Bidders, the Supplementary Instructions to Bidders, the Conditions of the Contract, the Drawings and Specifications, all as prepared by KSQ Design designated as Nanuet Union Free School District High School Elevator Addition, dated **August 2, 2022** and that, if this Proposal is accepted, the Undersigned agrees to enter into an Agreement with the owner to perform this work for the lump sum of:

_____

_____Dollars & No Cents

($_____ .00)
herein referred to as the Base Bid.

ALLOWANCES:
The undersigned Contractor has included the Allowance(s) as specified in Section 01 21 00 in their Base Bid.

UNIT PRICE: NONE NOTED

ALTERNATES: NONE NOTED

ADDENDA:

The undersigned acknowledges the receipt of the following addenda:

Addendum Number	Date	Addendum Number	Date
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

The Undersigned understands that the Owner reserves the right to accept or reject any or all proposals, but that if notice of the acceptance of the above Proposal is sent via United States Postal Service or any other overnight carrier, with signature required, to the Undersigned within sixty (60) days after the formal opening of Bids or anytime thereafter before this Proposal is withdrawn, the Undersigned will enter into, execute, and deliver a Contract within five (5) days after the date of said notification.

TIME OF COMPLETION:

The Undersigned agrees in the Base Bid to complete the work as per the Milestone Schedule provided in Specifications.

CLOSING: (signature)_____

DATE: _____

BY: _____

TITLE: _____

FIRM: _____

ADDRESS: _____

_____

TELEPHONE NUMBER: _____

FAX NUMBER: _____

CONTACT PERSON: _____

E-MAIL: _____

Submit Bid Form in duplicate.

END OF SECTION 00 3002

SECTION 00 3002 - MC BID FORM

CONTRACT 1 – MECHANICAL CONSTRUCTION PROPOSAL (MC-01):

_____
Bidding Firm Name

To The Board of Education,

The undersigned hereby proposes to furnish all labor, materials, devices, appliances, supplies, equipment, services and other facilities necessary to complete all of the work of the above referenced Contract for the Nanuet Union Free School District, Nanuet, New York, as required by, and in accordance with, the provisions of the Instructions to Bidders, the Supplementary Instructions to Bidders, the Conditions of the Contract, the Drawings and Specifications, all as prepared by KSQ Design designated as Nanuet Union Free School District High School Elevator Addition, dated **August 2, 2022** and that, if this Proposal is accepted, the Undersigned agrees to enter into an Agreement with the owner to perform this work for the lump sum of:

_____

_____Dollars & No Cents

($_____ .00)
herein referred to as the Base Bid.

ALLOWANCES:
The undersigned Contractor has included the Allowance(s) as specified in Section 01 2100 in their Base Bid.

UNIT PRICE: NONE NOTED

ALTERNATES: NONE NOTED

ADDENDA:

The undersigned acknowledges the receipt of the following addenda:

Addendum Number	Date	Addendum Number	Date
_____	_____	_____	_____
_____	_____	_____	_____
_____	_____	_____	_____

The Undersigned understands that the Owner reserves the right to accept or reject any or all proposals, but that if notice of the acceptance of the above Proposal is sent via United States Postal Service or any other overnight carrier, with signature required, to the Undersigned within sixty (60) days after the formal opening of Bids or anytime thereafter before this Proposal is withdrawn, the Undersigned will enter into, execute, and deliver a Contract within five (5) days after the date of said notification.

TIME OF COMPLETION:

The Undersigned agrees in the Base Bid to complete the work as per the Milestone Schedule provided in Specifications.

CLOSING: (signature)_____

DATE: _____

BY: _____

TITLE: _____

FIRM: _____

ADDRESS: _____

_____

TELEPHONE NUMBER: _____

FAX NUMBER: _____

CONTACT PERSON: _____

E-MAIL: _____

Submit Bid Form in duplicate.

END OF SECTION 00 3000

DRAFT

AIA® Document A305™ – 2020

Contractor's Qualification Statement

THE PARTIES SHOULD EXECUTE A SEPARATE CONFIDENTIALITY AGREEMENT IF THEY INTEND FOR ANY OF THE INFORMATION IN THIS A305-2020 TO BE HELD CONFIDENTIAL.

SUBMITTED BY:
(Organization name and address.)
« »

SUBMITTED TO:
(Organization name and address.)
« »

TYPE OF WORK TYPICALLY PERFORMED
(Indicate the type of work your organization typically performs, such as general contracting, construction manager as constructor services, HVAC contracting, electrical contracting, plumbing contracting, or other.)
« »

THIS CONTRACTOR'S QUALIFICATION STATEMENT INCLUDES THE FOLLOWING:
(Check all that apply.)

[« »] Exhibit A – General Information
[« »] Exhibit B – Financial and Performance Information
[« »] Exhibit C – Project-Specific Information
[« »] Exhibit D – Past Project Experience
[« »] Exhibit E – Past Project Experience (Continued)

CONTRACTOR CERTIFICATION
The undersigned certifies under oath that the information provided in this Contractor's Qualification Statement is true and sufficiently complete so as not to be misleading.

_____ « »
Organization's Authorized Representative Signature **Date**

« »
_____
Printed Name and Title

NOTARY
State of: « »
County of: « »
Signed and sworn to before me this « » day of « » « »

_____
Notary Signature

My commission expires: « »

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DRAFT AIA® Document A305™ – 2020 Exhibit A

General Information

This Exhibit is part of the Contractor's Qualification Statement, submitted by « » and dated the « » day of « » in the year « »
(In words, indicate day, month and year.)

§ A.1 ORGANIZATION
§ A.1.1 Name and Location
§ A.1.1.1 Identify the full legal name of your organization.

« »

§ A.1.1.2 List all other names under which your organization currently does business and, for each name, identify jurisdictions in which it is registered to do business under that trade name.

« »

§ A.1.1.3 List all prior names under which your organization has operated and, for each name, indicate the date range and jurisdiction in which it was used.

« »

§ A.1.1.4 Identify the address of your organization's principal place of business and list all office locations out of which your organization conducts business. If your organization has multiple offices, you may attach an exhibit or refer to a website.

« »

§ A.1.2 Legal Status
§ A.1.2.1 Identify the legal status under which your organization does business, such as sole proprietorship, partnership, corporation, limited liability corporation, joint venture, or other.

« »

.1 If your organization is a corporation, identify the state in which it is incorporated, the date of incorporation, and its four highest-ranking corporate officers and their titles, as applicable.

« »

.2 If your organization is a partnership, identify its partners and its date of organization.

« »

.3 If your organization is individually owned, identify its owner and date of organization.

« »

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User Notes: (1902915427)

.4 If the form of your organization is other than those listed above, describe it and identify its individual leaders:

« »

§ A.1.2.2 Does your organization own, in whole or in part, any other construction-related businesses? If so, identify and describe those businesses and specify percentage of ownership.

« »

§ A.1.3 Other Information

§ A.1.3.1 How many years has your organization been in business?

« »

§ A.1.3.2 How many full-time employees work for your organization?

« »

§ A.1.3.3 List your North American Industry Classification System (NAICS) codes and titles. Specify which is your primary NAICS code.

« »

§ A.1.3.4 Indicate whether your organization is certified as a governmentally recognized special business class, such as a minority business enterprise, woman business enterprise, service disabled veteran owned small business, woman owned small business, small business in a HUBZone, or a small disadvantaged business in the 8(a) Business Development Program. For each, identify the certifying authority and indicate jurisdictions to which such certification applies.

« »

§ A.2 EXPERIENCE

§ A.2.1 Complete Exhibit D to describe up to four projects, either completed or in progress, that are representative of your organization's experience and capabilities.

§ A.2.2 State your organization's total dollar value of work currently under contract.

« »

§ A.2.3 Of the amount stated in Section A.2.2, state the dollar value of work that remains to be completed:

« »

§ A.2.4 State your organization's average annual dollar value of construction work performed during the last five years.

« »

§ A.3 CAPABILITIES

§ A.3.1 List the categories of work that your organization typically self-performs.

« »

§ A.3.2 Identify qualities, accreditations, services, skills, or personnel that you believe differentiate your organization from others.

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« »

§ A.3.3 Does your organization provide design collaboration or pre-construction services? If so, describe those services.

« »

§ A.3.4 Does your organization use building information modeling (BIM)? If so, describe how your organization uses BIM and identify BIM software that your organization regularly uses.

« »

§ A.3.5 Does your organization use a project management information system? If so, identify that system.

« »

§ A.4 REFERENCES

§ A.4.1 Identify three client references:
(Insert name, organization, and contact information)

« »

§ A.4.2 Identify three architect references:
(Insert name, organization, and contact information)

« »

§ A.4.3 Identify one bank reference:
(Insert name, organization, and contact information)

« »

§ A.4.4 Identify three subcontractor or other trade references:
(Insert name, organization, and contact information)

« »

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DRAFT AIA® Document A305™ – 2020 Exhibit B

Financial and Performance Information

This Exhibit is part of the Contractor's Qualification Statement, submitted by « » and dated the « » day of « » in the year « »
(In words, indicate day, month and year.)

§ B.1 FINANCIAL
§ B.1.1 Federal tax identification number:

« »

§ B.1.2 Attach financial statements for the last three years prepared in accordance with Generally Accepted Accounting Principles, including your organization's latest balance sheet and income statement. Also, indicate the name and contact information of the firm that prepared each financial statement.

« »

§ B.1.3 Has your organization, its parent, or a subsidiary, affiliate, or other entity having common ownership or management, been the subject of any bankruptcy proceeding within the last ten years?

« »

§ B.1.4 Identify your organization's preferred credit rating agency and identification information.
(Identify rating agency, such as Dun and Bradstreet or Equifax, and insert your organization's identification number or other method of searching your organization's credit rating with such agency.)

« »

§ B.2 DISPUTES AND DISCIPLINARY ACTIONS
§ B.2.1 Are there any pending or outstanding judgments, arbitration proceedings, bond claims, or lawsuits against your organization, its parent, or a subsidiary, affiliate, or other entity having common ownership or management, or any of the individuals listed in Exhibit A, Section 1.2, in which the amount in dispute is more than $75,000?
(If the answer is yes, provide an explanation.)

« »

§ B.2.2 In the last five years has your organization, its parent, or a subsidiary, affiliate, or other entity having common ownership or management:
(If the answer to any of the questions below is yes, provide an explanation.)

.1 failed to complete work awarded to it?

« »

.2 been terminated for any reason except for an owners' convenience?

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User Notes: (964187475)

« »

.3 had any judgments, settlements, or awards pertaining to a construction project in which your organization was responsible for more than $75,000?

« »

.4 filed any lawsuits or requested arbitration regarding a construction project?

« »

§ B.2.3 In the last five years, has your organization, its parent, or a subsidiary, affiliate, or other entity having common ownership or management; or any of the individuals listed in Exhibit A Section 1.2:
(If the answer to any of the questions below is yes, provide an explanation.)

.1 been convicted of, or indicted for, a business-related crime?

« »

.2 had any business or professional license subjected to disciplinary action?

« »

.3 been penalized or fined by a state or federal environmental agency?

« »

DRAFT

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DRAFT AIA® Document A305™ – 2020 Exhibit C

Project Specific Information

This Exhibit is part of the Contractor's Qualification Statement, submitted by « » and dated the « » day of « » in the year « »
(In words, indicate day, month and year.)

PROJECT:
(Name and location or address.)

« »
« »

CONTRACTOR'S PROJECT OFFICE:
(Identify the office out of which the contractor proposes to perform the work for the Project.)

« »

TYPE OF WORK SOUGHT
(Indicate the type of work you are seeking for this Project, such as general contracting, construction manager as constructor, design-build, HVAC subcontracting, electrical subcontracting, plumbing subcontracting, etc.)

« »

CONFLICT OF INTEREST
Describe any conflict of interest your organization, its parent, or a subsidiary, affiliate, or other entity having common ownership or management, or any of the individuals listed in Exhibit A Section 1.2, may have regarding this Project.

« »

§ C.1 PERFORMANCE OF THE WORK
§ C.1.1 When was the Contractor's Project Office established?

« »

§ C.1.2 How many full-time field and office staff are respectively employed at the Contractor's Project Office?

« »

§ C.1.3 List the business license and contractor license or registration numbers for the Contractor's Project Office that pertain to the Project.

« »

§ C.1.4 Identify key personnel from your organization who will be meaningfully involved with work on this Project and indicate (1) their position on the Project team, (2) their office location, (3) their expertise and experience, and (4) projects similar to the Project on which they have worked.

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User Notes: (1179412339)

« »

§ C.1.5 Identify portions of work that you intend to self-perform on this Project.

« »

§ C.1.6 To the extent known, list the subcontractors you intend to use for major portions of work on the Project.

« »

§ C.2 EXPERIENCE RELATED TO THE PROJECT

§ C.2.1 Complete Exhibit D to describe up to four projects performed by the Contractor's Project Office, either completed or in progress, that are relevant to this Project, such as projects in a similar geographic area or of similar project type. If you have already completed Exhibit D, but want to provide further examples of projects that are relevant to this Project, you may complete Exhibit E.

§ C.2.2 State the total dollar value of work currently under contract at the Contractor's Project Office:

« »

§ C.2.3 Of the amount stated in Section C.2.2, state the dollar value of work that remains to be completed:

« »

§ C.2.4 State the average annual dollar value of construction work performed by the Contractor's Project Office during the last five years.

« »

§ C.2.5 List the total number of projects the Contractor's Project Office has completed in the last five years and state the dollar value of the largest contract the Contractor's Project Office has completed during that time.

« »

§ C.3 SAFETY PROGRAM AND RECORD

§ C.3.1 Does the Contractor's Project Office have a written safety program?

« »

§ C.3.2 List all safety-related citations and penalties the Contractor's Project Office has received in the last three years.

« »

§ C.3.3 Attach the Contractor's Project Office's OSHA 300a Summary of Work-Related Injuries and Illnesses form for the last three years.

§ C.3.4 Attach a copy of your insurance agent's verification letter for your organization's current workers' compensation experience modification rate and rates for the last three years.

§ C.4 INSURANCE

§ C.4.1 Attach current certificates of insurance for your commercial general liability policy, umbrella insurance policy, and professional liability insurance policy, if any. Identify deductibles or self-insured retentions for your commercial general liability policy.

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§ C.4.2 If requested, will your organization be able to provide property insurance for the Project written on a builder's risk "all-risks" completed value or equivalent policy form and sufficient to cover the total value of the entire Project on a replacement cost basis?

« »

§ C.4.3 Does your commercial general liability policy contain any exclusions or restrictions of coverage that are prohibited in AIA Document A101-2017, Exhibit A, Insurance A.3.2.2.2? If so, identify.

« »

§ C.5 SURETY

§ C.5.1 If requested, will your organization be able to provide a performance and payment bond for this Project?

« »

§ C.5.2 Surety company name:

« »

§ C.5.3 Surety agent name and contact information:

« »

§ C.5.4 Total bonding capacity:

« »

§ C.5.5 Available bonding capacity as of the date of this qualification statement:

« »

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AIA® Document A305™ – 2020
Exhibit D

Contractor's Past Project Experience

	1	2	3	4
PROJECT NAME				
PROJECT LOCATION				
PROJECT TYPE				
OWNER				
ARCHITECT				
CONTRACTOR'S PROJECT EXECUTIVE				
KEY PERSONNEL (include titles)				
PROJECT DETAILS	Contract Amount Completion Date % Self-Performed Work	Contract Amount Completion Date % Self-Performed Work	Contract Amount Completion Date % Self-Performed Work	Contract Amount Completion Date % Self-Performed Work
PROJECT DELIVERY METHOD	☐ Design-bid-build ☐ Design-build ☐ CM constructor ☐ CM advisor ☐ Other:	☐ Design-bid-build ☐ Design-build ☐ CM constructor ☐ CM advisor ☐ Other:	☐ Design-bid-build ☐ Design-build ☐ CM constructor ☐ CM advisor ☐ Other:	☐ Design-bid-build ☐ Design-build ☐ CM constructor ☐ CM advisor ☐ Other:
SUSTAINABILITY CERTIFICATIONS				

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AIA® Document A305™ – 2020
Exhibit E

Contractor's Past Project Experience, Continued

	1	2	3	4
PROJECT NAME				
PROJECT LOCATION				
PROJECT TYPE				
OWNER				
ARCHITECT				
CONTRACTOR'S PROJECT EXECUTIVE				
KEY PERSONNEL (include titles)				
PROJECT DETAILS	Contract Amount Completion Date % Self-Performed Work	Contract Amount Completion Date % Self-Performed Work	Contract Amount Completion Date % Self-Performed Work	Contract Amount Completion Date % Self-Performed Work
PROJECT DELIVERY METHOD	☐ Design-bid-build ☐ Design-build ☐ CM constructor ☐ CM advisor ☐ Other:	☐ Design-bid-build ☐ Design-build ☐ CM constructor ☐ CM advisor ☐ Other:	☐ Design-bid-build ☐ Design-build ☐ CM constructor ☐ CM advisor ☐ Other:	☐ Design-bid-build ☐ Design-build ☐ CM constructor ☐ CM advisor ☐ Other:
SUSTAINABILITY CERTIFICATIONS				

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User Notes: (3B9ADA32)

AIA® Document A310™ – 2010

Bid Bond

CONTRACTOR:
(Name, legal status and address)

SURETY:
(Name, legal status and principal place of business)

OWNER:
(Name, legal status and address)
Nanuet Union Free School District
101 Church Street
Nanuet, N.Y. 10954

BOND AMOUNT: $

PROJECT:
(Name, location or address, and Project number, if any)
NANUET UNION FREE SCHOOL DISTRICT
NANUET HIGH SCHOOL ELEVATOR ADDITION
LIST PROJECT NUMBERS BELOW:
50-01-08-03-0-003-032

The Contractor and Surety are bound to the Owner in the amount set forth above, for the payment of which the Contractor and Surety bind themselves, their heirs, executors, administrators, successors and assigns, jointly and severally, as provided herein. The conditions of this Bond are such that if the Owner accepts the bid of the Contractor within the time specified in the bid documents, or within such time period as may be agreed to by the Owner and Contractor, and the Contractor either (1) enters into a contract with the Owner in accordance with the terms of such bid, and gives such bond or bonds as may be specified in the bidding or Contract Documents, with a surety admitted in the jurisdiction of the Project and otherwise acceptable to the Owner, for the faithful performance of such Contract and for the prompt payment of labor and material furnished in the prosecution thereof; or (2) pays to the Owner the difference, not to exceed the amount of this Bond, between the amount specified in said bid and such larger amount for which the Owner may in good faith contract with another party to perform the work covered by said bid, then this obligation shall be null and void, otherwise to remain in full force and effect. The Surety hereby waives any notice of an agreement between the Owner and Contractor to extend the time in which the Owner may accept the bid. Waiver of notice by the Surety shall not apply to any extension exceeding sixty (60) days in the aggregate beyond the time for acceptance of bids specified in the bid documents, and the Owner and Contractor shall obtain the Surety's consent for an extension beyond sixty (60) days.

If this Bond is issued in connection with a subcontractor's bid to a Contractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

When this Bond has been furnished to comply with a statutory or other legal requirement in the location of the Project, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so

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.

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

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furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

Signed and sealed this day of ,

	(Contractor as Principal) *(Seal)*
(Witness)	*(Title)*
	(Surety) *(Seal)*
(Witness)	*(Title)*

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PAGE 1

Nanuet Union Free School District
101 Church Street
Nanuet, N.Y. 10954

...

(Name, location or address, and Project number, if any)
NANUET UNION FREE SCHOOL DISTRICT
NANUET HIGH SCHOOL ELEVATOR ADDITION
LIST PROJECT NUMBERS BELOW:
50-01-08-03-0-003-032

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Certification of Document's Authenticity

AIA® Document D401™ – 2003

I, David Short, 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 16:05:45 ET on 07/28/2022 under Order No. 2114341191 from AIA Contract Documents software and that in preparing the attached final document I made no changes to the original text of AIA® Document A310™ – 2010, Bid Bond, 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)

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SECTION 00 43 25 - SUBSTITUTION REQUEST FORM

Should any part or portion of the Work be planned for substitute products, list all substitutes that are proposed for products that have been specified by one or more manufacturers in the specifications. Please print in ink or type in the spaces provided. Attach additional sheets if necessary.

This identification of substitutions is required of Bidder(s) as part of the Supplementary Bid Forms and is in partial fulfillment of requirements of the Instructions to Bidders. Substitutions may affect Owner's acceptance of the Bid and decision to award Contract. Additional data on substitutions may be requested from selected Bidder(s) after the Bid Opening in accordance with Division 01 Section "Product Requirements."

CONTRACTOR NAME _____

CONTRACT NAME/# _____

SPECIFICATION SECTION	SPECIFIED ITEM	SUBSTITUTION

END OF SECTION 004325

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SECTION 00 43 36 - PROPOSED SUBCONTRACTORS FORM

Should any part or portion of the Work be planned for subcontracting, list the name and address of all Subcontractors that Bidder(s) proposes to use on Prime Contract and the assigned Work to each. Please print in ink or type in the spaces provided. Attach additional sheets if necessary.

This identification of subcontractors is required of Bidder(s) as part of the Supplementary Bid Forms and is in partial fulfillment of requirements of the Instructions to Bidders. Additional data on proposed Subcontractors may be requested from selected Bidders after the Bid Opening in accordance with the Instructions to Bidders.

CONTRACTOR NAME _____

CONTRACT NAME/# _____

SUBCONTRACTOR	ADDRESS	ASSIGNED WORK

END OF SECTION 004336

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SECTION 00 45 22 - SEXUALHARASSMENT PREVENTION CERTIFICATION FORM

By submission of this bid, the person signing on behalf of the bidder certifies, under penalty of perjury, that the bidder has and has implemented a written policy addressing sexual harassment prevention in the workplace and provides annual sexual harassment prevention training to all of its employees. Such policy shall, at a minimum, meet the requirements of Section 201-g of the Labor Law.

Bidder Name: _____

Bidder Address: _____

Signature:

_____

Print Name and Title: _____

Date: _____

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SECTION 004543 - CORPORATE RESOLUTIONS

INCLUDE WITH BID FORM(S) IF BIDDER IS AN INDIVIDUAL:

By:_____
(Signature)

_____
(Print or type individual's name and title)

_____
(Business Address)

_____
Business Phone Facsimile

INCLUDE WITH BID FORM(S) IF BIDDER IS A PARTNERSHIP:

_____
(Print or type name of firm)

BY:_____
(Signature of general partner)

_____
(Print or type general partner's name and title)

_____
(Business Address)

_____
Business Phone Facsimile

INCLUDE WITH BID FORM(S) IF BIDDER IS A CORPORATION:

_____
(Print or type name of corporation)

_____
(State of incorporation)

BY:_____
(Signature of president or vice-president)

_____
(Print or type individual's name and title)

_____
(Business Address)

_____
Business Phone Facsimile

ATTEST:

_____
(By corporate secretary or assistant secretary)

_____
(Print name and title)

Corporate Seal

END OF SECTION 004543

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SECTION 00 48 00 - NON-COLLUSIVE CERTIFICATION

PART 1 - GENERAL

1.1 The following provisions of the New York State General Municipal Law form a part of the Bidding Requirements:

A. 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 or her 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.

B. A Bid shall not be considered for award nor shall any award be made where (A) (1), (2) and (3) above have not been complied with; provided, however, that if in any case the Bidder cannot make the foregoing certification, the Bidder shall so state and shall so furnish with the Bid, a signed statement which sets forth in detail the reasons therefore. Where (A) (1), (2) and (3) above have not been complied with, the Bid shall not be considered for award nor shall any award be made unless the head of the purchasing unit of the political subdivision, public department, agency or official thereof to which the Bid is made, or his designee, determines that such disclosure was not made for the purpose of restricting competition.

C. The fact that a bidder:

1. has published price lists, rates, or tariffs covering items being procured
2. has informed prospective customers of proposed or pending publication of new or revised price lists for such items, or
3. has sold the same items to other customers at the same prices being bid, does not constitute, without more, a disclosure within the meaning of subparagraph (A) (1), (2) and

D. Any bid hereafter made to any political subdivision of the State or any public department, agency or official thereof by a corporate bidder for work or services performed or to be performed or goods sold or to be sold, where competitive bidding is required by statute, rule, regulation, or local law, and where such bid contains the certification referred to in subdivision one of this section, shall be deemed to have been authorized by the board of directors of the bidder, and such authorization shall be deemed to include the signing and submission of the bid and the inclusion therein of the certificate as to non-collusion as the act and deed of the corporation.

E. The person signing this Bid or Proposal certifies that he has fully informed himself regarding the accuracy of the statements contained in this certification, and under the penalties of perjury, affirms the truth thereof, such penalties being applicable to the Bidder as well to the person signing in his behalf.

CLOSING: (SIGNATURE)_____ (PRINT NAME) _____

TITLE: _____ DATE _____

COMPANY NAME: _____

ADDRESS: _____

ADDRESS: _____

TELEPHONE NUMBER: _____

FAX NUMBER: _____

CONTACT PERSON: _____

E-MAIL: _____
:

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 00 48 00

SECTION 004801 – GENERAL MUNICIPAL LAW "IRANIAN ENERGY SECTOR DIVESTMENT"

The below signed bidder affirms the following as true under penalties of perjury:

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 its knowledge and belief that each bidder is not on the list created pursuant to paragraph (b) of subdivision 3 of Section 165-a of the state finance law.

Corporate or Company Name

BY: _____
Signature

_____
Title

Sworn to before me this

_____ day of _____, 20____

_____
Notary Public

END OF SECTION 004801

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SECTION 00 48 01.1 – 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: _____

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SECTION 00 48 06 - WAGE DETERMINATION SCHEDULE

PART 1 - GENERAL

1.1 NEW YORK STATE DEPARTMENT OF EDUCATION INSTRUCTIONS

A. Per instructions from the New York State Education Department in "Office of Facilities Planning Newsletter #106 – May 2011" the PRC number can be used by all prospective bidders to see the appropriate wage rates for the Project by following the website link:

Nanuet High School Elevator Addition

https://apps.labor.ny.gov/wpp/publicViewProject.do?method=showIt&id=1529983 or

or PRC# 2022003495

Click on the "Wage Schedule" link near the top of the page.

B. This process may be used for SED approval and for the actual bidding process.

C. Prospective bidders must go to the DOL website with the PRC number provided and make certain their bid price is reflective of the actual wage rates for the particular project.

D. Once the district has identified a low bidder, DOL states that the contract must include the actual wage rates for the project.

E. (Facilities Planning Newsletters can be found online at: http://www.p12.nysed.gov/facplan/NewsLetters.htm)

END OF SECTION 00 48 06

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AIA® Document A132™ – 2019

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

AGREEMENT made as of the day of in the year 2022
(In words, indicate day, month and year.)

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

Nanuet School District
101 Church Street
Nanuet, NY 10954
T. 845.343.1481
and the Contractor:
(Name, legal status, address and other information)

for the following Project:
(Name, location and detailed description)
Nanuet High School Elevator Addition
101 Church Street
Nanuet, NY 10954
SED #50-01-08-03-0-003-032

The Construction Manager:
(Name, legal status, address and other information)
Jacobs
500 7th Ave, 17th Floor
New York, NY 12601
T. 646.908.6550

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

KSQ Architects, PC (dba KSQ Design)
215 West 40th Street, 15th Floor
New York, NY 10018
T. 914.628.3700

The Owner and Contractor agree as follows.

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.

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

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TABLE OF ARTICLES

1 THE CONTRACT DOCUMENTS

2 THE WORK OF THIS CONTRACT

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4 CONTRACT SUM

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6 DISPUTE RESOLUTION

7 TERMINATION OR SUSPENSION

8 MISCELLANEOUS PROVISIONS

9 ENUMERATION OF CONTRACT DOCUMENTS

(Paragraphs deleted)

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, the Bidding Documents, other documents listed in this Agreement, and Modifications issued after execution of this Agreement, all of which form the Contract, and are as fully a part of the Contract as if attached to this Agreement or repeated herein. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. An enumeration of the Contract Documents, other than Modifications, appears in Article 9. The Contractor represents that it has fully reviewed the Contract Documents and agrees that the Contract Documents describe, to the best of the Contractor's knowledge, the Work necessary to furnish and provide (and that the Contractor shall furnish and provide) a fully functioning Project consistent with the Contract Documents.

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. It is the intent of the parties to include within the Work any and all labor, materials, equipment and services that, although not expressly indicated in the Contract Documents, are reasonably inferable therefrom to construct complete and workable systems for the satisfactory performance, execution, final completion and use of the Work and Project.

ARTICLE 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

§ 3.1 The date of commencement of the Work shall

(Paragraphs deleted)

be the date of this Agreement unless a different date is stated below or provision is made for the date to be fixed in a notice to proceed issued by the Owner.

(Insert the date of commencement, if it differs from the date of this Agreement or, if applicable, state that the date will be fixed in a notice to proceed.)

If, prior to the commencement of the Work, the Owner requires time to file mortgages, mechanics' liens and other security interests, the Owner's time requirement shall be as follows:

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§ 3.2 The Contract Time shall be measured from the date of commencement of the Work. The provisions of this Contract relating to the time for performance and completion of the Work are of the essence of this Contract. Accordingly, time is of the essence respecting the Contract Documents and all obligations thereunder.

§ 3.3 The Contractor shall achieve Substantial Completion of the entire Work not later than ( ) days from the date of commencement, or as follows:
(Insert number of calendar days. Alternatively, a calendar date may be used when coordinated with the date of commencement. If appropriate, insert requirements for earlier Substantial Completion of certain portions of the Work.)

As per Milestone Schedule Section 011100

Portion of the Work	Substantial Completion Date

, subject to adjustments of this Contract Time as provided in the Contract Documents.
(Insert provisions, if any, for liquidated damages relating to failure to achieve Substantial Completion on time or for bonus payments for early completion of the Work.)

A fine of $1,000 per calendar day past the date of substantial completion if at no fault of the architect or owner

(Table deleted)
(Paragraphs deleted)
§ 3.4 Time is of the essence in the performance of the Contract Documents, including, without limitation, the Substantial Completion dates established herein. The Contractor shall proceed expeditiously with adequate forces and shall use its best efforts to keep its Work and the Project on schedule, and the Contractor shall achieve the completion times established within the Contract Documents. Milestone dates set forth in the Construction Schedule are dates critical to the Owner's operations that establish when the Work or a part thereof is to commence and be complete. All milestone dates are of the essence.

(Paragraph deleted)
(Table deleted)
(Paragraphs deleted)
ARTICLE 4 CONTRACT SUM
§ 4.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor's performance of the Contract. The Contract Sum shall be one of the following:
(Check the appropriate box.)

[X] Stipulated Sum, in accordance with Section 4.2 below

[ ] Cost of the Work plus the Contractor's Fee, in accordance with Section 4.3 below

[ ] Cost of the Work plus the Contractor's Fee with a Guaranteed Maximum Price, in accordance with Section 4.4 below

(Based on the selection above, complete Section 4.2, 4.3 or 4.4 below.)

§ 4.2 Stipulated Sum
§ 4.2.1 The Contract Sum shall be ($), subject to additions and deductions as provided in the Contract Documents.

§ 4.2.1.1 The Stipulated Sum shall not be adjusted for increased labor or material costs, whether foreseen or unforeseen, which may occur between the date of this Agreement and the Commencement Date, or which may occur between the Commencement Date and the Substantial Completion Date or Dates set forth in this Agreement.

§ 4.2.2 Alternates
§ 4.2.2.1 Alternates, if any, included in the Contract Sum:

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Item	Price

§ 4.2.2.2 Subject to the conditions noted below, the following alternates may be accepted by the Owner following execution of this Agreement. Upon acceptance, the Owner shall issue a Modification to this Agreement.
(Insert below each alternate and the conditions that must be met for the Owner to accept the alternate.)

Item	Price	Conditions for Acceptance

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

Item	Price
Contingency Allowance Contract GC-01	$27,000
Contingency Allowance Contract EC-01	$3,000
Contingency Allowance Contract MC-01	$5,000

§ 4.2.4 Unit prices, if any:
(Identify the item and state the unit price, and quantity limitations, if any, to which the unit price will be applicable.)

Item	Units and Limitations	Price per Unit ($0.00)
As per Specification 01 22 00		

(Paragraphs deleted)
(Table deleted)
(Paragraphs deleted)
(Table deleted)
(Paragraphs deleted)
(Table deleted)
(Paragraphs deleted)
(Table deleted)
(Paragraphs deleted)
(Table deleted)
(Paragraphs deleted)

ARTICLE 5 PAYMENTS

§ 5.1 Progress Payments

§ 5.1.1 Based upon Applications for Payment submitted to the Construction Manager by the Contractor, and upon certification of the Project Application and Project Certificate for Payment or Application for Payment and Certificate for Payment by the Construction Manager and Architect and issuance 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 Construction Manager not later than the 7th day of a month, absent any defaults of the Contractor under the Contract Documents, the Owner shall make payment of the certified amount in the Application for Payment to the Contractor not later than the 7th day of the following month. If an Application for Payment is received by the Construction Manager after the application date fixed above, absent any defaults of the Contractor under the Contract Documents, payment shall be made by the Owner not later than thirty (30) days after issuance of a Certificate for Payment.

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§ 5.1.4 Progress Payments Where the Contract Sum is Based on a Stipulated Sum

§ 5.1.4.1 Each Application for Payment shall be based on the most recent schedule of values submitted by the Contractor in accordance with the Contract Documents. The schedule of values shall allocate the entire Contract Sum among the various portions of the Work and be prepared in such form and supported by such data to substantiate its accuracy as the Construction Manager and Architect may require. This schedule, unless objected to by the Construction Manager or Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 5.1.4.2 Applications for Payment shall show the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment. All progress payments made previous to the last and final payment shall be based on estimates and the right is hereby reserved by the Architect for the Owner to make all due and proper corrections in any payment for any previous error.

§ 5.1.4.3 In accordance with AIA Document A232™–2019, General Conditions of the Contract for Construction, Construction Manager as Adviser Edition, as modified, and subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

§ 5.1.4.3.1 The amount of each progress payment shall first include:

.1 That portion of the Contract Sum properly allocable to completed Work;

.2 That portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction, or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing; and

.3 That portion of Construction Change Directives that the Architect determines, in the Architect's professional judgment, to be reasonably justified.

§ 5.1.4.3.2 The amount of each progress payment shall then be reduced by:

.1 The aggregate of any amounts previously paid by the Owner;

.2 The amount, if any, for Work that remains uncorrected and for which the Architect has previously withheld a Certificate for Payment as provided in Article 9 of AIA Document A232–2019, as modified;

.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 Owner, Construction Manager or Architect may withhold payment, or nullify a Certificate of Payment in whole or in part, as provided in Article 9 of AIA Document A232–2019, as modified; and

.5 Retainage withheld pursuant to Section 5.1.7.

(Paragraphs deleted)

§ 5.1.7 Retainage

§ 5.1.7.1 For each progress payment made prior to when the Work of this Contract is substantially complete, the Owner may withhold the following amount, as retainage, from the payment otherwise due:
(Insert a percentage or amount to be withheld as retainage from each Application for Payment. The amount of retainage may be limited by governing law.)

Five percent (5%)

§ 5.1.7.1.1 The following items are not subject to retainage:
(Insert any items not subject to the withholding of retainage, such as general conditions, insurance, etc.)

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 when the entire Work of this Contract is substantially complete, including modifications for completion of portions of the Work as provided in Section 3.4.2, insert provisions for such modifications.)

No retainage reduction prior to Substantial Completion of the entire Work and all closeout paperwork received and approved.

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§ 5.1.7.3 Except as set forth in this Section 5.1.7.3, when the Work of this Contract is substantially complete, the Contractor may submit an Application for Payment that includes the retainage withheld from prior Applications for Payment pursuant to this Section 5.1.7. The Application for Payment submitted when the Work of this Contract is substantially complete shall not include retainage as follows:
(Insert any other conditions for release of retainage when the Work of this Contract is substantially complete, or upon Substantial Completion of the Work of all Contractors on the Project or portions thereof.)

Upon Substantial Completion of the Work, the payment shall be less two times the value of any remaining Work to be completed as the Construction Manager recommends and the Architect determines for incomplete Work and an amount necessary to satisfy any claims, liens or judgments against the Contractor that have not been suitably discharged.

§ 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 Section 12.2 of AIA Document A232–2019, and to satisfy other requirements, if any, which extend beyond final payment;

.2 the Contractor has submitted a final accounting for the Cost of the Work, pursuant to the Table of Contents CSI Format, Determination of the Cost of the Work when payment is on the basis of the Cost of the Work, with or without a Guaranteed Maximum payment; and

.3 a final Certificate for Payment or Project Certificate for Payment has been issued by the Architect; such final payment shall be made by the Owner not more than 30 days after the issuance of the final Certificate for Payment or Project Certificate for Payment, or as follows:

.4 all closeout paperwork per checklist

Refer to Specification Section 01 7701 – Checklist for Project Closeout and Processing of Final Payment.

(Paragraphs deleted)

§ 5.2.2 In addition to other required items, including but not limited to those set forth in Section 5.2.1 above and those required under Section 9.10 of the General Conditions, the final Application for Payment must be accompanied by the following, all in form and substance satisfactory to the Owner and in compliance with applicable law:

.1 permanent certificate(s) of occupancy or use issued by the appropriate governmental authority;

.2 all maintenance and operating manuals;

.3 marked sets of field drawings and specifications reflecting "as-built" conditions;

.4 reproducible Mylar drawings reflecting the location of any concealed utilities, mechanical and electrical systems, and their components;

.5 assignments of all guarantees and warranties to the Contractor from Subcontractors, materialmen, vendors, or manufacturers, together with a list of their names, addresses, telephone numbers, and corresponding guarantees and warranties from each; and

.6 all other information and materials required to comply with the requirements of the Contract Documents or reasonably requested by the Owner, Architect, or Construction Manager.

(Paragraphs deleted)

§ 5.2.3 The Owner's final payment to the Contractor shall be made no later than 30 days after the issuance of the final Certificate for Payment or Project Certificate for Payment.

§ 5.3 Payments due and unpaid under the Contract shall bear interest from the date payment is due
(Paragraphs deleted)
in accordance with Section 106-b(1)(b) of the New York State General Municipal Law.

ARTICLE 6 DISPUTE RESOLUTION

§ 6.1 Initial Decision Maker

The Architect will serve as Initial Decision Maker pursuant to Article 15 of AIA Document A232–2019,
(Paragraphs deleted)

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as modified.

§ 6.2 Binding Dispute Resolution

For any Claim, dispute or other matter in controversy arising out of or related to the Contract, the method of binding dispute resolution shall be as follows:
(Check the appropriate box.)

[ ] Arbitration pursuant to Article 15 of AIA Document A232–2019.

[X] Litigation in a court of competent jurisdiction located in Rockland County.

[ ] Other: *(Specify)*

(Paragraphs deleted)

ARTICLE 7 TERMINATION OR SUSPENSION

§ 7.1 Where the Contract Sum is a Stipulated Sum

§ 7.1.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A232–2019, as modified.

(Paragraphs deleted)

§ 7.1.2 The Work may be suspended by the Owner as provided in Article 14 of AIA Document A232–2019, as modified.

(Paragraphs deleted)

ARTICLE 8 MISCELLANEOUS PROVISIONS

§ 8.1 Where reference is made in this Agreement to a provision of AIA Document A232–2019, as modified, 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)

Mario Spagnuolo, Attorney/ Assistant Superintendent for Business
Rudy Villanyi, Director of Facilities
101 Church Street
Nanuet, N.Y. 10954

§ 8.3 The Contractor's representative:
(Name, address, email address, and other information)

TBD

§ 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 Contractor shall purchase and maintain insurance as set forth in Article 11 of AIA Document A232–2009, as modified.

§ 8.5.2 The Contractor shall provide bonds as set forth in Article 11 of AIA Document A232–2009, as modified.

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§ 8.6 Notice in electronic format, pursuant to Article 1 of AIA Document A232–2019, as modified, 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.)

If the parties intend to transmit Instruments of Service or any other information or documentation in digital form, they will endeavor to establish necessary protocols governing such transmissions, unless otherwise already provided in the Agreement or the Contract Documents.

§ 8.7 Intentionally omitted.

§ 8.8 Other provisions:
§ 8.8.1 The Contractor represents and warrants the following to the Owner (in addition to any other representations and warranties contained in the Contract Documents) as an inducement to the Owner to execute this Agreement, which representations and warranties shall survive the execution and delivery of this Agreement, any termination of this Agreement and the final completion of the Work:

.1 that it and its Subcontractors are financially solvent, able to pay all debts as they mature and possessed of sufficient working capital to complete the Work and perform all obligations hereunder;

.2 that it is able to furnish the plant, tools, materials, supplies, equipment, and labor required to complete the Work and perform its obligations hereunder;

.3 that it is authorized to do business in the State of New York and the United States and properly licensed by all necessary governmental and public and quasi-public authorities having jurisdiction over it and over the Work and the Project;

.4 that its execution of this Agreement and its performance thereof is within its duly authorized powers;

.5 that its duly authorized representative has visited the site of the Project, is familiar with the local and special conditions under which the Work is to be performed and has correlated on-site observations with the requirements of the Contact Documents; and

.6 that it possesses a high level of experience and expertise in the business administration, construction, construction management and superintendence or projects of the size, complexity and nature of the particular Project, and that it will perform the Work with the care, skill and diligence of such a contractor.

The foregoing warranties are in addition to, and not in lieu of, any and all other liability imposed upon the Contractor by law with respect to the Contractor's duties, obligations, and performance hereunder. The Contractor's liability hereunder shall survive the Owner's final acceptance of and payment for the Work. All representations and warranties set forth in this Agreement, including without limitation, this Section 8.8.1, shall survive the final completion of the Work or the earlier termination of this Agreement. The Contractor acknowledges that the Owner is relying upon the Contractor's skill and experience in connection with the Work called for hereunder.

ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

§ 9.1 The Contract Documents, except for Modifications issued after execution of this Agreement, are enumerated in the sections below.

§ 9.1.1 The Agreement is this executed AIA Document A132–2009, Standard Form of Agreement Between Owner and Contractor, Construction Manager as Adviser Edition.

§ 9.1.2 The General Conditions are, AIA Document A232–2009, General Conditions of the Contract for Construction, Construction Manager as Adviser Edition.

§ 9.1.3 The Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages

§ 9.1.4 The Specifications:
(Either list the Specifications here or refer to an exhibit attached to this Agreement.)

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Exhibit A – Specifications table of contents

Section	Title	Date	Pages
Refer to Specification Exhibit, Section 00 0110 for complete list of specifications	Table of Contents	August 2, 2022	

§ 9.1.5 The Drawings:
(Either list the Drawings here or refer to an exhibit attached to this Agreement.)
Exhibit B – List of Drawings

Number	Title	Date
Refer to Drawing (TS) Drawing List	Exhibit Title Sheet	Title Sheet	August 2, 2022

(Paragraphs deleted)
§ 9.1.6 The Addenda, if any:

Number	Date	Pages
TBD		

Portions of Addenda relating to bidding requirements are not part of the Contract Documents unless the bidding requirements are also enumerated in this Article 9.

§ 9.1.7 Additional documents, if any, forming part of the Contract Documents are:
(Paragraph deleted)
.1 AIA Document A132™–2009, Exhibit A, Determination of the Cost of the Work, if applicable.
(Paragraph deleted)
.2 AIA Document E201™–2007, Digital Data Protocol Exhibit, if completed, or the following:

(Paragraph deleted)
.3 AIA Document E202™–2008, Building Information Modeling Protocol Exhibit, if completed, or the following:
(Table deleted)

(Table deleted)
.4 Other documents, if any, listed below:
(List here any additional documents which are intended to form part of the Contract Documents. AIA Document A232–2019 provides that bidding requirements such as advertisement or invitation to bid, Instructions to Bidders, sample forms and the Contractor's bid are not part of the Contract Documents unless enumerated in this Agreement. They should be listed here only if intended to be part of the Contract Documents.)

Exhibit B - Bidding Documents: Specification and Drawings

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

OWNER *(Signature)*	**CONTRACTOR** *(Signature)*
Ed Dingman Board President *(Printed name and title)*	*(Printed name and title)*

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PAGE 1

AGREEMENT made as of the day of in the year 2022
(In words, indicate day, ~~month,~~ month and year.)

...

(Name, legal status, ~~address,~~ address and other information)

Nanuet School District
101 Church Street
Nanuet, NY 10954
T. 845.343.1481

...

(Name, legal status, ~~address,~~ address and other information)

...

(Name, ~~location,~~ location and detailed description)
Nanuet High School Elevator Addition
101 Church Street
Nanuet, NY 10954
SED #50-01-08-03-0-003-032

...

(Name, legal status, ~~address,~~ address and other information)
Jacobs
500 7th Ave, 17th Floor
New York, NY 12601
T. 646.908.6550

...

(Name, legal status, ~~address,~~ address and other information)

KSQ Architects, PC (dba KSQ Design)
215 West 40th Street, 15th Floor
New York, NY 10018
T. 914.628.3700

...

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9 ENUMERATION OF CONTRACT DOCUMENTS

~~**EXHIBIT A INSURANCE AND BONDS**~~
~~**EXHIBIT B DETERMINATION OF THE COST OF THE WORK**~~

...

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, the Bidding Documents, other documents listed in this Agreement, and Modifications issued after execution of this Agreement, all of which form the Contract, and are as fully a part of the Contract as if attached to this Agreement or repeated herein. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. An enumeration of the Contract Documents, other than Modifications, appears in Article 9. The Contractor represents that it has fully reviewed the Contract Documents and agrees that the Contract Documents describe, to the best of the Contractor's knowledge, the Work necessary to furnish and provide (and that the Contractor shall furnish and provide) a fully functioning Project consistent with the Contract Documents.

...

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. It is the intent of the parties to include within the Work any and all labor, materials, equipment and services that, although not expressly indicated in the Contract Documents, are reasonably inferable therefrom to construct complete and workable systems for the satisfactory performance, execution, final completion and use of the Work and Project.

~~**ARTICLE 3 DATE OF COMMENCEMENT AND DATES OF SUBSTANTIAL COMPLETION**~~
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~~ be the date of this Agreement unless a different date is stated below or provision is made for the date to be fixed 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.~~)the date of commencement, if it differs from the date of this Agreement or, if applicable, state that the date will be fixed in a notice to proceed.)

~~If a date of commencement of the Work is not selected, then the date of commencement shall be the date of this Agreement.~~If, prior to the commencement of the Work, the Owner requires time to file mortgages, mechanics' liens and other security interests, the Owner's time requirement shall be as follows:

§ 3.2 The Contract Time shall be measured from the date of commencement of the Work. The provisions of this Contract relating to the time for performance and completion of the Work are of the essence of this Contract. Accordingly, time is of the essence respecting the Contract Documents and all obligations thereunder.

§ 3.3 ~~Substantial Completion of the Project or Portions Thereof~~The Contractor shall achieve Substantial Completion of the entire Work not later than ( ) days from the date of commencement, or as follows:

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(Insert number of calendar days. Alternatively, a calendar date may be used when coordinated with the date of commencement. If appropriate, insert requirements for earlier Substantial Completion of certain portions of the Work.)

As per Milestone Schedule Section 011100

Portion of the Work	Substantial Completion Date

, subject to adjustments of this Contract Time as provided in the Contract Documents.
(Insert provisions, if any, for liquidated damages relating to failure to achieve Substantial Completion on time or for bonus payments for early completion of the Work.)

A fine of $1,000 per calendar day past the date of substantial completion if at no fault of the architect or owner

~~**§ 3.3.1** Subject to adjustments of the Contract Time as provided in the Contract Documents, the date of Substantial Completion of the Work of all of the Contractors for the Project will be:~~
~~*(Insert the date of Substantial Completion of the Work of all Contractors for the Project.)*~~

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

~~Portion of Work~~	~~Substantial Completion Date~~

§ 3.4 ~~When the Work of this Contract, or any Portion Thereof, is Substantially Complete~~Time is of the essence in the performance of the Contract Documents, including, without limitation, the Substantial Completion dates established herein. The Contractor shall proceed expeditiously with adequate forces and shall use its best efforts to keep its Work and the Project on schedule, and the Contractor shall achieve the completion times established within the Contract Documents. Milestone dates set forth in the Construction Schedule are dates critical to the Owner's operations that establish when the Work or a part thereof is to commence and be complete. All milestone dates are of the essence.
~~**§ 3.4.1** Subject to adjustments of the Contract Time as provided in the Contract Documents, the Contractor shall substantially complete the entire Work of this Contract:~~
~~*(Check one of the following boxes and complete the necessary information.)*~~

~~[–] Not later than (–) calendar days from the date of commencement of the Work.~~

~~[–] By the following date:~~

~~**§ 3.4.2** Subject to adjustments of the Contract Time as provided in the Contract Documents, if portions of the Work of this Contract are to be substantially complete prior to when the entire Work of this Contract shall be substantially complete, the Contractor shall substantially complete such portions by the following dates:~~

~~Portion of Work~~	~~Date to be substantially complete~~

~~**§ 3.4.3** If the Contractor fails to substantially complete the Work of this Contract, or portions thereof, as provided in this Section 3.4, liquidated damages, if any, shall be assessed as set forth in Section 4.5.~~

[**X**] Stipulated Sum, in accordance with Section 4.2 below

...

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§ 4.2.1.1 The Stipulated Sum shall not be adjusted for increased labor or material costs, whether foreseen or unforeseen, which may occur between the date of this Agreement and the Commencement Date, or which may occur between the Commencement Date and the Substantial Completion Date or Dates set forth in this Agreement.

PAGE 4

Contingency Allowance Contract GC-01	$27,000
Contingency Allowance Contract EC-01	$3,000
Contingency Allowance Contract MC-01	$5,000

...

As per Specification 01 22 00

~~§ 4.3 Cost of the Work Plus Contractor's Fee without a Guaranteed Maximum Price~~
~~§ 4.3.1 The Cost of the Work is as defined in Exhibit B, Determination of the Cost of the Work.~~

~~§ 4.3.2 The Contractor's Fee:~~
~~*(State a lump sum, percentage of Cost of the Work or other provision for determining the Contractor's Fee.)*~~

~~§ 4.3.3 The method of adjustment of the Contractor's Fee for changes in the Work:~~

~~§ 4.3.4 Limitations, if any, on a Subcontractor's overhead and profit for increases in the cost of its portion of the Work:~~

~~§ 4.3.5 Rental rates for Contractor-owned equipment shall not exceed percent (%) of the standard rental rate paid at the place of the Project.~~

~~§ 4.3.6 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)~~

~~§ 4.3.7 The Contractor shall prepare and submit to the Construction Manager, within 14 days of executing this Agreement, a written Control Estimate for the Owner's review and approval. The Control Estimate shall include the items in Section B.1 of Exhibit B, Determination of the Cost of the Work.~~

~~§ 4.4 Cost of the Work Plus Contractor's Fee with a Guaranteed Maximum Price~~
~~§ 4.4.1 The Cost of the Work is as defined in Exhibit B, Determination of the Cost of the Work.~~

~~§ 4.4.2 The Contractor's Fee:~~
~~*(State a lump sum, percentage of Cost of the Work or other provision for determining the Contractor's Fee.)*~~

~~§ 4.4.3 The method of adjustment of the Contractor's Fee for changes in the Work:~~

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§ 4.4.4 Limitations, if any, on a Subcontractor's overhead and profit for increases in the cost of its portion of the Work:

§ 4.4.5 Rental rates for Contractor-owned equipment shall not exceed (percent (%) of the standard rental rate paid at the place of the Project.

§ 4.4.6 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)

§ 4.4.7 Guaranteed Maximum Price
§ 4.4.7.1 The Contract Sum is guaranteed by the Contractor not to exceed ($), subject to additions and deductions by Change Order as provided in the Contract Documents. This maximum sum is referred to in the Contract Documents as the Guaranteed Maximum Price. Costs which would cause the Guaranteed Maximum Price to be exceeded shall be paid by the Contractor without reimbursement by the Owner.

§ 4.4.7.2 Alternates
§ 4.4.7.2.1 Alternates, if any, included in the Guaranteed Maximum Price:

Item	Price

§ 4.4.7.2.2 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

§ 4.4.7.3 Allowances, if any, included in the Guaranteed Maximum Price:
(Identify each allowance.)

Item	Price

§ 4.4.7.4 Assumptions, if any, upon which the Guaranteed Maximum Price is based:
(Identify each assumption.)

§ 4.4.8 To the extent that the Contract Documents are anticipated to require further development, the Guaranteed Maximum Price includes the costs attributable to such further development consistent with the Contract Documents and reasonably inferable therefrom. Such further development does not include changes in scope, systems, kinds and quality of materials, finishes, or equipment, all of which, if required, shall be incorporated by Change Order.

§ 4.4.9 The Owner shall authorize preparation of revisions to the Contract Documents that incorporate the agreed-upon assumptions contained in Section 4.4.7.4. The Owner shall promptly furnish such revised Contract Documents to the Contractor. The Contractor shall notify the Owner and Architect of any inconsistencies between the agreed-upon assumptions contained in Section 4.4.7.4 and the revised Contract Documents.

§ 4.5 Liquidated damages, if any:
(Insert terms and conditions for liquidated damages, if any, to be assessed in accordance with Section 3.4.)

§ 4.6 Other:
(Insert provisions for bonus, cost savings or other incentives, if any, that might result in a change to the Contract Sum.)

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...

§ 5.1.1 Based upon Applications for Payment submitted to the Construction Manager by the Contractor, and ~~Certificates for Payment issued by the Construction Manager and~~ upon certification of the Project Application and Project Certificate for Payment or Application for Payment and Certificate for Payment by the Construction Manager and Architect and issuance by the Architect, the Owner shall make progress payments on account of the Contract ~~Sum, to the Contractor,~~ Sum to the Contractor as provided below and elsewhere in the Contract Documents.

...

.

§ 5.1.3 Provided that an Application for Payment is received by the Construction Manager not later than the 7th day of a month, absent any defaults of the Contractor under the Contract Documents, the Owner shall make payment of the ~~amount certified~~ certified amount in the Application for Payment to the Contractor not later than the 7th day of the following month. If an Application for Payment is received by the Construction Manager after the application date fixed above, ~~payment of the amount certified~~ absent any defaults of the Contractor under the Contract Documents, payment shall be made by the Owner not later than ~~( ) days after the Construction Manager receives the Application for Payment.~~
~~(Federal, state or local laws may require payment within a certain period of time.)~~thirty (30) days after issuance of a Certificate for Payment.

§ 5.1.4.1 Each Application for Payment shall be based on the most recent schedule of values submitted by the Contractor in accordance with the Contract Documents. The schedule of values shall allocate the entire Contract Sum among the various portions of the ~~Work. The schedule of values shall~~ Work and be prepared in such ~~form,~~ form and supported by such data to substantiate its ~~accuracy,~~ accuracy as the Construction Manager and Architect may require. This ~~schedule of values~~ schedule, unless objected to by the Construction Manager or Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 5.1.4.2 Applications for Payment shall show the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment. All progress payments made previous to the last and final payment shall be based on estimates and the right is hereby reserved by the Architect for the Owner to make all due and proper corrections in any payment for any previous error.

§ 5.1.4.3 In accordance with AIA Document A232™–2019, General Conditions of the Contract for Construction, Construction Manager as Adviser Edition, as modified, and subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

...

.2 The amount, if any, for Work that remains uncorrected and for which the Architect has previously withheld a Certificate for Payment as provided in Article 9 of AIA Document ~~A232–2019;~~A232–2019, as modified;

...

.4 For Work performed or defects discovered since the last payment application, any amount for which the Owner, Construction Manager or Architect may withhold payment, or nullify a Certificate of Payment in whole or in part, as provided in Article 9 of AIA Document ~~A232–2019;~~ A232–2019, as modified; and

...

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§ 5.1.5 Progress Payments Where the Contract Sum is Based on the Cost of the Work without a Guaranteed Maximum Price

§ 5.1.5.1 With each Application for Payment, the Contractor shall submit the cost control information required in Exhibit B, Determination of the Cost of the Work, along with payrolls, petty cash accounts, receipted invoices, or invoices with check vouchers attached, and any other evidence required by the Owner, Construction Manager or Architect to demonstrate that payments already made by the Contractor on account of the Cost of the Work equal or exceed progress payments already received by the Contractor, plus payrolls for the period covered by the present Application for Payment, less that portion of the payments attributable to the Contractor's Fee.

§ 5.1.5.2 Applications for Payment shall show the Cost of the Work actually incurred by the Contractor through the end of the period covered by the Application for Payment and for which the Contractor has made or intends to make actual payment prior to the next Application for Payment.

§ 5.1.5.3 In accordance with AIA Document A232-2019 and subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

§ 5.1.5.3.1 The amount of each progress payment shall first include:

- **.1** The Cost of the Work as described in Exhibit B, Determination of the Cost of the Work;
- **.2** That portion of Construction Change Directives that the Architect determines, in the Architect's professional judgment, to be reasonably justified; and
- **.3** The Contractor's Fee computed upon the Cost of the Work described in the preceding Section 5.1.5.3.1.1 at the rate stated in Section 4.3.2; or if the Contractor's Fee is stated as a fixed sum in Section 4.3.2 an amount which bears the same ratio to that fixed-sum Fee as the Cost of the Work included in Section 5.1.5.3.1.1 bears to a reasonable estimate of the probable Cost of the Work upon its completion.

§ 5.1.5.3.2 The amount of each progress payment shall then be reduced by:

- **.1** The aggregate of any amounts previously paid by the Owner;
- **.2** The amount, if any, for Work that remains uncorrected and for which the Architect has previously withheld a Certificate for Payment as provided in Article 9 of AIA Document A232–2019;
- **.3** Any amount for which the Contractor does not intend to pay a Subcontractor or material supplier, unless the Work has been performed by others the Contractor intends to pay;
- **.4** For Work performed or defects discovered since the last payment application, any amount for which the Architect may withhold payment, or nullify a Certificate of Payment in whole or in part, as provided in Article 9 of AIA Document A232–2019;
- **.5** The shortfall, if any, indicated by the Contractor in the documentation required by Section 5.1.5.1 to substantiate prior Applications for Payment, or resulting from errors subsequently discovered by the Owner's auditors in such documentation; and
- **.6** Retainage withheld pursuant to Section 5.1.7.

§ 5.1.5.4 The Owner, Construction Manager and Contractor shall agree upon a mutually acceptable procedure for review and approval of payments to Subcontractors and the percentage of retainage held on Subcontracts, and the Contractor shall execute subcontracts in accordance with those agreements.

§ 5.1.5.5 In taking action on the Contractor's Applications for Payment, the Construction Manager and Architect shall be entitled to rely on the accuracy and completeness of the information furnished by the Contractor, and such action shall not be deemed to be a representation that (1) the Construction Manager and Architect have made a detailed examination, audit or arithmetic verification of the documentation submitted in accordance with Article 5 or other supporting data; (2) that the Construction Manager and Architect have made exhaustive or continuous on-site inspections; or (3) that the Construction Manager and Architect have made examinations to ascertain how or for what purposes the Contractor has used amounts previously paid on account of the Contract. Such examinations, audits and verifications, if required by the Owner, will be performed by the Owner's auditors acting in the sole interest of the Owner.

§ 5.1.5.6 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.

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§ 5.1.5.7 If final completion of the Work is materially delayed through no fault of the Contractor, then the Owner shall pay the Contractor any additional amounts in accordance with Article 9 of AIA Document A232-2019.

§ 5.1.6 Progress Payments Where the Contract Sum is Based on the Cost of the Work with a Guaranteed Maximum Price

§ 5.1.6.1 With each Application for Payment, the Contractor shall submit payrolls, petty cash accounts, receipted invoices or invoices with check vouchers attached, and any other evidence required by the Owner, Construction Manager or Architect to demonstrate that payments already made by the Contractor on account of the Cost of the Work equal or exceed progress payments already received by the Contractor plus payrolls for the period covered by the present Application for Payment, less that portion of the progress payments attributable to the Contractor's Fee.

§ 5.1.6.2 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 Guaranteed Maximum Price among: (1) the various portions of the Work; (2) any contingency for costs that are included in the Guaranteed Maximum Price but not otherwise allocated to another line item or included in a Change Order; and (3) the Contractor's Fee.

§ 5.1.6.2.1 The schedule of values shall be prepared in such form, and supported by such data to substantiate its accuracy, as the Construction Manager and Architect may require. This schedule of values shall be used as a basis for reviewing the Contractor's Applications for Payment.

§ 5.1.6.2.2 The allocation of the Guaranteed Maximum Price under this Section 5.1.6.2 shall not constitute a separate guaranteed maximum price for the Cost of the Work of each individual line item in the schedule of values.

§ 5.1.6.2.3 When the Contractor allocates costs from a contingency to another line item in the schedule of values, the Contractor shall submit supporting documentation to the Architect and Construction Manager.

§ 5.1.6.3 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. The percentage of completion shall be the lesser of (1) the percentage of that portion of the Work which has actually been completed; or (2) the percentage obtained by dividing (a) the expense that has actually been incurred by the Contractor on account of that portion of the Work and for which the Contractor has made payment or intends to make payment prior to the next Application for Payment by (b) the share of the Guaranteed Maximum Price allocated to that portion of the Work in the schedule of values.

§ 5.1.6.4 In accordance with AIA Document A232-2019, and subject to other provisions of the Contract Documents, the amount of each progress payment shall be computed as follows:

§ 5.1.6.4.1 The amount of each progress payment shall first include:

.1 That portion of the Guaranteed Maximum Price properly allocable to completed Work as determined by multiplying the percentage of completion of each portion of the Work by the share of the Guaranteed Maximum Price allocated to that portion of the Work in the most recent schedule of values;

.2 That portion of the Guaranteed Maximum Price properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction or, if approved in writing in advance by the Owner, suitably stored off the site at a location agreed upon in writing;

.3 That portion of Construction Change Directives that the Architect determines, in the Architect's professional judgment, to be reasonably justified; and

.4 The Contractor's Fee, computed upon the Cost of the Work described in the preceding Sections 5.1.6.4.1.1 and 5.1.6.4.1.2 at the rate stated in Section 4.4.2 or, if the Contractor's Fee is stated as a fixed sum in that Section, an amount that bears the same ratio to that fixed-sum fee as the Cost of the Work included in Sections 5.1.6.4.1.1 and 5.1.6.4.1.2 bears to a reasonable estimate of the probable Cost of the Work upon its completion.

§ 5.1.6.4.2 The amount of each progress payment shall then be reduced by:

.1 The aggregate of any amounts previously paid by the Owner;

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~~.2 The amount, if any, for Work that remains uncorrected and for which the Architect has previously withheld a Certificate for Payment as provided in Article 9 of AIA Document A232–2019;~~

~~.3 Any amount for which the Contractor does not intend to pay a Subcontractor or material supplier, unless the Work has been performed by others the Contractor intends to pay;~~

~~.4 For Work performed or defects discovered since the last payment application, any amount for which the Architect may withhold payment, or nullify a Certificate of Payment in whole or in part, as provided in Article 9 of AIA Document A232–2019;~~

~~.5 The shortfall, if any, indicated by the Contractor in the documentation required by Section 5.1.6.1 to substantiate prior Applications for Payment, or resulting from errors subsequently discovered by the Owner's auditors in such documentation; and~~

~~.6 Retainage withheld pursuant to Section 5.1.7.~~

~~**§ 5.1.6.5** The Owner and the Contractor shall agree upon a mutually acceptable procedure for review and approval of payments to Subcontractors and the percentage of retainage held on Subcontracts, and the Contractor shall execute subcontracts in accordance with those agreements.~~

~~**§ 5.1.6.6** In taking action on the Contractor's Applications for Payment, the Construction Manager and Architect shall be entitled to rely on the accuracy and completeness of the information furnished by the Contractor and such action shall not be deemed to be a representation that (1) the Construction Manager or Architect have made a detailed examination, audit, or arithmetic verification of the documentation submitted in accordance with Section 5.1.6.1 or other supporting data; (2) that the Construction Manager or Architect have made exhaustive or continuous on-site inspections; or (3) that the Construction Manager or Architect have made examinations to ascertain how or for what purposes the Contractor has used amounts previously paid on account of the Contract. Such examinations, audits, and verifications, if required by the Owner, will be performed by the Owner's auditors acting in the sole interest of the Owner.~~

~~**§ 5.1.6.7** 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.~~

~~**§ 5.1.6.8** If final completion of the Work is materially delayed through no fault of the Contractor, then the Owner shall pay the Contractor any additional amounts in accordance with Article 9 of AIA Document A232–2019.~~

...

Five percent (5%)

...

None.

...

No retainage reduction prior to Substantial Completion of the entire Work and all closeout paperwork received and approved.

PAGE 6

Upon Substantial Completion of the Work, the payment shall be less two times the value of any remaining Work to be completed as the Construction Manager recommends and the Architect determines for incomplete Work and an amount necessary to satisfy any claims, liens or judgments against the Contractor that have not been suitably discharged.

...

§ 5.2.1 ~~Final Payment Where the Contract Sum is Based on a Stipulated Sum~~Final payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Contractor when

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.1 the Contractor has fully performed the Contract except for the Contractor's responsibility to correct Work as provided in Section 12.2 of AIA Document A232–2019, and to satisfy other requirements, if any, which extend beyond final payment;

.2 the Contractor has submitted a final accounting for the Cost of the Work, pursuant to the Table of Contents CSI Format, Determination of the Cost of the Work when payment is on the basis of the Cost of the Work, with or without a Guaranteed Maximum payment; and

.3 a final Certificate for Payment or Project Certificate for Payment has been issued by the Architect; such final payment shall be made by the Owner not more than 30 days after the issuance of the final Certificate for Payment or Project Certificate for Payment, or as follows:

.4 all closeout paperwork per checklist

Refer to Specification Section 01 7701 – Checklist for Project Closeout and Processing of Final Payment.

~~**§ 5.2.1.1** Final payment, constituting the entire unpaid balance of the Contract Sum, shall be made by the Owner to the Contractor when~~

~~**.1** the Contractor has fully performed the Contract except for the Contractor's responsibility to correct Work as provided in Article 12 of AIA Document A232–2019, and to satisfy other requirements, if any, which extend beyond final payment; and~~

~~**.2** a final Certificate for Payment or Project Certificate for Payment has been issued by the Architect.~~

~~**§ 5.2.1.2** The Owner's final payment to the Contractor shall be made no later than 30 days after the issuance of the final Certificate for Payment or Project Certificate for Payment, or as follows:~~

§ 5.2.2 ~~Final Payment Where the Contract Sum is Based on the Cost of the Work with or without a Guaranteed Maximum Price~~In addition to other required items, including but not limited to those set forth in Section 5.2.1 above and those required under Section 9.10 of the General Conditions, the final Application for Payment must be accompanied by the following, all in form and substance satisfactory to the Owner and in compliance with applicable law:

.1 permanent certificate(s) of occupancy or use issued by the appropriate governmental authority;

.2 all maintenance and operating manuals;

.3 marked sets of field drawings and specifications reflecting "as-built" conditions;

.4 reproducible Mylar drawings reflecting the location of any concealed utilities, mechanical and electrical systems, and their components;

.5 assignments of all guarantees and warranties to the Contractor from Subcontractors, materialmen, vendors, or manufacturers, together with a list of their names, addresses, telephone numbers, and corresponding guarantees and warranties from each; and

.6 all other information and materials required to comply with the requirements of the Contract Documents or reasonably requested by the Owner, Architect, or Construction Manager.

~~**§ 5.2.2.1** 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 A232–2019, and to satisfy other requirements, if any, which extend beyond final payment;~~

~~**.2** the Contractor has submitted a final accounting for the Cost of the Work, pursuant to Exhibit B, Determination of the Cost of the Work and a final Application for Payment; and~~

~~**.3** a final Certificate for Payment or Project Certificate for Payment has been issued by the Architect in accordance with Exhibit B, Determination of the Cost of the Work.~~

~~**§ 5.2.2.2** The Owner's final payment to the Contractor shall be made no later than 30 days after the issuance of the final Certificate for Payment or Project Certificate for Payment, or as follows:~~

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§ 5.2.3 The Owner's final payment to the Contractor shall be made no later than 30 days after the issuance of the final Certificate for Payment or Project Certificate for Payment.

§ 5.3 Payments due and unpaid under the Contract shall bear interest from the date payment is due ~~at the rate stated below, or in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.~~ ~~*(Insert rate of interest agreed upon, if any.)*~~

~~—%~~ in accordance with Section 106-b(1)(b) of the New York State General Municipal Law.

...

The Architect will serve as Initial Decision Maker pursuant to Article 15 of AIA Document A232–2019, ~~unless the parties appoint below another individual, not a party to this Agreement, to serve as Initial Decision Maker.~~
~~*(If the parties mutually agree, insert the name, address and other contact information of the Initial Decision Maker, if other than the Architect.)*~~

as modified.

For any ~~Claim subject to, but not resolved by, mediation pursuant to Article 15 of AIA Document A232–2019,~~ Claim, dispute or other matter in controversy arising out of or related to the Contract, the method of binding dispute resolution shall be as follows:

...

[**X**] Litigation in a court of competent ~~jurisdiction.~~jurisdiction located in Rockland County.

[ ] 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.~~

...

§ 7.1.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of ~~AIA Document A232–2019.~~AIA Document A232–2019, as modified.

~~**§ 7.1.1.1** If the Contract is terminated for the Owner's convenience in accordance with Article 14 of AIA Document A232–2019, then the Owner shall pay the Contractor a termination fee as follows:~~
~~*(Insert the amount of, or method for determining, the fee, if any, payable to the Contractor following a termination for the Owner's convenience.)*~~

§ 7.1.2 The Work may be suspended by the Owner as provided in Article 14 of AIA Document ~~A232–2019.~~A232–2019, as modified.

~~**§ 7.2 Where the Contract Sum is Based on the Cost of the Work with or without a Guaranteed Maximum Price**~~
~~**§ 7.2.1 Termination**~~

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~~§ 7.2.1.1 The Contract may be terminated by the Owner or the Contractor as provided in Article 14 of AIA Document A232–2019.~~

~~§ 7.2.1.2 Termination by the Owner for Cause~~

~~§ 7.2.1.2.1 If the Owner terminates the Contract for cause as provided in Article 14 of AIA Document A232–2019, the Owner shall then only pay the Contractor an amount as follows:~~

~~.1 Take the Cost of the Work incurred by the Contractor to the date of termination;~~

~~.2 Add the Contractor's Fee, computed upon the Cost of the Work to the date of termination at the rate stated in Section 4.3.2 or 4.4.2, as applicable, or, if the Contractor's Fee is stated as a fixed sum in that Section, an amount that bears the same ratio to that fixed-sum Fee as the Cost of the Work at the time of termination bears to a reasonable estimate of the probable Cost of the Work upon its completion;~~

~~.3 Subtract the aggregate of previous payments made by the Owner; and~~

~~.4 Subtract the costs and damages incurred, or to be incurred, by the Owner under Article 14 of AIA Document A232–2019.~~

~~§ 7.2.1.2.2 When the Contract Sum is based on the Cost of the Work with a Guaranteed Maximum Price, if the Owner terminates the Contract for cause as provided in Article 14 of AIA Document A232-2019, the amount, if any, to be paid to the Contractor under Article 14 of AIA Document A232-2019 shall not cause the Guaranteed Maximum Price to be exceeded, nor shall it exceed the amount calculated in Section 7.2.1.2.1.~~

~~§ 7.2.1.2.3 The Owner shall also pay the Contractor fair compensation, either by purchase or rental at the election of the Owner, for any equipment owned by the Contractor that the Owner elects to retain and that is not otherwise included in the Cost of the Work under Section 7.2.1.2.1.1. To the extent that the Owner elects to take legal assignment of subcontracts and purchase orders (including rental agreements), the Contractor shall, as a condition of receiving the payments referred to in this Article 7, execute and deliver all such papers and take all such steps, including the legal assignment of such subcontracts and other contractual rights of the Contractor, as the Owner may require for the purpose of fully vesting in the Owner the rights and benefits of the Contractor under such subcontracts or purchase orders. All Subcontracts, purchase orders and rental agreements entered into by the Contractor will contain provisions allowing for assignment to the Owner as described above.~~

~~§ 7.2.1.3 Termination by the Owner for Convenience~~

~~If the Owner terminates the Contract for convenience in accordance with Article 14 of AIA Document A232–2019, then the Owner shall pay the Contractor a termination fee as follows:~~

~~*(Insert the amount of or method for determining the fee, if any, payable to the Contractor following a termination for the Owner's convenience.)*~~

~~§ 7.3 Suspension~~

~~The Work may be suspended by the Owner as provided in Article 14 of AIA Document A232–2019; in such case, the Contract Sum and Contract Time shall be increased as provided in Article 14 of AIA Document A232–2019, except that the term "profit" shall be understood to mean the Contractor's Fee as described in Section 4.3.2 or 4.4.2, as applicable, of this Agreement.~~

§ 8.1 Where reference is made in this Agreement to a provision of AIA Document ~~A232–2019~~ A232–2019, as modified, or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

...

Mario Spagnuolo, Attorney/ Assistant Superintendent for Business
Rudy Villanyi, Director of Facilities
101 Church Street
Nanuet, N.Y. 10954

...

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TBD

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§ 8.5.1 The ~~Owner and the~~ Contractor shall purchase and maintain insurance as set forth in ~~AIA Document A132™–2019, Standard Form of Agreement Between Owner and Contractor, Construction Manager as Adviser Edition, Exhibit A, Insurance and Bonds, and elsewhere in the Contract Documents.~~Article 11 of AIA Document A232–2009, as modified.

§ 8.5.2 The Contractor shall provide bonds as set forth in ~~AIA Document A132™–2019, Exhibit A, and elsewhere in the Contract Documents.~~Article 11 of AIA Document A232–2009, as modified.

§ 8.6 Notice in electronic format, pursuant to Article 1 of AIA Document A232–2019, as modified, 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:
PAGE 8

If the parties intend to transmit Instruments of Service or any other information or documentation in digital form, they will endeavor to establish necessary protocols governing such transmissions, unless otherwise already provided in the Agreement or the Contract Documents.

§ 8.7 ~~Relationship of the Parties~~
~~Where the Contract is based on the Cost of the Work plus the Contractor's Fee, with or without a Guaranteed Maximum Price, the Contractor accepts the relationship of trust and confidence established by this Agreement and covenants with the Owner to cooperate with the Architect and exercise the Contractor's skill and judgment in furthering the interests of the Owner; to furnish efficient business administration and supervision; to furnish at all times an adequate supply of workers and materials; and to perform the Work in an expeditious and economical manner consistent with the Owner's interests. The Owner agrees to furnish and approve, in a timely manner, information required by the Contractor and to make payments to the Contractor in accordance with the requirements of the Contract Documents.~~Intentionally omitted.

...

§ 8.8.1 The Contractor represents and warrants the following to the Owner (in addition to any other representations and warranties contained in the Contract Documents) as an inducement to the Owner to execute this Agreement, which representations and warranties shall survive the execution and delivery of this Agreement, any termination of this Agreement and the final completion of the Work:

.1 that it and its Subcontractors are financially solvent, able to pay all debts as they mature and possessed of sufficient working capital to complete the Work and perform all obligations hereunder;

.2 that it is able to furnish the plant, tools, materials, supplies, equipment, and labor required to complete the Work and perform its obligations hereunder;

.3 that it is authorized to do business in the State of New York and the United States and properly licensed by all necessary governmental and public and quasi-public authorities having jurisdiction over it and over the Work and the Project;

.4 that its execution of this Agreement and its performance thereof is within its duly authorized powers;

.5 that its duly authorized representative has visited the site of the Project, is familiar with the local and special conditions under which the Work is to be performed and has correlated on-site observations with the requirements of the Contact Documents; and

.6 that it possesses a high level of experience and expertise in the business administration, construction, construction management and superintendence or projects of the size, complexity and nature of the particular Project, and that it will perform the Work with the care, skill and diligence of such a contractor.

The foregoing warranties are in addition to, and not in lieu of, any and all other liability imposed upon the Contractor by law with respect to the Contractor's duties, obligations, and performance hereunder. The Contractor's liability hereunder shall survive the Owner's final acceptance of and payment for the Work. All representations and warranties set forth in this Agreement, including without limitation, this Section 8.8.1, shall survive the final completion of the

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Work or the earlier termination of this Agreement. The Contractor acknowledges that the Owner is relying upon the Contractor's skill and experience in connection with the Work called for hereunder.

...

§ 9.1 ~~This Agreement is comprised of the following documents:~~The Contract Documents, except for Modifications issued after execution of this Agreement, are enumerated in the sections below.

§ 9.1.1 The Agreement is this executed AIA Document A132–2009, Standard Form of Agreement Between Owner and Contractor, Construction Manager as Adviser Edition.

§ 9.1.2 The General Conditions are, AIA Document A232–2009, General Conditions of the Contract for Construction, Construction Manager as Adviser Edition.

~~**.1** AIA Document A132™–2019, Standard Form of Agreement Between Owner and Contractor, Construction Manager as Adviser Edition~~**§ 9.1.3** The Supplementary and other Conditions of the Contract:

~~**.2** AIA Document A132™–2019, Exhibit A, Insurance and Bonds Exhibit.~~**3** ~~AIA Document A232™–2019, General Conditions of the Contract for Construction, Construction Manager as Adviser Edition~~

Document	Title	Date	Pages

~~**.4** AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, dated as indicated below:~~**§ 9.1.4** The Specifications:

~~*(Insert the date of the E203-2013 incorporated into this Agreement.)*~~*(Either list the Specifications here or refer to an exhibit attached to this Agreement.)*

Exhibit A – Specifications table of contents

Section	Title	Date	Pages
Refer to Specification Exhibit, Section 00 0110 for complete list of specifications	Table of Contents	August 2, 2022	

§ 9.1.5 The Drawings:

~~**.5** *Drawings*~~*(Either list the Drawings here or refer to an exhibit attached to this Agreement.)*

Exhibit B – List of Drawings

PAGE 9

Refer to Drawing Exhibit (TS) Drawing List	Title Sheet	August 2, 2022	

~~**.6** Specifications~~

~~Section~~	~~Title~~	~~Date~~	~~Pages~~

~~**.7** Addenda, if any:~~**§ 9.1.6** The Addenda, if any:

...

TBD

Portions of Addenda relating to bidding ~~or proposal~~ requirements are not part of the Contract Documents unless the bidding ~~or proposal~~ requirements are also enumerated in this Article 9.

~~**.8** Other Exhibits:~~**§ 9.1.7** Additional documents, if any, forming part of the Contract Documents are:

~~*(Check all boxes that apply and include appropriate information identifying the exhibit where required.)*~~

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[–] AIA Document A132™–2019, Exhibit B, .1 AIA Document A132™–2009, Exhibit A, Determination of the Cost of the WorkWork, if applicable.

[–] AIA Document E235™–2019, Sustainable Projects Exhibit, Construction Manager as Adviser Edition, dated as indicated below:

(Insert the date of the E235-2019 incorporated into this Agreement.).2 AIA Document E201™–2007, Digital Data Protocol Exhibit, if completed, or the following:

...

[–] The Sustainability Plan:

.3 AIA Document E202™–2008, Building Information Modeling Protocol Exhibit, if completed, or the following:

Title	Date	Pages

[–] Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages

.9 .4 Other documents, if any, listed below:

(List here any additional documents that which are intended to form part of the Contract Documents. AIA Document A232–2019 provides that the bidding requirements such as 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, forms and the Contractor's bid are not part of the Contract Documents unless enumerated in this Agreement. Any such documents They should be listed here only if intended to be part of the Contract Documents.)

Exhibit B - Bidding Documents: Specification and Drawings

...

Ed Dingman Board President

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Certification of Document's Authenticity

AIA® Document D401™ – 2003

I, David Short, 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 16:06:30 ET on 07/28/2022 under Order No. 2114341191 from AIA Contract Documents software and that in preparing the attached final document I made no changes to the original text of AIA® Document A132™ – 2019, Standard Form of Agreement Between Owner and Contractor, Construction Manager as Adviser Edition, as published by the AIA in its software, other than those additions and deletions shown in the associated Additions and Deletions Report.

_____

(Signed)

_____

(Title)

_____

(Dated)

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AIA® Document A232™ – 2019

General Conditions of the Contract for Construction, *Construction Manager as Adviser Edition*

for the following PROJECT:
(Name, and location or address)

Nanuet High School Elevator Addition
101 Church Street
Nanuet, NY 10954
SED #50-01-08-03-0-003-032

THE CONSTRUCTION MANAGER:
(Name, legal status and address)

Jacobs
500 7th Ave, 17th Floor
New York, NY 12601
T. 646.908.6550

THE OWNER:
(Name, legal status and address)

Nanuet School District
101 Church Street
Nanuet, NY 10954
T. 845.343.1481

THE ARCHITECT:
(Name, legal status and address)

KSQ Architects, PC (dba KSQ Design)
215 West 40th Street, 15th Floor
New York, NY 10018
T. 914.628.3700

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

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

This document is intended to be used in conjunction with AIA Documents A132™–2019, Standard Form of Agreement Between Owner and Contractor, Construction Manager as Adviser Edition; B132™–2019, Standard Form of Agreement Between Owner and Architect, Construction Manager as Adviser Edition; and C132™–2019, Standard Form of Agreement Between Owner and Construction Manager as Adviser.

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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 Bidding Documents (including, but not limited to, Invitations to Bid, Instructions to Bidders, sample forms, the Contractor's bid or portions of the addenda relating to bidding requirements), 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.

§ 1.1.2 The Contract. The Contract Documents form the Contract for Construction (hereinafter, the "Contract"). 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 the Construction Manager or the Construction Manager's consultants, (3) between the Owner and the Architect or the Architect's consultants, (4) between the Contractor and the Construction Manager or the Construction Manager's consultants, (5) between the Owner and a Subcontractor or Sub-subcontractor (6) between the Construction Manager and the Architect, or (7) between any persons or entities other than the Owner and Contractor. The Construction Manager and Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of their duties.

§ 1.1.2.1 Where the term "Agreement," "Contract" or "Prime Contract" is used in these General Conditions, and other Contract Documents, it shall mean the separate Owner-Contractor Agreement between the Owner and each Prime Contractor identified in Conditions of the Contract (General, Supplementary and other conditions).

§ 1.1.2.2 The Contractor acknowledges and warrants that it has closely examined all the Contract Documents, that they are suitable and sufficient to enable the Contractor to complete the Work in a timely manner for the Contract Sum, and that they include all work, whether or not shown or described, which reasonably may be inferred to be required or useful for the completion of the Work in full compliance with all applicable statutes, codes, laws, ordinances and regulations.

§ 1.1.3 The Work. The term "Work" means the construction and services required by the Contract Documents, or as reasonably inferable therefrom, 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. The Work includes all of the Contractor's responsibilities as to all labor, parts, supplies, equipment, skill, supervision, transportation services, storage requirements, and other facilities and things necessary, proper or incidental to the carrying out and completion of the terms of the Contract Documents and all other items of cost or value needed to produce, construct, and fully complete the Contractor's Work identified by the Contract Documents.

§ 1.1.4 The Project. The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by other Contractors, and by the Owner's own forces and Separate Contractors.

§ 1.1.5 Contractors. Contractors are persons or entities, other than the Contractor or Separate Contractors, who perform Work under contracts with the Owner that are administered by the Architect and Construction Manager.

§ 1.1.6 Separate Contractors. Separate Contractors are persons or entities who perform construction under separate contracts with the Owner not administered by the Architect and Construction Manager.

§ 1.1.7 The Drawings. The Drawings are the graphic and pictorial portions of the Contract Documents showing the design, location and dimensions of the Work, generally including plans, elevations, sections, details, schedules, and diagrams.

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§ 1.1.8 The Specifications. The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related services and general requirements for the Project.

§ 1.1.9 Instruments of Service. Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect's consultants under their respective professional services agreements. Instruments of Service may include, without limitation, studies, surveys, models, sketches, drawings, specifications, and other similar materials including those in electronic form.

§ 1.1.10 Initial Decision Maker. The Initial Decision Maker is the person identified in the Agreement to render initial decisions on Claims in accordance with Section 15.2. The Initial Decision Maker shall not show partiality to the Owner or Contractor and shall not be liable for results of interpretations or decisions rendered in good faith.

§ 1.1.11 Miscellaneous Definitions

§ 1.1.11.1 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 care, skill, and diligence required of the Contractor by the Contract Documents.

§ 1.1.11.2 The term "any" in the Contract Documents shall be interpreted as "any and all" whenever one or more than one item would be applicable for completion of the Work.

§ 1.1.11.3 Except as otherwise explicitly provided, the words "approved" or "approval" shall mean the written approval of the Architect or the Construction Manager, or both.

§ 1.1.11.4 "Accepted," "directed," "permitted," "requested," "required," and "selected" are used herein as term connections and unless specifically noted otherwise are to mean "accepted by the Architect," "directed by the Architect," "permitted by the Architect," "requested by the Architect," "required by the Architect," and "selected by the Architect." However, no such implied meaning will be interpreted to extend the Architect's responsibility into the Contractor's areas of construction supervision.

§ 1.1.11.5 The term "as indicated" or "as shown" shall mean "as indicated in the Contract Documents."

§ 1.1.11.6 The term "include" in any form other than "inclusive" is non-limiting and not intended to mean "all inclusive."

§ 1.1.11.7 The terms "furnish" and "furnish all materials," unless specifically noted otherwise, mean "pay for, supply and deliver to the job site all new materials, systems, equipment, product, and/or other items so specified."

§ 1.1.11.8 The terms "install" and "furnish all labor," unless specifically noted otherwise, mean "pay for, perform all operations connected with installation of Work including unloading new product to be installed, supplying all necessary equipment and rigs to do the Work, test, place in operation and service, and remove all packing material."

§ 1.1.11.9 The term "product" includes materials, systems, equipment, and other items to be incorporated into the Work.

§ 1.1.11.10 The term "provide," unless specifically noted otherwise, means "furnish new, install, connect up, complete, test and place in operation and service."

§ 1.1.11.11 The term "replace" or similar term shall mean "restore," "renew," "make good," "reconstruct," or "as applicable using new product."

§ 1.1.11.12 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 where in sight in crawl spaces or service tunnels.

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§1.1.11.13 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.

§ 1.1.11.14 The terms "manufacturer" or "supplier" mean any person or entity which contracts to furnish materials to a Contractor, Subcontractor, or any Sub-subcontractor for use at the site of the Project.

§ 1.1.11.15 "Wiring" shall be understood to mean wires or cables with conduit, fittings, boxes, etc., installed complete.

§ 1.1.11.16 "Piping" shall be understood to mean all pipes, fittings, nipples, valves and all accessories connected thereto.

§ 1.1.11.17 The Contract Time is the period of time specified in Article 3 of the Agreement for completion of the Work.

§ 1.1.11.18 Terms not otherwise defined herein shall have the meanings set forth elsewhere in the Contract Documents.

§ 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. It is intended that all plumbing, mechanical, electrical, and other systems will be complete and in proper operation, and that all construction components, whether part of such systems or otherwise, will be complete and in compliance with accepted construction practice upon completion of the Work. Even if items are missing from the Drawings or Specifications, but are normally required for proper operation of plumbing, mechanical, electrical, and other systems, or to complete otherwise incomplete construction, or to meet governing code requirements, they shall be included by the Contractor, unless he sought and received contradictory interpretation or clarification from the Architect.

§ 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 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 shall be construed, to the fullest extent permitted by law, to give effect to the parties' intentions and purposes in executing the Contract.

§ 1.2.1.2 The Contractor and its Subcontractors shall evaluate and satisfy themselves as to the conditions and limitations under which the Work is to be performed, including without limitation (1) location, layout, and nature of the Project site and surrounding areas, (2) generally prevailing climatic conditions, (3) anticipated labor supply and costs, (4) availability and cost of materials, tools, equipment, (5) Owner occupancy requirements and constraints, (6) site safety logistics plan and any phased construction plan and (7) other similar issues. The Owner assumes no responsibility or liability for the physical condition or safety of the Project site or any improvements located on the Project site. The Contractor shall be solely responsible for providing a safe place for the performance of the Work. No adjustments will be made in either the Contract Sum or Contract Time for any failure by the Contractor or any Subcontractor to comply with the requirements of this Section 1.2.1.2.

§ 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. Instructions and other information furnished in the Specifications including, without limitation, items in connection with prefabricated or prefinished items, are not intended to supersede work agreements between employers and employees. Should the Specifications conflict with such work agreements, the work agreements shall be followed, provided such items are provided and finished as specified in the Contract Documents. If necessary, such work shall be performed on the Project site, instead of at the shop, by appropriate labor and in accordance with the requirements of the Drawings and Specifications.

§ 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.

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§ 1.2.4 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 or (2) comply with the more stringent requirements; either or both in accordance with the Architect's interpretation. Where the Contractor perceives a conflict, it shall inform the Architect and Owner thereof and request a decision from the Architect, which shall be promptly communicated by the Architect to the Contractor so as not to cause any delay in the performance of the Work. Any Work performed after perceiving the conflict and prior to resolution by the Architect shall be at the Contractor's risk. The terms and provisions of this Section 1.2.4, however, shall not relieve the Contractor of any of the obligations set forth elsewhere herein.

.1 The Contractor shall not scale Drawings. Dimensions on large scale drawings take precedence over dimensions on small scale drawings. The Contractor shall notify the Architect if additional dimensions are needed. The Contractor shall field verify all dimensions.

.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. The Contractor shall confirm all dimensions by field measuring. No extra charge or compensation will be allowed on account of differences between actual dimensions and the dimensions indicated on the Drawings. Any difference that may be found shall be submitted to the Architect for resolution before proceeding with the Work.

.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 the approval by the Architect before making the change.

.4 Certain portions of the Specifications are written in condensed outline form and omitted words are to be supplied by inference. Naming of an article or operations shall have the effect of stating "Contractor shall furnish, install and complete" said operation or article unless it is further qualified in the context in which it appears.

.5 When reference is made to specifications of a manufacturer, trade association, governmental agency, reference standard or similar source (such as ASTM, ASA, AISC, ACI, etc.) such is made part of these Specifications, having the force and effect as though reproduced herein, and upon entering into the Contract the Contractor acknowledges his familiarity with those pertaining to his work. The date of the reference standard shall be the latest edition at the time of signing the Contract except as specifically indicated otherwise.

.6 The Contract Drawings are intended to show the general arrangement, design, and extent of the Work and are partly diagrammatic. They are not intended to be scaled for any purpose, or to serve as shop drawings. The Contractor and its Subcontractors will cooperate with all other contractors and their respective subcontractors in determining the construction of systems, running of pipe, and locating equipment. The Contractor agrees that the failure to repeat typical details, figures, or notes on all Contract Drawings or other Contract Documents will not be a basis for claims for additional cost or time.

.7 Any necessary variations in routing or installation shall be made to conform to the intent of the Contract Documents without additional costs. Where there are intersections or obstructions involving ducts, piping, or any other equipment requiring offset of materials, the Contractor acknowledges that it gave particular consideration to clearances in advance of submitting its bid, and that no additional costs for these issues will be considered by the Owner.

.8 If conflicting conditions or interferences develop, the Contractor and its Subcontractors will confer with the other contractors and their respective subcontractors whose work is affected to determine a solution acceptable to all interested parties. The suggested solution shall be submitted to the Architect for comment and, if necessary, written approval.

.9 The Contract Documents intend a first class finished product of such character and quality as described in and reasonably inferred from the Contract Documents. The Contractor will perform its Work to be complete and operable, fitting with the work of other contractors and the Owner, and in compliance with best construction practices and the ordinances, codes, and regulations of all bodies or persons having governmental or regulatory authority over the Contractor and its Work.

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§ 1.2.5 Execution of the Contract by the Contractor is a representation that the Contractor has carefully examined the Contract Documents and the Project site, and represents that the Contractor is thoroughly familiar with the nature and location of the Work, the Project site, the specific conditions under which the Work is to be performed, and all matters which may in any way affect the Work or its performance. The Contractor further represents that as a result of such examinations and investigations, the Contractor thoroughly understands the Contract Documents and their intent and purpose, and is familiar with all applicable codes, ordinances, laws, regulations, and rules as they apply to the Work, and that the Contractor will abide by same. Claims for additional time or additional compensation as a result of the Contractor's failure to follow the foregoing procedure and to familiarize itself with all conditions and the Contract Documents will not be permitted.

§ 1.2.5.1 The Contractor certifies that it is experienced and familiar with the requirements and conditions imposed during the construction of similar work in the area. This includes, but is not limited to, "out of sequence" or "come back" work for the removal of plant, equipment, temporary wiring or plumbing, etc. This "out of sequence" work may also include phasing of construction activities to accommodate the installation of the Work at various locations and orderly fashion and the completion of Work at various locations or levels at various times. This "phasing," "out of sequence," or "come back" work shall be done at no cost to other Contractors, the Owner or Architect.

§ 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 do not own and cannot 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.

§ 1.5.3 The Contractor may not reproduce the Contract Documents in whole or in part for use as shop drawing backgrounds without the prior written consent of the Architect. If consent is given, the Architect shall determine the extent that the Contract Documents may be used in the preparation of shop drawings, as well as the fee that the Architect will be paid, if any and in the Architect's sole discretion, by the Contractor for such use of copyrighted documents.

§ 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.

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§ 1.7 Digital Data Use and Transmission

The parties shall agree upon protocols governing the transmission and use of Instruments of Service or any other information or documentation in digital form. The parties will use AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, to establish the protocols for the development, use, transmission, and exchange of digital data.

§ 1.8 Building Information Models Use and Reliance

Any use of, or reliance on, all or a portion of a building information model without agreement to protocols governing the use of, and reliance on, the information contained in the model and without having those protocols set forth in AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, and the requisite AIA Document G202™–2013, Project Building Information Modeling Protocol Form, shall be at the using or relying party's sole risk and without liability to the other party and its contractors or consultants, the authors of, or contributors to, the building information model, and each of their agents and employees.

ARTICLE 2 OWNER

§ 2.1 General

§ 2.1.1 The Owner is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Owner shall designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization. Except as otherwise provided in Section 4.2.1, the Construction Manager and the Architect do not have such authority. The term "Owner" means the Owner or the Owner's authorized representative.

§ 2.1.2 The Owner shall furnish to the Contractor, within fifteen days after receipt of a written request, information necessary and relevant for the Contractor to evaluate, give notice of, or enforce mechanic's lien rights. 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.

§ 2.1.3 The Owner, Architect or Construction Manager shall not supervise, direct or have control or authority over, nor be responsible for, the Contractor's 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 and regulations applicable to the furnishing or performance of the Work. The Owner, Architect and Construction Manager shall not be responsible for the Contractor's failure to perform or furnish the Work in accordance with the Contract Documents.

§ 2.2 Evidence of the Owner's Financial Arrangements – Intentionally Omitted.

(Paragraphs deleted)

§ 2.3 Information and Services Required of the Owner

§ 2.3.1 All permits and fees, approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities are the responsibility of the Contractor under the Contract Documents with the exception of the building permit, which the Owner will obtain from the State Education Department.

§ 2.3.2 The Owner shall retain an architect lawfully licensed to practice architecture, or an entity lawfully practicing architecture, in the jurisdiction where the Project is located. That person or entity is identified as the Architect in the Agreement and is referred to throughout the Contract Documents as if singular in number.

§ 2.3.3 The Owner shall retain a construction manager adviser lawfully practicing construction management in the jurisdiction where the Project is located. That person or entity is identified as the Construction Manager in the Agreement and is referred to throughout the Contract Documents as if singular in number.

§ 2.3.4 If the employment of the Construction Manager or Architect terminates, the Owner shall employ a successor construction manager or architect whose status under the Contract Documents shall be that of the Construction Manager or Architect, respectively.

§ 2.3.5 The Owner shall make available for inspection, upon request, that field survey or testing information of existing conditions that is known to be available and that is held by the Owner at its offices. Such records and documents are not Contract Documents, and the Owner makes no representation as to their accuracy or completeness. Notwithstanding the

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foregoing, information furnished by the Owner in the form of surveys, subsurface investigation reports, soil borings, and other material of a similar nature, is for general information only and is not a guarantee of the completeness or accuracy of such information, unless specifically noted otherwise herein. The Contractor shall verify all existing grades, conditions, and dimensions of existing physical conditions and structures and shall report any inconsistencies in writing to the Architect. The Contractor shall establish all lines and levels required to execute the Work and shall bear all costs involved, and shall be responsible for their accuracy and maintenance.

§ 2.3.6 Intentionally omitted.

§ 2.3.7 Unless otherwise provided in the Contract Documents, the Owner shall furnish to the Contractor five (5) sets of Contract Drawings and Project Manuals for use during construction for their own use and for purposes of making reproductions pursuant to Section 1.5.2. The 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. Subcontractors and other entities desiring copies of Drawings will be provided sets at the cost of printing, postage and handling.

§ 2.3.8 The Owner shall forward all communications to the Contractor through the Construction Manager. Other communication shall be made as set forth in Section 4.2.6.

§ 2.4 Owner's Right to Stop the Work

If the Contractor (1) fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2, or (2) fails to carry out Work in accordance with the Contract Documents as determined by the Owner, Architect or Construction Manager, or (3) fails or refuses to provide a sufficient amount of properly supervised and coordinated labor, materials, or equipment so as to be able to complete the Work within the Contract Time, or (4) fails to remove and discharge (within seven (7) days) any lien filed upon Owner's property by anyone claiming by, through, or under the Contractor, or (5) fails to perform the Work in a safe manner and in compliance with all applicable health and safety requirements and the Contractor's site specific health and safety plan or (6) disregards the instructions of the Architect, Owner or Construction Manager, as determined by the Owner, Architect or Construction Manager, 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. Such order or stoppage by the Owner shall not constitute grounds for termination by the Contractor under Article 14 and shall not be a basis for an extension of the Contract Time under Section 8.3 or Article 15.

§ 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 (including but not limited to all applicable health and safety requirements) and fails within a three (3) work day period after receipt of written notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may after such three (3) work day period, without prejudice to other remedies the Owner may have, correct such deficiencies. In such case an appropriate Change Order or Construction Change Directive shall be issued deducting from payments then or thereafter due the Contractor the reasonable cost of correcting such deficiencies, including the Owner's expenses and compensation for the Construction Manager's and Architect's and their respective consultants' additional services and other expenses made necessary by such default, neglect or failure. Such Change Order or Construction Change Directive shall be deemed to have been executed by the Contractor, whether or not actually signed by the Contractor. Such action by the Owner and amounts charged to the Contractor shall be equally binding upon the Contractor's performance and payment bond surety. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner.

§ 2.6 Extent of Owner's Rights

§ 2.6.1 The rights stated in this Article 2 and elsewhere in the Contract Documents are cumulative and not in limitation of any rights of the Owner (1) granted in the Contract Documents, (2) at law or (3) in equity.

§ 2.6.2 In no event shall the Owner, Architect or Construction Manager have any responsibility for the Contractor's construction means, methods, techniques, sequences or procedures or for safety precautions and programs in connection with the Work notwithstanding any of the rights and authority granted the Owner in the Contract Documents.

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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.

The term "Contractor" used herein shall include:

1. That Contractor normally responsible for that Work referenced.
2. "Prime Contractor" meaning either General Contractor, HVAC Contractor, Plumbing Contractor, Electrical Contractor, or any other Contractor whom the Owner has a direct contractual relationship for the referenced Work.
3. "Trade Contractor" meaning the Prime Contractor as above.

§ 3.1.2 The plural term "Multiple Prime Contractors" refers to persons or entities who perform construction under contracts with the Owner that are administered by the Construction Manager. The term does not include the Owner's own forces, including persons or entities under separate contracts not administered by the Construction Manager.

§ 3.1.3 The Contractor shall perform the Work in accordance with the Contract Documents.

§ 3.1.4 The Contractor shall not be relieved of obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Construction Manager or Architect in their administration of the Contract, or by tests, inspections or approvals required or performed by persons or entities other than the Contractor.

§ 3.2 Review of Contract Documents and Field Conditions by Contractor

§ 3.2.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed, and correlated personal observations with requirements of the Contract Documents.

§ 3.2.1.1 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the Contract Documents relative to that portion of the Work, as well as with information furnished by the Owner pursuant to Section 2.3.5, shall take field measurements of any existing conditions related to that portion of the Work, shall observe any conditions at the site affecting it, and shall at once report in writing to the Construction Manager and the Architect errors, inconsistencies or omissions discovered. The Contractor shall not be liable to the Owner, the Construction Manager or the Architect for damage resulting from errors, inconsistencies or omissions in the Contract Documents unless the Contractor knew or reasonably should have known of such error, inconsistency or omission and failed to report it as required by this section to the Construction Manager and the Architect. If the Contractor performs any construction activity knowing it involves, or reasonably should have known it involves, a recognized error, inconsistency or omission in the Contract Documents without such notice to the Construction Manager and the Architect, the Contractor shall assume full responsibility for such performance and shall bear sole responsibility for the costs for correction.

§ 3.2.1.2 The obligations of the Contractor under Section 3.2.1.1 and this Section 3.2.1.2 are for the purpose of facilitating construction by the Contractor and are not for the purpose of imposing an affirmative obligation on the Contractor to discover errors, omissions, or inconsistencies in the design information in the Contract Documents. The Contractor's review of the Contract Documents is made in the Contractor's capacity as a contractor and not as a licensed design professional unless otherwise specifically so provided in the Contract Documents.

§ 3.2.1.3 Failure by the Contractor to promptly report any errors, inconsistencies, or omissions in the Contract Documents discovered by the Contractor, or which the Contractor reasonably should have known or discovered, shall constitute a waiver by the Contractor of any claim that otherwise might result in a change in the Contract Sum or Contract Time.

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§ 3.2.2 The Contractor shall be presumed to have examined the Project site(s) to consider fully all conditions that may have a bearing on the Work and to have accounted for these conditions its proposal. The Contractor is deemed to be a qualified expert in the systems and construction requirements of the Work of its Contract. The Contractor hereby specifically acknowledges and declares that the Contract Documents are full and complete, are sufficient to have enabled it to determine the cost of the Work, and that the Drawings, the Specifications, and all Addenda are sufficient to enable the Contractor to construct the Work outlined therein in accordance with applicable laws, statutes, building codes, and regulations, and otherwise to fulfill all of its obligations under the Contract Documents. The Contractor shall take field measurements and verify field conditions and shall carefully compare such field measurements and conditions and other information known to the Contractor with the Contract Documents before commencing activities. Errors, inconsistencies or omissions discovered shall be reported to the Construction Manager and the Architect at once. The exactness of grades, elevations, dimensions, or locations given on any Drawings issued by the Architect, or the work installed by other Contractors, is not guaranteed by the Architect, Construction Manager or the Owner. The Contractor shall, therefore, satisfy itself as to the accuracy of all grades, elevations, dimensions, and locations. In all cases of interconnection of its Work with existing or other work, the Contractor shall verify at the site all dimensions relating to such existing or other work. Any errors due to the Contractor's failure to so verify all such grades, elevations, dimensions, or locations shall be promptly rectified by the Contractor without any additional cost to the Owner. Except as to any reported errors, inconsistencies or omissions, and except as to concealed or unknown conditions, by executing the Agreement, the Contractor represents to the Owner, Construction Manager, and the Architect that the Work required by the Contract Documents, including, without limitation, 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) the 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.

§ 3.2.3 The Contractor shall perform the Work in accordance with the Contract Documents and submittals approved pursuant to Section 3.12.

§ 3.2.4 The Contractor may submit Requests for Information ("RFI") to the Architect to help facilitate the Contractor's performance of the Work. Prior to submitting each RFI, the Contractor shall first carefully study and compare the Contract Documents, field conditions, other Owner provided information, Contractor-prepared Coordination Drawings, and prior Project correspondence and documentation to determine that the information to be requested is not reasonably obtainable from such sources. The Contractor shall submit each RFI sufficiently in advance of the date by which such information is required in order to allow the Architect sufficient time to permit adequate review and response and to permit Contractor compliance with the latest construction schedule. The Contractor shall reimburse the Owner amounts charged by the Architect for RFI responses that in the opinion of the Architect were available from a careful review of the Contract Documents, field conditions, other Owner provided information, Contractor-prepared Coordination Drawings, and prior Project correspondence and documentation.

§ 3.2.5 If the Contractor, during the progress of the Work, discovers any discrepancies between the Drawings and the Specifications, errors and/or omissions on the Drawings, or any discrepancies between physical conditions of the Work and the Drawings, and has notified the Architect and Construction Manager in writing under Section 3.2.1, no deviations from the Contract Documents shall be performed by the Contractor until it receives approval in writing from the Architect through the Construction Manager. Any Work performed after such discovery without the approval of the Architect shall be at the Contractor's sole risk and expense.

§ 3.2.6 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 Construction Manager and the Architect any nonconformity discovered by or made known to the Contractor as a RFI submitted to the Architect.

§ 3.2.7 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 RFIs pursuant to Sections 3.2.1, 3.2.2, 3.2.4, 3.2.5 or 3.2.6, the Contractor shall make a Claim as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.1, 3.2.2, 3.2.4, 3.2.5 or 3.2.6, the Contractor shall pay such costs and damages to the Owner 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 the Architect for damages resulting from errors, inconsistencies or

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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.

§ 3.2.8 The Contractor shall be responsible for laying out the Work, shall protect and preserve the established reference points and shall make no changes or relocations without the prior written approval of Owner. The Contractor shall report to the Construction Manager and Architect whenever any reference point is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points by professionally qualified personnel.

§ 3.2.8.1 The Contractor shall be required to establish centerlines, elevations and location of his work when it is required for the benefit of other Contractors needing the information to coordinate location of their work.

§ 3.2.9 Whenever the Drawings show existing or other construction not required as part of the Contract Work, it is understood that it is so shown as a matter of information and that the Owner, while believing such information to be substantially correct, assumes no responsibility thereof. The Contractor shall make itself familiar with all conditions affecting the nature and manner of conducting the Work.

§ 3.2.10 Claims for additional compensation or extension of time due to the Contractor's failure to familiarize itself with the conditions at the site will not be allowed.

§ 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, and shall complete the Work in a good and workmanlike manner in accordance with the Contract Documents. 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 subject to the coordination of the Construction Manager. Where the Drawings or Project Manual make reference to particular construction means, methods, techniques, sequences or procedures or indicate or imply that such are to be used in connection with the Contractor's Work, such reference is intended only to indicate that the Contractor's Work is to produce at least the quality of the work implied by the operations described, but the actual determination as to whether or not the described operations may be safely or suitably employed in the performance of the Contractor's Work shall be the sole responsibility of the Contractor. All loss, damage, liability, or cost of correcting defective Work arising from the employment of a specific construction means, method, technique, sequence, or procedure shall be borne solely by the Contractor.

§ 3.3.2 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors, Suppliers, 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, Suppliers or Sub-subcontractors, and for any damages, losses, costs and expenses resulting from such acts or omissions, including but not limited to reasonable attorneys' fees.

§ 3.3.3 The Contractor shall be responsible for coordinating the work of its own forces and the work of Subcontractors engaged by it to perform the Work of the Project on its behalf. The Contractor shall supply to its own work forces, and Subcontractors engaged by it to perform portions of its Work, copies of the Drawings and Project Manuals for the work to be performed by such individuals/entities on its behalf.

§ 3.3.3.1 The Contractor shall coordinate its operations and cooperate with those of other Contractors performing work on the Project or site thereof to ensure efficient and orderly installation of each part of the Work. Cooperation will be required in the arrangement for the storage of materials and in the detailed execution of the Work. The Contractor shall remain informed of the progress and the detail work of other Contractors and shall notify the Construction Manager immediately of lack of progress or defective workmanship on the part of other Contractors, where such delay or such defective workmanship will interfere with Contractor's own operations. Failure of the Contractor to keep informed of the work progressing on the site or to give notice of lack of progress or defective workmanship by others shall be construed as acceptance of the progress of work and coordination with Contractor's own Work.

§ 3.3.3.2 The Contractor's obligations under the Contract Documents shall include, without limitation, the following:

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.1 Review of all specified construction and installation procedures with its employees and/or Subcontractors, including, without limitation, those recommended by manufacturers, prior to the commencement of the relevant portion of the Work to be performed.

.2 Advising the Construction Manager and the Architect:

.1 if a specified procedure deviates from best construction practice;

.2 if following a procedure will affect any warranties, including the Contractor's general warranty; or

.3 of any objections the Contractor may have to a procedure.

.3 Proposing alternative procedures, as appropriate, which procedures shall be covered by the Contractor's warranty as described in Section 3.5 hereof.

.4 The Contractor shall be responsible for organizing and conducting pre-installation conferences and must coordinate such conferences with the Architect and the Construction Manager.

§ 3.3.3.3 The Contractor and its Subcontractors working on the Project shall attend a preconstruction conference(s) or meeting(s) as deemed necessary by the Construction Manager to coordinate all Work (e.g., demolition, installation, etc.), and as required by the Project Manual.

§ 3.3.4 The Contractor shall not be relieved of obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Construction Manager or the Architect in their administration of the Contract, or by tests, inspections or approvals required or performed by persons other than the Contractor. The Contractor shall maintain complete inspection records and test date to ensure the quality of the Work is in strict compliance with the requirements of the Contract Documents.

§ 3.3.5 Where equipment lines, piping, ductwork, and/or conduit are shown diagrammatically, the Contractor shall be responsible for the coordination and orderly arrangement of the various lines of piping and conduit included in the Work of its Contract. The Contractor shall coordinate the work of its Subcontractors and prevent all interferences between or among equipment, lines of piping, and architectural features, and avoid any unsightly arrangements in exposed areas. This Section shall not be construed as limiting any obligation of the Contractor under any other provision of the Contract Documents.

§ 3.3.6 The Contractor shall be responsible for inspection of portions of the Project already performed to determine that such portions are in proper condition to receive subsequent Work.

§ 3.3.7 The Contractor, its employees and Subcontractors, shall be subject to such rules and regulations for the conduct of Work as the Owner may establish, including but not limited to, the Construction Rules and Regulations set forth in Section 3.13.4. The Contractor shall be responsible for the enforcement among its employees of the Owner's instructions.

§ 3.3.8 The Contractor shall inspect all materials as delivered to the Project site and shall reject any materials that will not conform with the requirements of the Contract Documents when properly installed.

§ 3.3.9 The Contractor shall be responsible for and coordinate any and all inspections required by any governmental body having jurisdiction over the Project. Failure to obtain any permits, licenses or other approvals because of the failure of the Contractor to conform to this requirement shall not extend the Contract time, and the Contractor shall not be entitled to any increase in the Contract Sum therefore. In addition, any additional costs and expenses of any nature incurred by the Owner as a result of the Contractor's failure to conform to this requirement shall constitute a charge against the Contractor's Contract.

§ 3.3.10 Shutdowns: Such work as connections to existing sewers, plumbing, heating, and electrical systems shall be coordinated at a time agreeable to the Owner, the Architect, and the Construction Manager, and shall be determined and agreed to well in advance of the actual performance of such work so as to interfere as little as possible with the operation and use of the Owner's existing facilities. Shutdowns must be coordinated through the Construction Manager. The continued uninterrupted operation of all facilities of the Owner's buildings 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 these existing facilities at no increase in the Contract Sum except as otherwise specified. No mechanical, heating, plumbing, sprinkler, or electric service shall be interrupted at any time except as approved in advance by the Owner or when the buildings are not occupied and shall be coordinated with the Owner, as

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well as the Construction Manager. All communication systems must be maintained without interruption. As much related work as possible shall be performed prior to shutdowns, so as to minimize the period of shut down. All material, equipment, and manpower necessary in the performance of a shutdown shall be on site prior to interruption of service.

§ 3.4 Labor and Materials

§ 3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor (at applicable prevailing wage rates), 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. All materials provided by Contractor shall be new. The Contractor shall work continuously and expeditiously through completion of the Work. Time is of the essence.

§ 3.4.1.1 Notwithstanding any other provision of the Contract Documents, Contractor shall perform at least twenty five (25%) percent of the field work with its own full-time employees. For the purpose of the preceding sentence any part of the work performed by supervisory personnel (persons above level of foreman) or by office personnel shall not be considered part of the Work performed by Contractor's employees. Such items as bonds, certificates, shop drawings and similar items are not to be counted as satisfying the twenty five (25%) percent requirement**.**

§ 3.4.1.1 A shortage of labor in the industry shall not be accepted as an excuse for not properly manning the Project at each site.

§ 3.4.1.2 The Contractor shall be responsible for the care and protection of all equipment and materials for its Work on the Project, including equipment and material furnished by the Owner.

§ 3.4.2 Except in the case of minor changes in the Work approved by the Architect in accordance with Section 3.12.8 or ordered by the Architect in accordance with Section 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect, in consultation with the Construction Manager, and in accordance with a resulting 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, or persons who within the last five (5) days (a) having been exposed to someone having been diagnosed with a COVID-19 infection; or (b) having had a persistent cough, shortness of breath, or a fever of 100.4 or higher. The Owner reserves the right to have any persons removed from the Project upon reasonable objection.

§ 3.4.3.1 In addition to all other safety requirements, the Contractor shall provide suitable and a sufficient number of safety related facilities and personal protective equipment (PPE) at the site related to protection against the spread of COVID-19, including but not limited to handwashing stations, hand sanitizer, gloves, masks, faceshields, and other equipment as the Owner may reasonably request. Notwithstanding the foregoing, nothing herein shall be construed to delegate or relieve Contractor from having sole and exclusive responsibility for all worksite safety.

§ 3.4.4 All mechanics employed on the Project shall be persons skilled in that work which they are to perform. Work will not be approved if it does not meet the quality of workmanship as called for in the Contract Documents. If this quality of workmanship is not exactly defined herein, it shall be assumed to be the best standards of workmanship for the trade.

§ 3.4.5 Employees of the Contractor or its Subcontractors whose work is unsatisfactory to the Owner, Construction Manager or Architect, or considered by them to be unskilled or otherwise objectionable, will be immediately dismissed from the Project upon notice from the Construction Manager. Those dismissed employees shall be immediately replaced by the Contractor so as not to delay progress of the Work and at no additional cost to the Owner. All employees of the Contractor or Subcontractor shall be processed through the Owner's database which excludes sex offenders and other people not deemed safe for presence on a school site. Any person who is flagged by that system shall not be employed on site. Further, the Contractor or its Subcontractor shall not employ any person onsite who is known to them to be a sex offender as defined by New York State.

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§ 3.4.6 On receipt of the signed Contract, the Contractor will be expected to place firm orders with vendors for needed materials, including Subcontractors and major material suppliers. If deemed necessary to assure delivery of materials at times needed, the Contractor may accept delivery of such materials at any time, and may include the cost of such materials in its next monthly Application for Payment, provided such materials have actually been delivered to Contractor and properly stored by it with approval or under direction of the Architect and the Construction Manager either at the Project site or in an approved storage shed or warehouse, as provided elsewhere in these General Conditions.

§ 3.4.6.1 To the fullest extent possible, the Contractor shall provide products of the same kind, from a single source. When two or more items of same material or equipment are required (pumps, valves, air conditioning units, etc.) they shall be of the same manufacturer. Product manufacturer uniformity does not apply to raw materials, bulk materials, pipe, tube, fittings (except flanged and grooved types), sheet metal, wire, steel bar stock, welding rods, solder, fasteners, motors for dissimilar equipment units, and similar items used in the work, except as otherwise indicated. The Contractor shall provide products which are compatible within systems and other connected items. If Contractor is given option of selecting between two or more products for use on the Project, product selected shall be compatible with products previously selected, even if previously selected products were also options.

§ 3.4.6.2 The Contractor is responsible for providing products and construction methods compatible with products and construction methods of other contractors. If a dispute arises between the Contractor and other contractors over concurrently selectable but incompatible products, the Architect will determine which products shall be used.

§ 3.4.6.3 With respect to sitework materials, all products submitted for use and incorporated into the Project shall be on the Approved List of Materials and Equipment published by the NYSDOT Materials Bureau, most recent edition.

§ 3.4.6.4 When required, off-site storage shall be the responsibility of the Contractor. If materials are stored off site, the Contractor shall furnish proof of title by Owner and provide a certificate of insurance demonstrating adequate insurance coverage.

§ 3.4.6.5 The Contractor shall deliver all materials at such times as will ensure speedy and uninterrupted progress of the Work.

§ 3.4.6.6 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. The Owner reserves the right to object to Contractor's use of persons who appear unfit or not skilled in the tasks assigned to them. Should any disorderly, incompetent, unfit, unskilled or objectionable person be hired or employed by the Contractor, upon or about the Premises of the Owner, for any purpose or in any capacity, they shall, upon request of the Owner, be removed from the Project and not again be assigned thereon without the written permission of the Owner.

§ 3.4.6.7 Unless otherwise stated in the Contract Documents or the bidding requirements, the Contractor, within 10 days of receipt of the signed Contract, shall furnish in writing the Owner through the Construction Manager and Architect a list showing the name of the manufacturer proposed to be used for each of the products identified in the Specifications, and where applicable, the name of the installing Subcontractor. The Architect will promptly reply to the Contractor in writing stating whether or not the Owner or Architect, after due investigation, has reasonable objection to any such proposed manufacturer or installer. If adequate data on a proposed manufacturer or installer is not available, the Architect may state that action will be deferred until the Contractor provides additional data. Failure of the Owner or Architect to promptly reply shall constitute notice of no reasonable objection. Failure to object to a manufacturer or installer shall not constitute a waiver of the requirements of the Contract Documents, and products furnished by the listed manufacturer shall conform to such requirements**.**

§ 3.4.7 The Contractor warrants that it has good title to all materials used by it in, on or in connection with the Work. No materials or supplies shall be purchased by the Contractor or any of its Subcontractors that are subject to any chattel mortgage, conditional sale, or other agreement by which an interest is retained by the seller.

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§ 3.4.8 The Contractor shall make every reasonable effort to avoid labor disputes and to insulate the Owner, Architect and Construction Manager from the effects of labor disputes should any arise. There shall be no strikes, picketing, work stoppages, slowdowns, or other disruptive activity at the Project for any reason by anyone employed or engaged by the Contractor to perform its portion of the Work. There shall be no lockout at the Project by the Contractor. The Contractor shall be responsible for providing the manpower required to proceed with the Work under any circumstance. For the purposes of this Section, every reasonable effort shall include, but not necessarily be limited to:

.1 make all necessary arrangements to reconcile, without delay, damage or cost to the Owner and without recourse to the Architect, the Construction Manager or the Owner, any conflict between its Agreement with the Owner and any agreements or regulations of any kind at any time in force among members or councils which regulate or distinguish what activities shall not be included in the work of any particular trade;

.2 requiring employees, Subcontractors, suppliers and others to use reserve gates which shall be established for the Project;

.3 rearranging work schedules for the Contractor's Work or the work of its Subcontractors; and

.4 including in Contractor's agreements with its Subcontractors the right to fully implement all provisions of this Section.

§ 3.4.8.5 In case the progress of the Work is effected by any undue delay in furnishing or installing any items or materials or equipment required pursuant to the Contract because of a conflict involving any such labor agreement or regulation, the Owner may require that other material or equipment of equal kind and quality be provided pursuant to a Change Order or Construction Change Directive but in no case shall the amount of such change be charged by the Contractor to the Owner as an additional cost to perform the Work.

§ 3.4.8.5.1 No extension of time shall be granted for delays caused by labor or material disputes.

§ 3.4.8.5.2 Should it become necessary to create a separate entrance for a Contractor involved in a dispute, all costs associated with creating that entrance shall be borne by the Contractor involved in the dispute. Such costs shall include, but not limited to signage, fencing, temporary roads and security personnel as deemed necessary by the Owner for the safety of the occupants of the site.

§ 3.4.8.6 The Contractor shall ensure that its Work continues uninterrupted during the pendency of a labor dispute.

§ 3.4.8.7 The Contractor shall be liable to the Owner for all damages suffered by the Owner occurring as a result of work stoppages, slowdowns, disputes or strikes arising from the labor practices of the Contractor or its Subcontractors, Suppliers or Sub-subcontractors.

§ 3.4.9 The Contractor and its Subcontractors employed upon the Work shall abide by and conform with all labor laws and to all other laws, ordinances, and legal requirements now or hereafter applicable to the Work and the construction area.

§ 3.4.10 The Contractor and its Subcontractors shall be responsible for protection of the Work, the work of Separate or other Contractors, and existing construction, both on and off the site, and in the event of damage, shall restore the same to the original condition at no additional cost to the Owner.

§ 3.4.11 If the Work is to be performed by trade unions, the Contractor shall, with the consent of the Owner and the Architect, which shall not be unreasonably withheld, make all necessary arrangements to reconcile, without delay, damage, or cost to the Owner, any conflict between the Contract Documents and any agreements or regulations of any kind, at any time in force among members or councils that regulate or distinguish what activities are included in the work of any particular trade.

§ 3.4.12 No new asbestos containing building materials shall be used in construction. No materials containing asbestos in any form shall be used in, on, or around the Owner's buildings**.**

§ 3.4.13 Equivalents and Substitutions

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§ 3.4.13.1 Equivalents. In the Specifications, one 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, it shall indicate in writing, and prior to award of the Contract, what kind, type, brand or manufacturer is included in the base bid for the specified item. The Contractor shall follow the submission requirements for equivalents as provided in the Project Manual. Any proposed equivalent shall not be purchased or installed by the Contractor without the Architect's review process having been completed and the product accepted by written notification.

§ 3.4.13.2 Substitutions. After the Contract has been executed, the Owner, Construction Manager and Architect will consider a formal request for the substitution of products in place of those specified only under conditions set forth in the Specifications.

§ 3.4.13.3 By making said requests in conformance with procedures established herein and elsewhere in the Project Manual, the Contractor: (1) represents that it has personally investigated the proposed substitute product and has determined that it is equal to or superior in all respects to that specified; (2) represents that the warranty for the substitution will be the same, or greater than, that applicable to the specified product; (3) certifies that the cost data is complete and includes all related costs under the Contract, including professional services necessary and/or required for the Architect or its consultants to implement said substitution and waives any and all claims for additional costs related to the substitution which subsequently become apparent; (4) represents that it will coordinate the installation of the accepted substitute, making all such changes to the Drawings effected by the change, including but not limited to the electrical, plumbing, site work and heating and ventilating Specifications as may be required for the Work to be complete in all respects; and (5) represents that it will reimburse the Owner for all additional costs billed by the Architect or its consultants for the review of the substitution request(s), any redesign of the Work of this Contractor or associated contractors, additional site visits related to the substitution request and for the work to prepare Change Orders or Construction Change Directives.

§ 3.4.13.4 Substitutions and alternates may be rejected without explanation and will be considered only under one or more of the following conditions:

1. required for compliance with interpretation of code requirements or insurance regulations then existing;
2. unavailability of specified products, through no fault of the Contractor;
3. subsequent information discloses inability of specified products to perform properly or to fit in designated space;
4. manufacturer/fabricator refuses to certify or guarantee performance of specified products as required;
5. when in the judgment of the Owner, a substitution would be substantially in the Owner's best interests, in terms of costs, time or other considerations; and
6. where the Contractor establishes that the substituted product is equal or better than the specified product in all respects.

§ 3.5 Warranty

§ 3.5.1 The Contractor warrants to the Owner, Construction Manager and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants good title to all materials, supplies, and equipment installed or incorporated in the Work. 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. All warranties and guarantees specifically called for by the Contract Documents shall expressly run to the benefit of the Owner. If required by the Architect, the Contractor shall furnish satisfactory evidence (including reports of required tests) as to the kind and quality of materials and equipment. All materials and equipment shall be applied, installed, connected, erected, used, cleaned, and conditioned in accordance with instructions of the applicable supplier, except as otherwise provided in the Contract Documents. The Contractor shall perform the Work in strict accordance with the Contract Documents and best industry practices. The Contractor, at its expense, shall upon demand by the Owner, Construction Manager or Architect remove and replace materials not meeting specifications or materials failing to perform as represented or warranted by the manufacturer, regardless of whether incorporated into the Work. The Contractor shall promptly replace or correct any Work or materials that the Owner, Construction

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Manager or Architect rejects as failing to conform to the requirements of the Contract Documents. The foregoing warranty obligations shall survive completion or termination of the Contract, are not limited by the provisions of Article 12, and are in addition to and not in limitation of any other warranty, right or remedy set forth in the Contract Documents or otherwise prescribed by law.

§ 3.5.2 The Contractor warrants the Work and its performance to the Owner unconditionally. The Contractor shall perform all warranty obligations and responsibilities for the Work under the Contract Documents. The Contractor, at its own expense, shall remedy defects due to improper and/or defective workmanship or materials appearing within **two (2) years** of the Contractor completing the Work or such longer period as may be set forth in the Contract Documents ("Correction Period"), as further described in Article 12 of this Agreement. Upon completion of the Work, the Contractor shall assign and provide to the Owner all written warranties and guarantees from Subcontractors, suppliers, and material or equipment manufacturers. The Contractor shall fully cooperate with the Owner in the event the Owner pursues remedies under any warranties or guarantees assigned to the Owner. The Contractor acknowledges that its obligations to the Owner under this Section 3.5.2 and under Section 12.2 are joint and several with its Subcontractors, suppliers, vendors and manufacturers of all materials and equipment supplied on account of the Work. The Contractor is responsible for all harm caused by its failure to maintain equipment and materials installed through the Contractor's completion of its Work. The requirements of this Section 3.5 will continue notwithstanding termination of the Contractor for any reason. The foregoing warranty obligations are not limited by the provisions of Article 12, do not limit the Owner's assertion of a breach of warranty obligations following the three-year Correction Period, and are in addition to and not in limitation of any other warranty set forth in the Contract Documents or required by law.

§ 3.5.3 No warranties or guarantees by the Contractor will deprive the Owner of any cause of action, right, or remedy otherwise available for breach of any of the provisions of the Contract Documents. The Correction Period does not limit the time in which the Owner may pursue any such action, right, or remedy.

§ 3.5.3.1 The Contractor shall deliver to the Owner upon completion of all work under its Contract, its written guarantee made out to the Owner in a form acceptable to the Owner, guaranteeing (and he does so guarantee) all of the Work under the Contract to be free from faulty materials, and free from improper workmanship, and guarantees against injury from proper and usual wear and aging. This guarantee shall be made to cover (and does cover) a period of two (2) years from the date of Substantial Completion all work under the Contract, or for a longer period where so stipulated in the Contract Documents.

§ 3.5.4 All required maintenance shall be the Contractor's responsibility until the Owner has accepted the Project as complete, all required maintenance and user's manuals have been turned over to the Owner, and the Owner's designated personnel have been instructed in the maintenance and operation of all applicable materials. This maintenance shall include a complete turnover procedure at the time of completion, including complete cleaning, testing and adjustment. The Contractor shall keep records of all such maintenance performed as required by this Section, including work performed and times and dates on which it was performed. These records shall be turned over to the Owner at closeout.

§ 3.5.5 Neither final payment nor provision in the Contract Documents nor partial or entire occupancy of premises by Owner shall constitute an acceptance of Work not done in accordance with the Contract Documents or relieve the Contractor of liability in respect to any express warranties or responsibilities for faulty or defective materials or workmanship.

§ 3.6 Taxes

Except as otherwise specified, the Contractor shall pay sales, consumer, use and similar taxes for the Work or portions thereof provided by the Contractor that are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

§ 3.6.1 The Owner is exempt from payment of federal, state, and local sales and compensation use taxes on all supplies and materials incorporated into and becoming an integral component part of the structures, buildings, or real property pursuant to this Contract. Such taxes are therefore not to be included in the Contractor's bid or the Contract Sum. The Owner shall deliver to the Contractor the appropriate exemption certificate required to be supplied by the Owner, and the Contractor and its Subcontractors and materialmen shall be solely responsible for obtaining and delivering any and all exemption or other certificates and for furnishing a Contractor Exempt Purchase Certificate or other appropriate certificates to all persons, firms, or corporations from whom they purchase supplies, materials, and equipment for the performance of the Work.

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§ 3.6.1.1 The Contractor's attention is called to fact that materials not actually incorporated into Work will not be exempt from payment of sales or compensating use taxes, and the Contractor and its Subcontractor shall be responsible for and shall pay any and all applicable taxes. This will apply to such things as:

.1 construction machinery and equipment including rentals or repair parts;
.2 The Contractor's office supplies;
.3 The Contractor's supplies, tools and miscellaneous equipment including forms, materials, and scaffolding (whether purchased or rented);
.4 temporary heat;
.5 telephone or electric services; and
.6 any other items purchased or rented by the Contractor for the Contractor's use in performing its Work and not incorporated into realty.

§ 3.6.2 The Contractor accepts full and exclusive liability for payment of any and all contributions, assessments or taxes for unemployment insurance or old age insurance, or annuities now or hereafter imposed by the government of the United States, or by the government of any city, county or state of United States, which are measured by salaries or other remuneration paid to persons employed by the Contractor or any Subcontractor for Work performed under this Contract.

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

§ 3.7.1 The Contractor shall, as soon as practicable, furnish the Owner, Architect, and Construction Manager with copies or certificates of all permits, fees, licenses, and inspections necessary for the proper execution and completion of the Work, including, without limitation, all applicable building permits other than those required of the Owner under Sections 2.3.1. All inspection fees and other costs of such permits and licenses required to be obtained by the Contractor as may be imposed by any municipal or other entity shall be paid by the Contractor and shall not serve as the basis for any increase in the Contract Sum.

§ 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. If the Contractor fails to give such notices, it shall be liable for and shall indemnify and hold harmless (a) the Owner, its consultants, employees, officers and agents and (b) the Architect, Construction Manager and their consultants, employees, officers and agents against any resulting fines, penalties, judgments, or damages, including reasonable attorney's fees, imposed on or incurred by the parties indemnified hereunder.

§ 3.7.2.1 In accordance with New York State Labor Law Article 8, Section 220, subd. 3-a(a), the Contractor shall submit to the Owner within 30 days after issuance of Contractor's first payroll, and every 30 days thereafter, a transcript of the original payroll record, subscribed and affirmed as true under the penalties of perjury.

§ 3.7.2.2 The Contractor shall comply with all applicable New York State Department of Labor requirements, including the provision that every worker employed in performance of a public work contract shall be certified as having completed an OSHA 10-hour safety training course. The Contractor and its Subcontractors shall be solely responsible for compliance with this requirement with respect to their employees. The Contractor's or Subcontractor's failure to comply with this requirement shall not transfer or in any way impose the responsibility for worker safety upon the Owner or the Architect.

§ 3.7.3 If the Contractor performs Work 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 all costs attributable to the correction thereof or related thereto, including reimbursement to the Owner for any additional services required of the Construction Manager or Architect, or both, as well as all fines and penalties, if any.

§ 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 give prompt written notice to the Owner, Construction Manager, and the Architect of such conditions before they are disturbed or affected work is performed and in no event later than three (3) business days after first observance of the conditions. The Architect or Construction Manager will promptly investigate such conditions and, if

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the Architect, in consultation with the Construction Manager, determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend an equitable adjustment in the Contract Sum or Contract Time, or both. If the Architect, in consultation with the Construction Manager, determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner, Construction Manager, and Contractor in writing, stating the reasons. If the Contractor disputes the Architect's determination or recommendation, it may proceed as provided in Article 15. No adjustment in the Contract Time or Contract Sum will be permitted, however, in connection with a concealed or unknown condition that does not differ materially from those conditions disclosed or that reasonably should have been disclosed by the Contractor's (1) prior inspections, tests, and reviews, or (2) inspections, tests, and reviews the Contractor had the opportunity to make or should have performed in connection with the Project.

§ 3.7.5 If, in the course of the Work, the Contractor encounters human remains or recognizes the existence of burial markers, archaeological sites or wetlands not indicated in the Contract Documents, the Contractor shall immediately suspend any operations that would affect them and shall notify the Owner, Construction Manager, and Architect. Upon receipt of such notice, the Owner shall promptly take any action necessary to obtain governmental authorization required to resume the operations. The Contractor shall continue to suspend such operations until otherwise instructed by the Owner but shall continue with all other operations that do not affect those remains or features. Requests for adjustments in the Contract Sum and Contract Time arising from the existence of such remains or features may be made as provided in Article 15.

§ 3.8 Allowances

§ 3.8.1 The Contractor shall include in the Contract Sum all allowances stated in the Contract Documents. Items covered by allowances shall be supplied for such amounts and by such persons or entities as the Owner may direct, but the Contractor shall not be required to employ persons or entities to whom the Contractor has reasonable objection.

§ 3.8.2 Unless otherwise provided in the Contract Documents:

.1 allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;

.2 Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit, ,including the costs for bonds 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. The Contractor is not entitled to overhead and profit on unexpended allowance amounts or any portions thereof.

§ 3.8.3 Materials and equipment under an allowance shall be selected by the Owner with reasonable promptness.

§ 3.9 Superintendent

§ 3.9.1 Prior to starting the Work, the Contractor shall designate the Project Manager, Superintendent and other key individuals who shall be assigned to the Project through and including Final Completion. Such designations shall be in writing and provided to the Construction Manager, Architect and Owner and shall include the qualifications of such individuals. The Superintendent shall be in attendance at the Project site throughout the work, remain on the Project site not less than eight hours per day, five days per week, until termination of the Contract, unless the job is suspended, work is stopped by the Owner, or no work is scheduled. The Superintendent shall be approved by the Owner in its sole discretion. Said representatives shall be qualified in the type of work to be undertaken and shall not be changed during the course of construction without the prior written consent of the Owner. Should a representative leave the Contractor's employ, the Contractor shall promptly designate a new representative. The Owner shall have the right, at any time and in its sole discretion, to direct a change in the Contractor's representatives if their performance is unsatisfactory. In the event of such a demand, the Contractor shall within seven (7) days after notification thereof, replace said individual(s) with an individual(s) satisfactory to the Owner, in the Owner's sole discretion. If said replacement is disapproved, the Contractor may, at the Owner's option, be terminated for cause. The Superintendent shall represent the Contractor, and communications given to the Superintendent shall be as binding as if given to the Contractor. The Owner shall have no obligation to direct or monitor the Contractor's employees. All references herein to the Superintendent shall be taken to mean the Contractor's superintending staff. Each Subcontractor shall designate

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the Project Manager, Superintendent and other key individuals who shall be assigned to the Project. Important communications shall be confirmed in writing. Other communications shall be similarly confirmed on written request in each case. The Contractor's Superintendent shall attend all Project meetings, regardless of whether held prior to or following Substantial Completion of the Work.

§ 3.9.2 The Contractor shall provide, or otherwise see that, the Project Manager, or Superintendents or responsible workers of the Contractor and its major Subcontractors are equipped with cellular phones and radios. The Contractor shall provide the Owner, the Construction Manager, and the Architect with the number for each phone and worker.

§ 3.9.3 The Contractor's supervisory personnel, including Superintendents and their assistants, shall be versed in the English language. In the event the Contractor's supervisory personnel, Superintendents and their assistants are not versed in the English language, the Contractor shall employ the services of a full-time on-site interpreter to facilitate communications with such supervisory personnel.

§3.9.4 The Contractor shall not reduce or terminate supervision of the Work, nor change the superintendent without the prior written approval of the Owner.

§3.9.5 If, for any reason, the Contractor takes an action resulting in any of the changes noted in Subsection 3.9.4, the Owner may take remedial action to ensure continued progress of the Work, including the hiring of suitable supervisory personnel, and charge the Contractor all costs associated with these remedial actions including the costs of legal and additional construction management and architectural services.
§3.9.6 The Contractor shall furnish the Construction Manager, in writing the names, addresses and telephone number of the members of his organization who can be contacted in the event of an off-hours emergency at the building.

§3.9.6 The Contractor shall attend progress meetings with the Construction Manager and such other persons the owner may require. The progress meetings shall include all key personnel on the job, including the contractor and subcontractors, or other persons in charge of various phases of the work.

§3.9.7 Prior to the commencement of Work, the Contractor shall provide the Construction Manager and the Architect with:
.1 A written list of subcontractors, sub-subcontractors, suppliers and vendors with names, addresses, telephone numbers, and descriptions of the work they shall perform or furnish;
.2 The name, address and telephone number of the bonding company, banking and insurance company for the Contractor including the name, address and telephone number of each bonding company's primary contact representative for the Project;
.3 Detailed Subcontractor schedules indicating the approximate quantity of shop drawings, sequence, timing and man loading; and
.4 A cash flow projection for the life of the Project, including a schedule and graph showing the amount of Work projected to be completed each month or billing period and a dollar value for the anticipated billings each month or billing period. This shall be completed after an agreed upon schedule of values has been approved by the Construction Manage

§ 3.10 Contractor's Construction and Submittal Schedules
§ 3.10.1 The Contractor, promptly, but in no event later than 14 days, after being awarded the Contract, shall prepare and submit for the Owner's and Architect's information and the Construction Manager's approval a Contractor's construction schedule for the Work in electronic format with predecessor logic. The construction 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 Contractor's construction schedule shall provide for the orderly progression of the Work to completion, and shall not exceed time limits current under the Contract Documents. The Contractor's construction schedule shall be revised at appropriate intervals as required by the conditions of the Work and Project.

(Paragraph deleted)
§ 3.10.1.1 Time is of the essence for this Project. The Work shall be performed continuously and without interruption, so that all Work can be completed in the time set forth in the Contract Documents.

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§ 3.10.1.2 The sequence of the Work shall be scheduled with the Owner so as to minimize interference with the Owner's use of existing structures, and the Owner's approval shall be obtained prior to starting of the Work.

§ 3.10.1.3 The Contractor shall conform to the most recent Project Schedule, and all Work shall be completed on or before the dates established in the Contract Documents. The Contractor shall monitor the progress of the Work for conformance with the requirements of the Project Schedule and shall promptly advise the Owner and Construction Manager of any delays or potential delays.

§ 3.10.2.1 The Construction Manager shall prepare, publish, and, from time-to-time, revise a master integrated Project Schedule based upon the construction schedules submitted by the various Prime Contractors. Failure by the Contractor to furnish any required schedule or schedule revision in a timely manner shall entitle the Construction Manager to prepare a schedule for the Contractor's Work, to which the Contractor shall be bound.

§ 3.10.2.2 The Contractor shall cooperate with the Construction Manager in scheduling and performing the Contractor's Work to avoid conflict, delay in or interference with the Work of other Contractors or the construction or operations of the Owner's own forces. The Owner shall have the right, without penalty, to direct the Contractor to delay, postpone or reschedule any portion of the Work that may interfere with or disrupt the operations of the Owner.

§ 3.10.3 The Contractor shall conform to the most recent Project Schedule.

§ 3.10.4 In the event the Owner determines that the performance of the Work has not progressed to the level of completion required of the Contract Documents or that the Contractor has failed to maintain its construction schedule or the Project Schedule, the Owner shall have the right to order the Contractor to take corrective measures necessary to expedite the progress of construction including without limitations, additional shifts, overtime, additional manpower or equipment as well as other similar measures (hereinafter referred to collectively as "extraordinary measures"). Such extraordinary measures shall continue until the progress of Work complies with milestone and critical path dates set forth in the Contract Documents and the Project Schedule. The Contractor shall not be entitled to an adjustment in Contract Sum or Contract Time in connection with extraordinary measures required by the Owner.

§ 3.10.5 The Contractor shall prepare a submittal schedule, promptly after being awarded the Contract and thereafter update it as necessary to maintain a current submittal schedule, and shall submit the schedule(s) for the Construction Manager's and Architect's approval. The Architect and Construction Manager's approval shall not unreasonably be delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Construction Manager and Architect reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, 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.

§ 3.10.6 The Contractor shall participate with other Contractors, the Construction Manager and Owner in reviewing and coordinating all schedules for incorporation into the Project Schedule that is prepared by the Construction Manager. The Contractor shall revise the construction schedule and submittal schedule as deemed necessary by the Construction Manager to conform to the Project Schedule and the Contract Documents.

§ 3.10.7 The Contractor shall perform the Work in general accordance with the most recent construction schedules submitted to the Owner, Construction Manager and Architect and incorporated into the approved Project Schedule. The Contractor shall monitor the progress of the Work for conformance with the requirements of its construction schedule and Project Schedule and shall promptly advise the Owner of any delays or potential delays affecting the critical path.

§ 3.10.8 If the Contractor fails to maintain the approved construction schedule or Project Schedule and meet all critical path dates for the Work, the Owner may request a recovery plan from the Contractor and reserves the right to withhold payment until such time as the Contractor submits a recovery plan. The recovery plan must show how the Work may plausibly be brought on schedule, including, as necessary, acceleration of the Work by means of overtime, additional crews, additional shifts, additional equipment or re-sequencing of the Work to achieve completion of the remaining critical path dates in the construction schedule or Project Schedule. The Contractor shall submit as part of its recovery plan: (i) a "resource loaded" schedule showing the Contractor's plan to deploy manpower per trade, per work area, per day, together with essential materials and equipment, and other resources necessary to timely accomplish the Work;

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and (ii) a two-week "look ahead" schedule identifying tasks to be accomplished within the coming two week period, the work areas and categories of work, and necessary manpower resources, together with other data necessary to demonstrate to the Owner the viability of the Contractor's recovery plan ("2 Week Plans"). The Contractor shall continue to submit 2 Week Plans until either the Contractor demonstrates that the Project Schedule has recovered from the unexcused delay, or the Owner notifies the Contractor in writing that further 2 Week Plans are no longer required. The cost of preparing and performing the recovery plan shall be borne solely by the Contractor. No approval or consent by the Owner of any plan for resequencing or acceleration of the Work submitted by Contractor shall constitute a waiver by Owner of any damages or losses which the Owner may suffer by reason of such resequencing or the failure of Contractor to meet the Substantial Completion Date or the final completion date.

§ 3.10.9 The Contractor specifically represents and warrants to the Owner that that the Contract Sum and the Contract Time contemplate compliance with all current, and reasonable foreseeable future, federal, state and local "Stay at Home," "Social Distancing" and related orders, regulations and guidance related to limiting the spread of COVID-19 disease (the "COVID Requirements"). Accordingly, the Contractor hereby waives any claim for an increase in the Contract Sum or an extension of the Contract Time on account of the COVID Requirements. The Contractor shall promptly notify the Owner of any COVID Requirements that would impact the Project.

§ 3.10.10 Due to the ongoing COVID-19 pandemic and the resulting uncertainty with regard to, among other things, (a) what restrictions, if any, will be applicable to construction activities due to federal, state or local orders, laws, regulations or rules related to the COVID-19 pandemic (including, without limitation, social distancing, PPE, cleaning and disinfection requirements) and (b) the duration of any restrictions imposed on construction activities, the Owner may modify the schedule set forth in the Contract Documents and the Project Schedule. Similarly, restrictions, if any, that will be or are applicable to construction activities due to federal, state or local orders, laws, regulations or rules related to the COVID-19 pandemic (including, without limitation, social distancing, PPE, cleaning and disinfection requirements) may cause the Owner to have the Work or the Project commence later than the date specified in the Contract Documents. The Contractor acknowledges and agrees that there should be no additional compensation paid for schedule modifications caused directly or indirectly by the COVID-19 pandemic. The Contractor further acknowledges and agrees that its sole remedy for any schedule modifications or delays caused directly or indirectly by the COVID-19 pandemic shall be an extension of the Contract Time, if warranted. The Contractor further acknowledges and agrees that it shall have on file and provide a copy to the Owner of its written COVID-19 business reopening plan, and it shall comply in all respects with such plan for the duration of the Project. The Contractor, not the Owner, shall be responsible for compliance with its COVID-19 business reopening plan and all safety requirements associated with COVID-19 protections for workers and the general public.

§ 3.11 Documents and Samples at the Site

§ 3.11.1 The Contractor shall maintain at the site for the Owner one copy of the Drawings, Specifications, Addenda, Change Orders and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and one copy of approved Shop Drawings, Product Data, Samples and similar required submittals. These documents shall be available to the Architect and delivered to the Construction Manager for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

§ 3.11.2 The Contractor shall maintain at the site, and shall make available to the Owner, Construction Manager and Architect, one record copy of the Drawings (the "Record Drawings") in good order. The Record Drawings shall be prepared and updated during the prosecution of the Contractor's Work. The prints for Record Drawing use will be a set of black line prints provided by the Architect to the Contractor at the start of construction. The Contractor shall maintain said set in good condition and shall use colored pencils to mark up said set with "record information" in a legible manner to show: (i) deviations from the Drawings made during construction; (ii) details in the Work not previously shown; (iii) changes to existing conditions or existing conditions found to differ from those shown on any existing drawings; (iv) the actual installed position of equipment, piping, conduits, light switches, electric fixtures, circuiting, ducts, dampers, access panels, control valves, drains, openings, and stub-outs, etc.; (v) architectural and structural changes in the design; and (vi) such other information as either the Owner or Architect may reasonably request. At the completion of the work, the Contractor shall transfer all information on record drawings to reproducible drawings with new information clouded and noted. Such drawings shall be stamped with the Contractor's name and "AS-BUILT" in the lower righthand corner. The colored record drawing and the as-built reproducible drawing shall be forwarded to the Construction Manager for delivery to the Owner. Final payment and any retainage shall not be due and owing to Contractor until the Record and As-Built drawings receive the approval from the Architect and the Owner (and all other closeout requirements are met).

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§ 3.11.3 The Contractor shall maintain all approved permit drawings in a manner so as to make them accessible to government inspectors and other authorized agencies having jurisdiction over the Project. All approved drawings shall be wrapped, marked and delivered to the Owner within 60 days of final completion of the Contractor's Work.

§ 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. Each submittal shall bear written confirmation that the Contractor has satisfied its obligations under the Contract Documents with respect to the Contractor's review and approval of the submittal. The Contractor shall comply with the provisions and procedures for Shop Drawings, Product Data, and Samples set forth in Specifications Section 01 33 00, "Submittal Procedures."

§ 3.12.2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams, operating and maintenance procedures, 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 (1) demonstrate how the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents, and (2) show a system or product's ability to meet applicable criteria for those portions of the Work for which the Contract Documents require submittals. Review by the Architect and Construction Manager is subject to the limitations of Sections 4.2.10 through 4.2.12. Informational submittals upon which the Construction Manager and Architect are not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Construction Manager or Architect without action.

§ 3.12.4.1 Shop drawings and product submittals for all site improvement, architectural, structural, mechanical, electrical and signal work shall be submitted to the Architect for its review. Refer to Contract (General, Supplementary and other conditions) Section on "SUBMITTALS" for more complete information.

§ 3.12.4.2 The Contractor represents and warrants that all shop drawings shall be prepared by a person or entity possessing expertise and experience in the trade for which the shop drawing has been prepared and, if required by the Contract Documents or law, by a licensed professional engineer.

§ 3.12.5 The Contractor shall review for compliance with the Contract Documents, approve, and submit to the Architect, with copies to the Construction Manager, Shop Drawings, Product Data, Samples, and similar submittals required by the Contract Documents, in accordance with the Project submittal schedule approved by the Construction Manager and Architect or, in the absence of an approved Project submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of other Contractors, Separate Contractors, or the Owner's own forces. The Contractor shall cooperate with the Construction Manager in the coordination of the Contractor's Shop Drawings, Product Data, Samples, and similar submittals with related documents submitted by other Contractors.

§ 3.12.5.1 No extension of time will be granted to the Contractor because of failure to have shop drawings, product data, and samples submitted in ample time to allow for review by the Architect or its consultants.

§ 3.12.6 By submitting Shop Drawings, Product Data, Samples, and similar submittals, the Contractor represents to the Owner, Construction Manager, and Architect, that the Contractor has (1) reviewed and approved them, (2) determined and verified materials, field measurements and field construction criteria related thereto, or will do so, and (3) checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

§ 3.12.7 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples, or similar submittals, until the respective submittal has been

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reviewed and approved by the Architect. Resubmission of rejected documents shall be performed within 10 calendar days, or sooner if required by the progress of construction. No claim for delay or cost shall be accepted as a result of rejected submittal documents. If the Architect is required to review the Contractor's submittal more than twice, the Contractor shall bear the cost and expense associated with such additional review as set forth in the Project Manual.

§ 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 requirements of the Contract Documents by the Architect's approval of Shop Drawings, Product Data, Samples or similar submittals unless the Contractor has specifically informed the Construction Manager and Architect in writing of such deviation at the time of submittal and (1) the Architect has given written approval to the specific deviation as a minor change in the Work, or (2) a Change Order or Construction Change Directive has been issued authorizing the deviation. The Contractor shall not be relieved of responsibility for errors or omissions in Shop Drawings, Product Data, Samples or similar submittals by the Architect's approval thereof.

§ 3.12.9 The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples or similar submittals, to revisions other than those requested by the Construction Manager and Architect on previous submittals. In the absence of such written notice, the Architect's approval of a resubmission shall not apply to such revisions. Resubmission of rejected documents shall be performed within ten (10) calendar days. No claim for delay or cost shall be accepted as a result of rejected documents.

§ 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 Construction Manager and Architect at the time and in the form specified by the Architect.

§ 3.12.11 The Architect's review of the Contractor's submittals will be limited to examination of an initial submittal and one resubmittal. The Owner is entitled to obtain reimbursement from the Contractor for amounts paid to the Architect for evaluation of additional resubmittals.

§ 3.13 Use of Site

§ 3.13.1 The Owner shall not be liable to the Contractor, subcontractors of any tier, suppliers, their employees or anyone else with respect to the condition of the Project site. The Owner shall have the right to refuse admittance to the site to any agent or employee of the Contractor, its subcontractors of any tier, or its suppliers whose presence the Owner deems hostile to the Owner's interests. The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities and the Contract Documents and shall not unreasonably encumber the site with materials or equipment. The use of the Owner's assets and property are extremely limited. The Contractor shall fully comprehend the intent of the Contract

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Documents pertaining to site and building limitations including, without limitation, Division 1 Specifications sections, the phased construction plan, and the site safety and logistics plan(s).

§ 3.13.2 The Contractor shall coordinate the Contractor's operations with, and secure the approval of, the Construction Manager before using any portion of the site.

§ 3.13.3 The Contractor shall perform and shall ensure that all Subcontractors and suppliers perform all Work in a manner that permits reasonable access to the Project site and to all adjacent premises. The Contractor shall not, and shall not permit any Subcontractor or supplier to, conduct the Work in a manner that disturbs or that could be reasonably anticipated to disturb operations and persons located in or on portions of the site not affected by the Work. The occupied portion of any of the Owner's buildings shall always comply with the minimum requirements necessary to maintain a certificate of occupancy.

§ 3.13.4 Construction Rules and Regulations. The following rules and regulations shall be observed and enforced by all Contractors in connection with all phases of the Work:

.1 In accordance with New York State law, smoking is prohibited anywhere on school property. Violators will be subject to arrest and/or fine of $1,000 per occurrence. No alcoholic beverages or controlled substances are permitted on school property, and persons under the influence of alcoholic beverages or controlled substances may not enter in or remain on school property.

.2 In accordance with the United States Gun-Free School Zones Act of 1994, no firearms are permitted within 1,000 feet of any school building, with certain limited exceptions as set forth therein. In addition to such limitations, no firearms shall be brought on school property without the Owner's express prior consent.

.3 Appropriate protective gear (hard hats, safety shoes, goggles, etc.) are to be worn as required by OSHA standards, the New York State Department of Labor, and prudent practice. Shirts are to be worn at all times. No short pants are permitted.

.4 Any person who uses inappropriate language, or who is disruptive to the school environment, will be banned from the site.

.5 The Contractor's personnel shall not converse with school employees, students and or local residents.

.6 All persons on the Project site will comply with all reasonable instructions regarding conduct and safety which are given by the Architect, the Construction Manager or the Owner's school administrators.

.7 All construction materials shall be stored in a safe and secure manner. No deliveries will be allowed during school bus drop off or pick up hours as determined by the Owner. All deliveries shall be scheduled and coordinated with the Construction Manager and the Owner's security department. Unexpected or uncoordinated deliveries may be turned away by the Owner or the Construction Manager at the discretion or necessity of the Owner. The Owner's enforcement of this provision shall not be construed by the Contractor or Subcontractor as the basis for a claim of delay in time or monetary damages alleged to have been incurred as a result of refusal of delivery.

.8 Use of the existing building facilities during construction is prohibited, specifically including toilet rooms, telephones and water fountains.

.9 The Contractor's schedule shall allow for blackout dates during which no noisy Work will be allowed, as determined by the Construction Manager. The Contractor may consult the Owner's school calendar for all test and examination dates, but these dates are subject to change.

.10 To gain access to the Work, entrances and parking areas will be designated by the Owner for the Contractor's use. Any vehicles or trucks in non-designated areas may be towed at the Contractor's expense. Gates shall always be locked unless a worker is in attendance to prevent unauthorized entry.

.11 Should it become necessary to obtain access to the existing building during construction hours for measurements or other non-disruptive work, the Contractor shall be escorted by the Construction Manager.

.12 All persons must wear photo identification badges at all times while working at the site. Identification badges must be provided by the Contractor for its personnel, including subcontractors, consultants, visitors and others.

.13 No asbestos containing products are to be used anywhere on this Project.

.14 No lead containing products are to be used anywhere on this Project.

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.15 Asbestos manifests showing the locations of all known asbestos bearing materials are available in each building, and should be consulted prior to the commencement of any work, including but not limited to demolition.

.16 Demolition is to occur only when the building is unoccupied. Dust partitions and negative air are to be installed prior to commencing demolition. The Contractor must obtain Construction Manager approval on dust partitions and negative air prior to commencing demolition work. Debris shall be removed by using an enclosed chute or similar sealed system.

.17 (a) Prior to the commencement of Work, the Contractor must submit construction plans, which show the location of dust particles, exhaust & fresh air fans and describe in detail the operation procedures during demolition and construction which may generate dust.

(b) All entrances to classrooms shall be sealed with at least 6 mil. polyethylene sheeting to prevent dust created by demolition and construction work from entering the classrooms. Entrances and egress to the work zone shall be covered with a triple flap 6 mil. polyethylene doorway to allow access to the area without the release of dust. The Contractor is, additionally, responsible for all debris and dust infiltrating adjacent and undisturbed areas of the building.

(c) Shut down and lock out all electrical and HVAC in the work area. Cut, cap, and seal all duct work where it enters the work area from another space. All duct work and conduit within the space shall be removed during demolition work.

(d) The Contractor shall install dust protection barriers and poly sheeting. There shall be no or minimum damage to adjacent surfaces. The Contractor is responsible to repair any damage to existing surfaces.

.18 Painting or other chemical applications shall be done in the Owner's existing building only when it is unoccupied. Storage of chemicals and painting shall be outside the Owner's existing or new structures, and shall follow manufacturer's storage guidelines.

.19 Oxygen or other gas containers shall be properly stored and secured per OSHA requirements, to the satisfaction of the Construction Manager. Failure to do so will result in a $250 back-charge, per occurrence.

.20 The Contractor is responsible for cleaning its own materials and debris. Failure to maintain a clean work site daily will result in others performing the work at the Owner's request, and the Contractor will be backcharged for the cleaning cost plus construction administration fees. This may be done without the typical 3-day notice to the Contractor.

.21 The Contractor must send a qualified representative, knowledgeable in the Project and authorized to make decisions on behalf of the Contractor, to every Project meeting.

.22 The Contractor shall cooperate with the Owner's school principal and custodial staff; however, if any additional work is requested the Contractor shall not proceed unless written approval is received from the Owner. The Contractor will not be compensated for any additional work performed without the Owner's prior written approval.

.23 Deliveries sent to the Project site will not be signed for or unloaded by the Owner. They will be directed to the construction site and if no employee is on site, the delivery will be rejected, at the Contractor's expense.

.24 The General Construction Contractor shall be responsible for managing dust and dirt. On the exterior, site shall be watered down frequently to prevent dust clouds from rising. Streets shall be maintained clean per the Construction Manager's request.

.25 All hot tar roofing shall be installed after school hours or on weekends/holidays only. Kettles shall not be lit until all students have left the Owner's building.

.26 The Contractor shall submit a weekly work schedule indicating workdays, work hours and manpower allocation.

.27 No storage of materials will be permitted within the Owner's buildings at any time during construction. The Contractor must provide exterior storage containers when required. The Contractor shall be responsible for securing appropriate space for its material with the Construction Manager prior to delivery. Final location of storage containers shall be determined by the Owner and/or Construction Manager. If insufficient space is available on the site, the Contractor shall provide local off-site storage, storage containers, etc. at its own cost and expense. Should any of the material stored on-site obstruct the progress of any portion of the Work or the Project, this material shall be removed by the Contractor without reimbursement of cost, from place to place or from the premises, as the Construction Manager may direct.

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.28 The General Construction Contractor shall be responsible for maintaining all appropriate site safety signage.

.29 The Contractor shall be responsible for protecting the Owner's property. All existing shrubs, trees, lawn fixtures, sculptures and miscellaneous equipment shall be protected at all times. Any removals or relocation of said objects, if allowed shall be as directed by the Owner in writing.

.30 The General Construction Contractor shall provide and service portable lavatories for the duration of construction as provided in the Contract Documents. Lavatories shall be serviced by the General Construction Contractor on a regular basis to maintain sanitary conditions.

.31 The General Construction Contractor shall protect all existing roofs during construction and shall be responsible for any damage to roofs during construction. The General Construction Contractor shall make all repairs to any damaged areas, as required by the manufacturer of the roof system.

.32 The General Construction Contractor shall be responsible for providing weather-proof protection over all rough openings, including windows.

.33 The Contractor shall be responsible for conducting pre-construction walk-throughs and videotaping existing conditions. The Contractor shall schedule a representative of both the Owner and the Construction Manager to be present at this taping. In the absence of this record, the Contractor shall be responsible for paying the costs associated with any and all repairs in an area where the Contractor is working or has worked, as may be deemed necessary by the Owner or the Construction Manager.

.34 Manufacturers Material Safety Data Sheets (MSDS) shall be available at the site for all products used in the Project.

.35 No weapons are permitted on the Owner's property by law.

.36 Neither the Contractor nor any person on its behalf shall, in any manner, engage in discrimination, intimidation or harassment of any person on the Project site.

.37 Proper attire is required for personal safety and clothing must not sexually explicit or contain messages of a vulgar nature, disrespectful of ethnic or religious groups or any group covered under the Dignity for All Students Act, or which promote the use of tobacco, alcohol or drugs.

.38 Only materials and equipment that are to be used directly in the Work shall be brought to and stored on the Project site by the Contractor. After equipment is no longer required for the Work, it shall be promptly removed from the Project site. Protection of construction materials and equipment stored at the Project site from weather, theft, damage, and all other adversity is solely the responsibility of the Contractor.

.39 The Contractor will ensure that the Work, at all times, is performed in a manner that affords reasonable access, both vehicular and pedestrian, to the site of the Work and all adjacent areas. The Work will be performed in such a manner that public areas adjacent to the site of the Work will be free from all debris, building materials and equipment likely to cause hazardous conditions. Without limitation of any other provision of the Contract Documents, the Contractor will use its best efforts to minimize any interference with the occupancy or beneficial use of (1) any areas and buildings adjacent to the site of the Work; or (2) the Owner's building in the event of partial occupancy, as more specifically described in Section 9.9.

.40 The Contractor is required to protect its own Work and work areas, preconstruction, during construction and post construction.

.41 During exterior renovation work, overhead protection shall be provided for any sidewalks or areas immediately beneath the work site or such areas shall be fenced off and provided with warning signs to prevent entry.

.42 The Contractor shall exert utmost care and diligence when working in or near any existing buildings or site work. The absence of protection around such items shall not excuse the Contractor from its liability to provide protection. Any damage to existing buildings, sitework or facilities due to the actions or inactions of the Contractor shall be repaired by and charged to the Contractor.

.43 The Contractor shall be responsible for the removal and replacement of existing ceiling tiles and grid in areas of the existing building where its Work is required and new ceilings are not scheduled for installation. In the event that the existing ceilings are damaged and cannot be replaced to the satisfaction of the Owner, the responsible contractor shall be liable for the costs of replacing in kind, the existing ceilings with new tile and grid.

.44 The General Construction Contractor shall provide necessary and required security measures to adequately safeguard the construction site from vandalism and intrusion of unauthorized persons. The General Construction Contractor shall submit its means and methods of security to the Construction Manager for review and comment. The Project site must be secured 24 hours a day, 7 days a week

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including holidays. The General Construction Contractor's failure to secure the site as required by this paragraph will result in the Owner engaging the services of such necessary personnel so as to provide such security. No notice will be given the General Construction Contractor of the Owner's intention to engage such security services and all costs and expenses associated with the Owner's security of the site in this regard will be back charged to the General Construction Contractor. While the Owner may have security guards patrolling the project areas, the function of such security guards is not for the purpose of specifically guarding the Contractor's property or operations of work.

.45 The Contractor and any entity for which the Contractor is responsible shall not erect any sign on the Project site without the written consent of the Owner, which may be withheld in the sole discretion of the Owner.

.46 Without limitation of any other provision of the Contract Documents, the Contractor will comply with all reasonable rules and regulations promulgated by the Owner or Construction Manager in connection with the use and occupancy of the Project site and the buildings, as amended from time to time by the Owner or the Construction Manager.

§ 3.13.5 Only materials and equipment that are to be used directly in the Work shall be brought to and stored on the Project site by the Contractor. After equipment is no longer required for the Work, it shall be promptly removed from the Project site. Protection of construction materials and equipment stored at the Project site from weather, theft, damage, and all other adversity is solely the responsibility of the Contractor.

§ 3.13.6 The Contractor shall ensure that the Work, at all times, is performed in a manner that affords reasonable access, both vehicular and pedestrian, to the site of the Work and all adjacent areas. The Work will be performed in such a manner that public areas adjacent to the site of the Work will be free from all debris, building materials and equipment likely to cause hazardous conditions. Without limitation of any other provision of the Contract Documents, the Contractor shall use its best efforts to minimize any interference with the occupancy or beneficial use of (1) any areas and buildings adjacent to the site of the Work; or (2) the building in the event of partial occupancy, as more specifically described in Paragraph 9.9.

§ 3.13.7 The Contractor shall not permit any workers to use any existing facilities at the Project site, including without limitation, lavatories and toilets. To gain access to the Work, entrances and parking areas will be designated by the Owner for the Contractor's use. Without limitation of any other provision of the Contract Documents, the Contractor will comply with all reasonable rules and regulations promulgated by the Owner in connection with the use and occupancy of the Project site and the Owner's building(s), as amended from time to time by the Owner.

§ 3.13.8 Construction areas that are under the control of the Contractor and therefore not occupied by the Owner's staff or students shall be separated from occupied areas. Provisions shall be made to prevent the passage of dust and contaminants into occupied parts of the Owner's building(s). Periodic inspection and repairs of the containment barriers must be made to prevent exposure to dust or contaminants. Gypsum board must be used in exit ways or other areas that require fire rated separation. 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.

§ 3.13.9 Prior to starting Work, the Contractor shall submit a written report to the Owner, Construction Manager and Architect identifying existing damage to roads, walks, lawns, buildings and other property to be affected by this Contract. Failure to submit the report shall render the Contractor responsible for existing damage. The Contractor may request and schedule an inspection with the Owner, Construction Manager and Architect prior to submittal of the report. The Contractor shall obtain the consent of adjoining property owners regarding temporary easements of any other manner of physical encroachment.

§ 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, Separate Contractors, or of other Contractors by cutting, patching, or otherwise altering such construction, or by excavation. The Contractor shall not cut or otherwise alter construction by the Owner, Separate Contractors, or by other Contractors except with written consent of the Construction Manager, Owner, and

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such other Contractors or Separate Contractors. Consent shall not be unreasonably withheld. The Contractor shall not unreasonably withhold, from the Separate Contractors, other Contractors, or the Owner, its consent to cutting or otherwise altering the Work.

§ 3.14.3 The word "new" used herein shall mean Work which has been or is to be installed under the terms of the Contract for this Project. The word "existing" used herein shall mean existing conditions previous to the award of a Contract for this Project. In order to eliminate cutting and patching as much as possible, the Contractor shall, during the progress of its Work, provide and set proper sleeves, inserts, and other fixtures as required for its new Work and shall give proper and detailed instructions to others where the 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. The Contractor shall refer to the Specifications for proper cutting and patching requirements. Any costs caused by defective or ill-timed Work of the Contractor shall be borne by the Contractor. Cutting and patching of any Work shall be made in such a manner as to not breach any provisions of any guaranty or warranty on existing work left in place or any guaranty or warranty required for the Contractor's new Work. Patching of work shall match existing adjacent surfaces and patchwork shall be disguised completely to hide any trace of patching. All new Work on existing roofs must be provided by a company specializing in performing the Work and approved by the existing roofing material manufacturer. It shall be the responsibility of the Contractor performing the cutting and patching to maintain any existing roofing warranty.

§ 3.14.4 Only trades persons skilled and experienced in cutting and patching shall perform such 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. On a daily basis, the Contractor shall clean the areas in which it has performed work and shall remove all waste, materials, rubbish, its tools, construction equipment, machinery and surplus materials. 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. The Contractor shall completely clean the site of the Work, removing and disposing of all construction-related debris and rubbish, and cleaning all Work-related stains, spots, marks, dirt, mortar smears, plaster smears, paint smears, caulking smears, and other foreign materials from exposed surfaces inside and outside the Owner's buildings and within the Project limit lines.

§ 3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner, or Construction Manager with the Owner's approval, may do so and the Owner shall be entitled to reimbursement from the Contractor. At its option, the Owner may deduct the cost of clean-up pursuant to this Section 3.15.2 from any payments otherwise due to the Contractor pursuant to this Contract.

§ 3.16 Access to Work

The Contractor shall provide the Owner, Construction Manager, and Architect with access to the Work in preparation and progress wherever located. Federal, state, and local agencies with jurisdiction over the Project shall at all times have access to the Work wherever it is in preparation or progress. The Contractor shall provide for such access so that such agencies may perform their functions. The Contactor shall also allow access for all required tests and inspections.

§ 3.17 Royalties, Patents and Copyrights

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner, Construction Manager, and Architect harmless from loss on account thereof, but shall not be responsible for defense or loss when a particular design, process, or product of a particular manufacturer or manufacturers is required by the Contract Documents, or where the copyright violations are contained in Drawings, Specifications, or other documents prepared by the Owner, Architect, or Construction Manager. However, if an infringement of a copyright or patent is discovered by, or made known to, the Contractor, the Contractor shall be responsible for the loss unless the information is promptly furnished to the Architect through the Construction Manager.

§ 3.18 Indemnification

§ 3.18.1 To the fullest extent permitted by law, the Contractor shall, and cause its Subcontractors to, defend, indemnify and hold harmless the Owner, Construction Manager, Architect, and their consultants, officers, directors, board members, agents and employees of any of them (collectively, "Indemnitees," individually, "Indemnitee") from and

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against all losses, damages, liabilities, actions, causes of action, claims, demands, fines, penalties, judgments, costs (including but not limited to attorneys' fees and expenses incurred in connection therewith and in the enforcement of this indemnification), charges, expenses and demands of whatever kind in connection with or arising from or out of (a) any negligent, willful or wrongful act or omission resulting in bodily injury (including death), personal injury or property damage (including loss of use) by the Contractor, its Subcontractors, Suppliers, their respective officers, employees, servants, agents, suppliers, invitees, successors and assigns (collectively, "Contractor Parties," and individually, "Contractor Party"), (b) performance of or failure to perform the Work or any breach of this Contract or infringement of any patent right by any Contractor Party, or (c) any statutorily imposed liability for injury to employees or failure to comply with any laws or regulations affecting the Work, regardless of whether or not such claim, damage, loss or expense is caused in part by a party indemnified hereunder. Nothing contained herein shall be construed to obligate the Contractor to indemnify, defend, and hold an Indemnitee harmless for claims caused solely by the Indemnitee's negligent acts or omissions.

The Contractor agrees to include the following indemnity provision in each and every contract it enters into with a Subcontractor, and to require that Subcontractor to include such provision in each contract it enters into with any lower tier Sub-subcontractor: "To the fullest extent permitted by law, sub-contractor shall defend, indemnify and hold harmless the Contractor, Owner, Owner's Consultants, Construction Manager's and Architect's consultants, and each of their respective representatives, board members, employees, directors, officers, and agents, from and against any and all claims, suits, actions, damages, losses, fines, penalties, costs, charges and expenses, including but not limited to attorneys' fees and the costs of any proceeding, arising out of or resulting from any performance of or failure to perform the Work, acts or omissions of the Subcontractor, its lower-tier Sub-subcontractors, and others for whom the Subcontractor is responsible, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or economic losses or damages, damage to or destruction of property, and for environmental damage, or to injury to or destruction of tangible property and nuisance, but only to the extent caused by the acts or omissions or a breach of contract of the a Subcontractor, a Sub-Subcontractor to Subcontractor, and any person or entity directly or indirectly employed by them or any person or entity 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."

§ 3.18.2 In claims against any person or entity indemnified under this Section 3.18 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, the indemnification obligation under Section 3.18.1 shall not be limited by a limitation on amount or type of damages, compensation, or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts, or other employee benefit acts.

§ 3.18.3 The Contractor's defense and indemnity obligations under this Section 3.18 shall specifically include all claims and judgments that may be made against the Indemnitees under the Labor Law of the State of New York, and similar laws of other state or governmental bodies having jurisdiction; and further, against claims and judgments arising from violation of public ordinances and requirements of governing execution of the Work.

§ 3.18.4 Claims by Governmental Authorities. To the fullest extent permitted by law, the Contractor shall defend, indemnify, and hold harmless the Indemnitees from and against claims, damages, losses, and expenses arising out of any claims made against the Indemnitees under the laws of federal, state, or other governmental bodies having jurisdiction over the Work, including but not limited to claims arising from violation of public ordinances and other requirements of governing authorities, due to the Contractor's method of execution of the Work or implementation of any of the Contractor's other obligations under the Contract Documents.

§ 3.18.5 Liens and Security Interests. To the fullest extent permitted by law, the Contractor shall defend, indemnify, and hold harmless the Indemnitees from and against any actions, law suits, or other proceedings brought against Indemnitees as a result of liens or security interests of any type arising from the Work and filed against the Work, the site of any of the Work, the Project site and any improvements thereon, payments due the Contractor, or any portion of the property of any of the Indemnitees.

§ 3.18.6 Intellectual Property. The Contractor shall defend, indemnify, and hold harmless the Indemnitees from and against any claim or demand for patent fees, royalties, or otherwise on account of any invention, machine, article, process, copyright, or arrangement that may be used by the Contractor in performing the Work, other than as to any of the foregoing expressly called for in the Contract Documents to be so used. In the event of any injunction or legal action regarding such claim or demand that results in stopping the Work in whole or part, the Owner shall have the

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right to direct the Contractor to change the manner of performance of the Work to avoid such stoppage, all cost and expense occasioned thereby to be borne solely by the Contractor.

§ 3.18.7 The Contractor shall further indemnify and hold harmless the Indemnitees from and against any costs and expenses (including reasonable attorneys' fees) incurred by any of the Indemnitees in enforcing any of the Contractor's defense, indemnity, and hold harmless obligations under this Section 3.18 or as may otherwise be provided elsewhere in the Contract.

§ 3.18.8 Subject to Section 3.18.9, all obligations of the Contractor under this Section 3.18 to defend the Indemnitees are obligations to provide full defenses at the sole cost and expense of the Contractor, regardless of any alleged culpability on the part of any Indemnitee or any ultimate determination of relative shares of liability of any Indemnitee or limitation of the Contractor's indemnity obligations in light of such determination.

§ 3.18.9 To the extent any defense, indemnity, or hold harmless obligations under this Section 3.18 are made void or otherwise impaired by any law controlling their construction (including but not limited to laws limiting such obligations to the extent of the portion of damages caused by an indemnitor), such obligations shall be deemed to conform to the greatest rights to defense and indemnity permitted by such law (including but not limited to New York State General Obligations Law Section 5-322.1).

§ 3.18.10 All provisions of this Section 3.18 shall survive termination of the Agreement or final completion. No obligations under this Section 3.18 shall be construed to negate, abridge, or reduce other rights or obligations to defense and indemnity, including but not limited to common law indemnity, which would otherwise exist as to a party or person described in this Section 3.18.

§ 3.19 Existing Features and Underground Data

§ 3.19.1 The location of existing features shown on plans is intended for general information only. The Contractor, alone, is responsible for accurate determination of the location of all structures, and shall not be entitled to any increase in the Contract Sum or Contract Time due to difficulties or distances encountered in the Work, which should have been foreseeable thereby.

§ 3.19.2 The locations, depths and data as to underground conditions have been obtained from records, surface indications and data furnished by others. Information furnished is solely for the convenience of the Contractor without any warranty, expressed or implied as to its accuracy or completeness. The Contractor shall make no claim against the Owner, Construction Manager or Architect with respect to the accuracy or completeness of such information if it is erroneous, or if the conditions found at the time of construction are different from those as indicated.

§ 3.20 Construction Stresses

§ 3.20.1 The Contractor shall be solely responsible for the conditions which develop during construction and in the event any structure is dislocated, over strained, or damaged so as to affect its usefulness, the Contractor shall be solely responsible. The Contractor shall, at its own expense, take whatever steps necessary to strengthen, relocate, or rebuild the structure to meet all applicable requirements.

§ 3.20.2 The Contractor is responsible for restoration or repair of utilities, private property, buildings, pavement, walkways, roads, or other property damaged by its activities under this Agreement.

§ 3.21 Training and Instructions

§ 3.21.1 Upon Substantial Completion of the Work, the Contractor shall orient and instruct personnel of the Owner designated by it in the operation and maintenance of all equipment furnished by the Contractor and shall turn over all pertinent literature and operational manuals relating to the equipment. The format for organizing, binding, and delivering such manuals shall be as described in the Specifications.

ARTICLE 4 ARCHITECT AND CONSTRUCTION MANAGER

§ 4.1 General

§ 4.1.1 The Architect is the person or entity retained by the Owner pursuant to Section 2.3.2 and identified as such in the Agreement.

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§ 4.1.1.1 Architect's Consultants: All firms listed on the title sheet of the Specifications, except for the Owner and Construction Manager, are Consultants employed by the Architect, and are agents of the Architect and will make observation of their respective branches of the Work. All changes in the Work must be processed through the Architect. Consultants shall not order extra Work or make changes in the Work.

§ 4.1.2 The Construction Manager is the person or entity retained by the Owner pursuant to Section 2.3.3 and identified as such in the Agreement.

§ 4.1.3 The Architect is the interpreter of the technical requirements of the Drawings and Specifications with regard to questions the Contractor may have concerning its obligations under either. The Architect shall render such interpretations with such promptness as necessary to maintain progress of the Work.

§ 4.2 Administration of the Contract

§ 4.2.1 The Construction Manager and Architect will provide administration of the Contract as described in the Contract Documents and will be the Owner's representatives during construction until the date the Architect issues the final Certificate for Payment and during the correction period described in Article 12. The Construction Manager and Architect have the authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

§ 4.2.2 The Architect will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become generally familiar with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. On the basis of the site visits, the Architect will keep the Owner and the Construction Manager reasonably informed about the progress and quality of the portion of the Work completed, and promptly report to the Owner and Construction Manager known deviations from the Contract Documents and defects and deficiencies observed in the Work.

§ 4.2.3 The Construction Manager shall provide one or more representatives who shall be in attendance at the Project site whenever the Work is being performed. The Construction Manager will determine in general if the Work observed is being performed in accordance with the Contract Documents, will keep the Owner and Architect reasonably informed of the progress of the Work, and will promptly report to the Owner and Architect known deviations from the Contract Documents and the most recent Project schedule, and defects and deficiencies observed in the Work.

§ 4.2.4 The Construction Manager will schedule and coordinate the activities of the Contractor and other Multiple Prime Contractors in accordance with the latest approved Project Schedule. The Contractor shall participate with other Contractors and the Construction Manager, the Architect and Owner in reviewing their construction schedules when directed to do so. The Contractor shall make any revisions to the construction schedule deemed necessary by the Owner or Construction Manager. The approved construction schedules shall be integrated into the Project Schedule and constitute the schedules to be used by the Contractor, other Contractors, the Architect, the Construction Manager and the Owner until subsequently revised.

§ 4.2.4.1 The Contractor shall assume full responsibility for the execution of its Work in the allotted duration times set forth in the Project Schedule.

§ 4.2.5 The Construction Manager, except to the extent required by Section 4.2.4, and Architect will not have control over, or charge of, 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, except as provided in Section 3.3.1, and neither will be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. Neither the Construction Manager nor the Architect will have control over or charge of or be responsible for acts or omissions of the Contractor, Subcontractors, or their agents or employees, or of any other persons or entities performing portions of the Work.

§ 4.2.6 Communications Facilitating Contract Administration. Except as otherwise provided in the Contract Documents or when direct communications have been specially authorized, the Owner and Contractor shall endeavor to communicate with each other through the Construction Manager, and shall contemporaneously provide the same communications to the Architect about matters arising out of or relating to the Contract Documents. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors

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and material suppliers shall be through the Contractor. Communications by and with other Multiple Prime Contractors shall be through the Construction Manager and shall be contemporaneously provided to the Architect if those communications are about matters arising out of or related to the Contract Documents. Communications by and with the Owner's own forces shall be through the Owner.

§ 4.2.7 The Construction Manager and Architect will review and certify all Applications for Payment by the Contractor, in accordance with the provisions of Article 9. The Construction Manager will assemble each of the Contractor's Applications for Payment with similar applications from other Prime Contractors into a Project Application and Certificate for Payment, all of which will be submitted to the Architect with the Construction Manager's recommendations as to certifications in whole or part by the Architect.

§ 4.2.8 The Architect and Construction Manager have authority to reject Work that does not conform to the Contract Documents and will notify each other about the rejection. The Construction Manager shall determine in general whether the Work of the Contractor is being performed in accordance with the requirements of the Contract Documents and notify the Owner, Contractor and Architect of defects and deficiencies in the Work. Whenever the Construction Manager considers it necessary or advisable, the Construction Manager will have authority to require additional inspection or testing of the Work in accordance with Sections 13.5.2 and 13.5.3, upon written authorization of the Owner, whether or not such Work is fabricated, installed or completed. The foregoing authority of the Construction Manager will be subject to the provisions of Sections 4.2.18 through 4.2.20 inclusive, with respect to interpretations and decisions of the Architect. However, neither the Architect's nor the Construction Manager's authority to act under this Section 4.2.8 nor a decision made by either of them in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect or the Construction Manager to the Contractor, Subcontractors, material and equipment suppliers, their agents or employees, or other persons performing any of the Work.

§ 4.2.9 The Construction Manager will receive and promptly transmit to the Architect all submittals from the Contractor such as Shop Drawings, Product Data and Samples. The Construction Manager's actions will be taken in accordance with the Project submittal schedule approved by the Architect or, in the absence of an approved Project submittal schedule, with reasonable promptness while allowing sufficient time to permit adequate review by the Architect.

§ 4.2.10 The Architect will review and approve or take other appropriate action upon the Contractor's submittals such as Shop Drawings, Product Data and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. Upon the Architect's completed review, the Architect shall transmit its submittal review to the Construction Manager.

§ 4.2.11 Review of the Contractor's submittals by the Architect is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The 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, unless otherwise specifically stated by the Architect, 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.

§ 4.2.11.1 The Architect's review of Contractor's submittals shall be limited to an initial submittal and one (1) resubmittal. If the Architect is required to review additional submittals because the initial submittal and resubmittal failed to conform to the information given and the design concept expressed in the Contract Documents, the amount of compensation paid to the Architect by the Owner for additional services shall be deducted from the payments to the Contractor.

§ 4.2.11.2 The review will not be considered complete until an "ACTION" stamp or other written notice to that effect has been received by the Contractor.

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§ 4.2.12 The Construction Manager will prepare Change Orders and Construction Change Directives.

§ 4.2.13 The Construction Manager and the Architect will take appropriate action on Change Orders or Construction Change Directives in accordance with Article 7 and the Architect will have authority to order minor changes in the Work as provided in Section 7.4. The Architect, in consultation with the Construction Manager, will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

§ 4.2.14 Utilizing the documents provided by the Contractor, the Construction Manager will maintain at the site for the Owner one copy of all Contract Documents, approved Shop Drawings, Product Data, Samples and similar required submittals, in good order and marked currently to record all changes and selections made during construction. These will be available to the Architect and the Contractor, and will be delivered to the Owner upon completion of the Project.

§ 4.2.15 The Construction Manager will assist the Architect in conducting inspections to determine the dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion in conjunction with the Architect pursuant to Section 9.8; and receive and forward to the Owner written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10. The Construction Manager will forward to the Architect a final Application and Certificate for Payment or final Project Application and Project Certificate for Payment upon the Contractor's compliance with the requirements of the Contract Documents.

§ 4.2.16 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 duties, responsibilities and limitations of authority of such project representatives shall be as set forth in an exhibit to be incorporated in the Contract Documents.

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

§ 4.2.18 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.

§ 4.2.18.1 If Work is described or indicated in a manner which makes it impossible to carry out the requirements of the Contract Documents, or should discrepancies appear among the Contract Documents, the Contractor shall request interpretation before proceeding with the Work. If the Contractor fails to make such a request, no excuse will be entertained for failure to carry out the Work of the Contract Documents. Should a conflict occur in or between Contract Documents, the Contractor is deemed to have included in the Contract Sum the more expensive manner of doing the Work.

§ 4.2.19 The Architect's decisions, after consultation with the Owner, on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

§ 4.2.20 The Construction Manager will receive and review requests for information from the Contractor, and forward each request for information to the Architect, with the Construction Manager's recommendation. The Architect will review and respond in writing to the Construction Manager to requests for information about the Contract Documents. The Construction Manager's recommendation and the Architect's response to each request will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

(Paragraph deleted)

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 other Contractors or Separate Contractors or the subcontractors of other Contractors or Separate Contractors.

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§ 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 or the bidding requirements, the Contractor, within ten (10) days after award of the Contract, shall furnish in writing to the Construction Manager for review by the Owner, Construction Manager and Architect the names of persons or entities (including those who are to furnish materials or equipment fabricated to a special design) proposed for each principal portion of the Work. The Construction Manager may reply within 14 days to the Contractor in writing stating (1) whether the Owner, the Construction Manager or the Architect has reasonable objection to any such proposed person or entity or, (2) that the Construction Manager, Architect or Owner requires additional time for review. Failure of the Construction Manager, Owner, or Architect to reply within the 14-day period shall constitute notice of no reasonable objection.

§ 5.2.1.1 In no case shall payments be made on the Contract until a complete list of Subcontractors has been submitted by the Contractor to the Construction Manager for review by the Owner, Construction Manager, and Architect. Such list shall not be considered complete if the Owner, Construction Manager or Architect has any reasonable objection to any name listed thereon. Such list shall be submitted and resubmitted if necessary until it is considered complete.

§ 5.2.1.2 Subcontractors will not be acceptable unless, when requested by the Owner, Architect or Construction Manager, evidence is furnished by the Contractor that the proposed Subcontractor has satisfactorily completed similar subcontracts as contemplated under this Contract, and has the necessary experience, personnel, equipment, plant and financial ability to complete the proposed subcontract in accordance with the intent of the Contract Documents and the Project Schedule. As verification of financial ability, the Owner reserves the right to request and receive up to five (5) years of financial statements, bank references, bond/insurance company references and all other information required to assess financial ability.

§ 5.2.2 The Contractor shall not contract with a proposed person or entity to whom the Owner, Construction Manager or Architect has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

§ 5.2.3 If the Owner, Construction Manager or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner, Construction Manager and Architect have no objection.

§ 5.2.4 The Contractor shall not substitute a Subcontractor, person, or entity for one previously selected if the Owner, Construction Manager or Architect makes reasonable objection to such substitution.

§ 5.2.5 The Maintenance of the Project Schedule is critical. The Contractor shall award subcontracts to entities capable of performing in a manner that will maintain the Project Schedule and require its subcontractors to complete their work in accordance with the Project Schedule.

§ 5.2.6 Upon written request from or on behalf of the Owner, the Contractor shall provide to the Owner executed, unredacted copies of all subcontracts, purchase orders or other agreements relating to the Work.

§ 5.3 Subcontractual Relations

§ 5.3.1 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 responsibility for safety of the Subcontractor's Work, which the Contractor, by these Documents, assumes toward the Owner, Construction Manager and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner, Construction Manager and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed

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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. Each subcontract shall contain provision for execution of lien waivers in form and substance acceptable to the Owner as a condition of payment by the Contractor. The Contractor shall require each Subcontractor to (1) inspect the Project site, including all relevant surfaces and job conditions, before beginning the Work and (2) accept or cite necessary corrections in the Project site, including surfaces or job conditions, before beginning the Work.

§ 5.3.2 The Contractor shall promptly notify the Owner and Architect of any material defaults by any Subcontractor or whether it has terminated its agreement with any of its Subcontractors for any reason.

§ 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 pursuant to Article 14 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 60 days, through no fault of the Subcontractor, 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.

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

§ 6.1 Owner's Right to Perform Construction with Own Forces and to Award Other Contracts

§ 6.1.1 The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, which include persons or entities under separate contracts not administered by the Construction Manager, and to award other contracts in connection with other portions of the Project or other construction or operations on the site under Conditions of the Contract identical or substantially similar to these including those portions related to insurance and waiver of subrogation.

§ 6.1.2 When the Owner performs construction or operations with the Owner's own forces or Separate Contractors, the Owner shall provide for coordination of such forces and Separate Contractors with the Work of the Contractor, who shall cooperate with them.

§ 6.1.3 Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces or with Separate Contractors, the Owner or its Separate Contractors shall have the same obligations and rights that the Contractor has under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6, and Articles 10, 11, and 12.

§ 6.1.4 The Contractor accepts assignment of, and liability for, all purchase orders and other agreements for procurement of materials and equipment that are identified as part of the Contract Documents. The Contractor shall be responsible for such pre-purchased items, if any, as if the Contractor were the original purchaser. The Contract Sum includes, without limitation, all costs and expenses in connection with delivery, storage, insurance, installation and testing of items covered in any assigned purchase orders or agreements. All warranty and correction of the Work obligations under the Contract Documents shall also apply to any pre-purchased items, unless the Contract Documents specifically provide otherwise.

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§ 6.2 Mutual Responsibility

§ 6.2.1 The Contractor recognizes and acknowledges that the Project is governed by and subject to the provisions of New York State General Municipal Law §101, et seq., governing the award of contracts on public improvement projects. As such, the Contractor recognizes and acknowledges that other Contractors or Separate Contractors will be performing work on the project in conjunction with it. As such, the Contractor shall afford the Owner's own forces and other Contractors or 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.

§ 6.2.1.1 The Contractor shall not commit or permit any act which will interfere with the performance of the work of any other Contractor or Separate Contractor performing work on the Project. If the Contractor sustains any damage through any act or omission of Separate or other Contractors having a contract with the Owner for the performance of work upon the site or of work which may be necessary to be performed for the proper execution of the work to be performed hereunder, or through any act or omission of a subcontractor of such Separate or other Contractor, the Contractor shall promptly notify the Owner and the Construction Manager of such damage

§ 6.2.1.2 The Contractor agrees to defend and indemnify Owner, Architect, Construction Manager, Consultants and Sub-consultants, from all claims made against any of them arising out of the Contractor's acts or omissions or the acts or omissions of any Subcontractor of the Contractor which have caused damage to the Owner, Architect, Construction Manager, Separate Contractor or other Contractor on the Project. The Owner's right to indemnification hereunder shall in no way be diminished, waived or discharged, or by the exercise of any other remedy provided for by the contract or by law. Further, the Owner shall withhold from the Contractor's Contract Sum an amount sufficient to cover such damage and all expenses and costs associated with the damage sustained.

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner's own forces, Separate Contractors or other Contractors, the Contractor shall, prior to proceeding with that portion of the Work, promptly notify the Construction Manager and Architect of apparent discrepancies or defects in the construction or operations by the Owner or Separate Contractor or other Contractors that would render it unsuitable for proper execution and results of the Contractor's Work. Failure of the Contractor to notify the Construction Manager and the Architect of apparent discrepancies or defects prior to proceeding with the Work shall constitute an acknowledgment that the Owner's or Separate Contractor's or other Contractors' completed or partially completed construction is fit and proper to receive the Contractor's Work. The Contractor shall not be responsible for discrepancies or defects in the construction or operations by the Owner or Separate Contractors or other Contractors that are not apparent.

§ 6.2.2.1 The Contractor shall promptly correct discrepancies or defects in its Work identified by Separate Contractors as affecting proper execution and results of the work of the Separate Contractors.

§ 6.2.3 The Contractor shall reimburse the Owner for costs the Owner incurs, including costs that are payable to a Separate Contractors or to other Contractors, because of the Contractor's delays, improperly timed activities or defective construction.

§ 6.2.4 The Contractor shall promptly remedy damage that the Contractor wrongfully causes to completed or partially completed construction, or to property of the Owner, Separate Contractors, or other Contractors as provided in Section 10.2.5 or elsewhere in the Contract Documents.

§ 6.2.5 The Owner, Separate Contractors, and other Contractors shall have the same responsibilities for cutting and patching as are described for the Contractor in Section 3.14.

§ 6.2.6 Should the Contractor or its Subcontractors cause damage to the work or property of any Separate Contractor or other Multiple Prime Contractor, the Contractor shall, upon due notice, promptly attempt to settle by agreement or otherwise resolve the dispute with the Separate Contractor or other Multiple Prime Contractor. If such separate trade contractor or other Multiple Prime Contractor sues or makes any other claim against the Owner, Construction Manager, or Architect on account of any damage alleged to have been caused by the Contractor or its Subcontractors, the Contractor shall defend, indemnify, and hold harmless the Owner, Construction Manager, and Architect against such claim or proceedings at the Contractor's own expense. The Owner's right to indemnification hereunder shall in no way be diminished, waived or discharged, or by the exercise of any other remedy provided for by the Contract

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Documents or by law. Further, the Owner shall be entitled to withhold from the Contractor's Contract Sum an amount sufficient to cover such damage and all expenses and costs associated with the damage sustained.

§ 6.2.7 When the Work of the Contractor or its Subcontractors overlap or dovetail with that of other Contractors, materials shall be delivered and operations conducted to carry on the Work continuously, in an efficient, workmanlike manner.

§ 6.2.8 In case of interference between the operations of the Contractor and other Contractors, the Construction Manager will be the sole judge of the rights of each contractor and shall have the authority to decide in what manner the Work may proceed, and in all cases its decision shall be final. Any decision as to the method and times of conducting the Work or the use of space as required in this paragraph shall not be basis of any claim for delay or damages by the Contractor.

§ 6.2.9 The Contractor, including its Subcontractors, shall keep itself informed of the progress of other Contractors and shall notify the Architect or the Construction Manager immediately in writing of lack of progress on the part of other Contractors where such delay will interfere with its own operations. Failure of the Contractor to keep informed of the work progressing on the Project and failure to give notice of lack of progress by others shall be construed as acceptance by the Contractor of the status of the work as being satisfactory for proper coordination with the Contractor's Work.

§ 6.2.10 Delays or oversights on the part of the Contractor or its Subcontractors in getting any or all of the Work done in the proper way, thereby causing cutting, removing and replacing Work already in place, shall not be the basis for a claim for extra compensation or additional time.

§ 6.2.11 The Contractor shall promptly correct discrepancies or defects in its Work which have been identified by Separate Contractor(s) or other Contractor(s) as affecting proper execution and results of the work of such other Contractor(s).

§ 6.3 Owner's Right to Clean Up

If a dispute arises among the Contractor, Separate Contractors, other Contractors, and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Construction Manager, with notice to the Architect, will allocate the cost among those responsible.

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 General

§ 7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, only by Change Order, Construction Change Directive or field order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents. The Owner may in its sole discretion reduce the scope of the Contractor's Contract with or without any specific reasons therefor.

§ 7.1.2 A Change Order shall be based upon agreement among the Owner, Construction Manager, Architect and Contractor; a Construction Change Directive requires agreement by the Owner, Construction Manager and Architect and may or may not be agreed to by the Contractor; a field order for a minor change in the Work may be issued by the Architect alone.

§ 7.1.2.1 Field orders are an interpretation of the Drawings or Specifications which order minor changes in the Contractor's work which will not result in an increase or decrease in the Contract Sum. From time to time, the Architect may issue field orders to the Contractor. The work included in such field order shall be performed by the Contractor at no additional cost to the Owner and shall not form the basis for a claim for an extension of the Contract Time. Hence, the Contractor shall perform the work included in field orders so as to cause no delay to its Work and/or the work of other Contractors or Separate Contractors engaged by the Owner in connection with the Project. All field orders shall be given to the Contractor and the Construction Manager by the Architect in writing.

§ 7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents, and the Contractor shall proceed promptly, unless otherwise provided in the Change Order, Construction Change Directive or field order for a minor change in the Work. Additional work performed without authorization of a Change Order will

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not entitle the Contractor to an increase in the Contract Sum or an extension of the Contract Time. No course of conduct or prior dealings between the parties, nor express or implied acceptance of alterations or additions to the Work, and no claim that the Owner has been unjustly enriched by any alteration or addition to the Work, whether or not there is, in fact, any unjust enrichment of the Owner, shall be the basis for any claim to an increase in any amounts due under the Contract Documents or a change in any time period provided for in the Contract Documents. **No amount shall be payable by the Owner to the Contractor for performance of work without a written and fully executed Change Order.**

§ 7.1.4 Costs for changes in the Work shall not be allowed in excess of usual rentals charged in the area where the Project is located for similar equipment of like size and condition, including costs of necessary supplies and repairs for operating equipment on site in connection with other work unless its use incurs actual and additional costs to Contractor. If equipment not on Site is required for change in work only, cost of transporting equipment to and from Site will be allowed.

§ 7.1.5 When the Owner or Architect (in association with the Construction Manager) request that the Contractor perform work which is not included in the Contract Drawings or Specifications and which will result in additional cost to the Owner, the Architect shall request that the Contractor submit its proposal for performing such additional work. The Contractor shall submit its proposal to the Construction Manager and Architect for review. The Contractor's proposal shall include a complete itemization of the costs associated with performing its work including labor and materials. All proposals for any work that a Contractor, its Subcontractor(s) or Sub-subcontractor(s) perform in connection with additional work shall be properly itemized and supported by sufficient substantiating data, including but not limited to material descriptions, material quantities, material unit prices, labor trade listings, labor hour quantities, labor trade rates, equipment descriptions and equipment rates with a percentage allowance for overhead and profit as set forth in Section 7.3.11.

§ 7.1.6 Overtime, when specifically authorized by the Owner in writing, and not as a corrective measure by the Contractor to expedite the progress of construction as ordered by the Owner based on its determination that the performance of the Work has not progressed to the level of completion required by the approved Schedule, shall be paid for by the Owner on the basis of premium payment only, plus the cost of insurance and taxes based on the premium payment period. Overhead and profit will not be paid by the Owner for overtime.

§ 7.1.7 Costs to which overhead and profit is to be applied shall be determined in accordance with Section 7.3.4. The allowable overhead and profit mark-up shall include, but not be limited to, the following:

.1 home office expense;
.2 field office expense;
.3 supervision;
.4 project management & estimation; and
.5 small tools & equipment.

§ 7.1.8 Unit prices shall be submitted in the Bid Form for various items as set forth therein, and are subject to approval and acceptance by the Owner. The Owner reserves the right to reject any unit price which is unreasonable or unbalanced, as compared with prevailing costs, or as compared with the unit prices submitted by other bidders for the Project. Approved unit prices quoted shall include all profit, overhead, bonds, insurance, labor, materials, equipment, tools, applicable taxes necessary to complete the work item and shall apply to all work added or work deducted.

§ 7.2 Change Orders

§ 7.2.1 A Change Order is a written instrument prepared by the Construction Manager and signed by the Owner, Construction Manager, Architect, and Contractor, stating their agreement upon all of the following:

.1 The change in the Work;
.2 The amount of the adjustment, if any, in the Contract Sum; and
.3 The extent of the adjustment, if any, in the Contract Time.

§ 7.2.1.4 Changes in the Work involving additional Work or deletion of Work effecting an addition to or subtraction from the Contract Sum shall not be made until the Contractor submits to the Architect and Construction Manager the cost of the added or deleted Work with a complete and detailed listing of all Subcontractors involved, all materials, labor, overhead and profit and an appropriate Change Order has been issued. If requested, the Contractor shall submit detailed quotations for Subcontractors and material suppliers. Changes in the Work when not involving additions or

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deletions from the Contract Sum shall not be made until the Architect has issued an appropriate Change Order. All Change Orders must have the approval of the Owner, Construction Manager and Architect in writing.

§ 7.2.2 Methods used in determining adjustments to the Contract Sum may include those listed in Section 7.3.3.

§ 7.2.3 Agreement on any Change Order shall constitute a final settlement of all Claims and other matters related to the change in Work that is the subject of the Change Order, including, but not limited to, all direct and indirect costs associated with such change (including, without limitation, all costs of associated delay, interference, acceleration, inefficiency, overhead, as well as costs of material, labor and supervision), and any and all adjustments to the Contract Sum and the Contract Time. Payment of a Change Order shall constitute accord and satisfaction of all Claims of the Contractor in connection with the change or changes to the Contract addressed by the Change Order and it is understood and agreed that a signed Change Order shall be the complete and fully integrated agreement for all related costs and there are no oral or written understandings, reservations, representations or agreements, directly or indirectly, connected with the Change Order and not affirmatively stated on the signed Change Order. In the event a Change Order increases the Contract Sum, the Contractor shall include the Work covered by such Change Orders in Applications for Payments as if such Work were originally part of the Contract Documents.

§ 7.2.4 Upon the Contractor's completion of the Change Order work, and prior to payment being made to the Contractor for such work, the Contractor shall provide the Owner with the following information:

.1 Certified payrolls itemizing the labor actually utilized in connection with the Change Order work; and

.2 Copies of invoices from its Subcontractors supplying work in connection with the Change Order work.

§ 7.2.5 Additional work performed without authorization of a Change Order will not entitle the Contractor to an increase in the Contract Sum or an extension of the Contract Time, except at provided in Section 7.3, and except in the case of an emergency as provided in Section 10.4.

§ 7.3 Construction Change Directives

§ 7.3.1 A Construction Change Directive is a written order prepared by the Construction Manager and signed by the Owner, Construction Manager and Architect, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions, or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

§ 7.3.2 A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order. In the event the Contractor and the Owner cannot agree on the sum by which the Contract Sum or the amount of time by which the Contract Time is to be increased or reduced based upon changes to the scope of the Work as described in Article 7, the Architect or Construction Manager shall issue a Construction Change Directive reflecting the addition to or reduction of the scope of the Contractor's Contract.

§ 7.3.2.1 If the Owner and the Contractor cannot agree that the requested Work properly forms the basis for a Change Order or on the sum by which the Contract is to be increased or reduced based upon changes to the scope of Work, the Architect or Construction Manager shall issue a Construction Change Directive signed by the Owner, Construction Manager and Architect reflecting the addition to, or removal of, the scope of Work and the Contractor shall (a) in the case of additional work to be performed by the Contractor, perform such additional work in an expeditious manner so as not to delay the Work of the Contractor or other Contractors working at the site an keep records of its performance of such additional work, and (b) in the case of work to be removed from the scope of the Contractor's Work, refrain from taking any steps in connection with the work associated with the deduction of the Contractor's Work. The Construction Change Directive shall include: (a) a description of the work being added or removed from the Contractor's scope of Work; (b) the amount the Owner has determined to be the cost associated with the additional work (as those costs are identified and limited in Section 7.3.4) or removal of the scope of the Contractor's Contract until the Owner and the Contractor agree upon the increase or decrease in the Contractor's Contract Sum, or until a claim filed by the Contractor has been determined; and (c) the extent to which the Contract Time will be adjusted as a result of the change in the scope of Work. Any claims must be filed in accordance with the requirements set forth in Article 15 of these General Conditions. Failure to timely file any claim in accordance with requirements set forth therein shall constitute a waiver of such claim.

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§ 7.3.3 If the Construction Change Directive provides for a method 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 (unit prices shall be deemed to include all costs and expenses for the Contractor's changed Work, including costs of general conditions, insurance/bonds and overhead and profit attributable to the change);

.3 Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee subject to the limitations of Section 7.3.11; or

.4 As provided in Section 7.3.4 subject to the limitations of Section 7.3.11.

§ 7.3.4 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Construction Manager shall determine the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit as set forth in Section 7.3.11. In such case, and also under Section 7.3.11, the Contractor shall keep and present, in such form as the Construction Manager may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.4 shall be limited to the following:

.1 Actual costs of labor, including social security, old age and unemployment insurance, fringe benefits required by agreement or custom, and workers compensation insurance;

.2 Actual costs of materials, supplies, and equipment, including cost of transportation, whether incorporated or consumed;

.3 Actual rental costs of machinery and equipment, exclusive of hand tools, rented from third parties; and

.4 Actual costs of premiums for all bonds and insurance, permit fees, and sales, use or similar taxes related to the additional work.

§ 7.3.5 If the Contractor disagrees with the adjustment in the Contract Time, the Contractor may make a Claim in accordance with applicable provisions of Article 15.

§ 7.3.6 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Construction Manager of the Contractor's agreement or disagreement with (1) the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time or (2) the amount of the increase or decrease in the Contract Sum and Contract Time as provided in Section 7.3.2.1. Any claims must be filed in accordance with the requirements set forth in Article 15 of these General Conditions. Failure to timely file any claim in accordance with requirements set forth therein shall constitute a waiver of such claim.

§ 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 When the Owner or Architect request that portions of the Contractor's Work originally included in the Drawings or Specifications be deleted and which will result in a reduction of the Contract Sum, the Architect shall request that the Contractor submit its proposal for deleting the scope of such Work from the Contract. The Contractor's proposal shall include a complete itemization of the costs associated with deducting such Work including labor, materials, overhead and profit. The Contractor shall not be entitled to retain its overhead or profit for such work nor shall any of its Subcontractors which were to perform the work being deducted from the Contractor's scope of Work. Additionally, the Contractor shall reflect the reduced cost of premiums on bonds which are to be supplied herein as a result of such change. 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 Construction Manager and Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Construction Manager and Architect determine to

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be reasonably justified. The interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15.

§ 7.3.10 When the Owner and Contractor agree with a determination made by the Construction Manager and Architect concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and the Construction Manager shall prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

§ 7.3.11 The limit for the combined overhead and profit included in the total cost to the Owner shall be based on the following schedule:

.1 For the Contractor, for Work performed by the Contractor's own forces, fifteen percent (15%) of the direct cost for labor and materials.

.2 For the Contractor, for Work performed by the Contractor's Subcontractor, maximum of five percent (5%) of the amount due the Subcontractor for the Contractor's overhead and profit. For the Subcontractor, for Work performed by the Subcontractor's own forces, ten percent (10%) of the direct cost for labor and materials. The total combined overhead and profit for a change order shall be limited to 15% of the direct cost regardless if the Work is performed by the Contractor or the Subcontractor.

.3 The markup on any part of the Work a Subcontractor subcontracts will be limited to one overhead and profit figure, in addition to the Contractor's overhead and profit markup. The Subcontractor and Sub-subcontractor may divide the overhead and profit amount as they agree upon.

.4 Cost to which overhead and profit is to be applied shall be determined in accordance with Section 7.3.7.

.5 In order to facilitate checking of quotations for extras and credits, all proposals, except those so minor that their propriety can be seen by inspection, shall be accompanied by a complete itemization of costs including labor, materials, and subcontracts. Labor and material shall be itemized in the manner prescribed above. Where major cost items are subcontracts, they shall be itemized also.

.6 Overhead and profit mark-up shall include, but not be limited to, the following:

- **.1** home office expense;
- **.2** field office expense;
- **.3** supervision;
- **.4** project management & estimation;
- **.5** small tools & equipment;
- **.6** research & layout;
- **.7** inspections & permits;
- **.8** material handing;
- **.9** record drawings: and
- **.10** safety and cleanup

§ 7.4 Minor Changes in the Work

The Architect may order minor changes in the Work that are consistent with the intent of the Contract Documents and do not involve an adjustment in the Contract Sum or an extension of the Contract Time. The Architect's order for minor changes shall be in writing. If the Contractor believes that the proposed minor change in the Work will affect the Contract Sum or Contract Time, the Contractor shall notify the Construction Manager and shall not proceed to implement the change in the Work. If the Contractor performs the Work set forth in the Architect's order for a minor change without prior notice to the Construction Manager that such change will affect the Contract Sum or Contract Time, the Contractor waives any adjustment to the Contract Sum or extension of the Contract Time.

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. The date shall not be postponed or extended by the failure to act of the Contractor or persons or entities for whom the Contractor is responsible to act.

§ 8.1.3 The date of Substantial Completion is the date certified by the Architect in accordance with Section 9.8. The date of final completion is the date certified by the Architect and Owner in accordance with Section 9.10. Unless

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otherwise agreed in writing by the Owner, the Contractor agrees that Final Completion shall occur not more than 30 calendar days after the date of Substantial Completion.

§ 8.1.4 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

§ 8.1.5 Work remaining to be completed after Substantial Completion, shall be limited to items which can ordinarily be completed within a thirty (30) day period (one month) before final payment is made.

§ 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 and the Owner's approval of such insurance. The date of commencement of the Work shall not be changed by the effective date of such insurance. The Work can not start until the required insurance and bonds are provided and the Contract has been executed.

§ 8.2.3 The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion and final completion within the Contract Time. The Contractor agrees that the Work shall be prosecuted regularly, diligently and uninterruptedly at such rate of progress as will ensure full completion thereof within the Contract Time specified and, further, to provide such protections as may be necessary. It is expressly understood and agreed by the Contractor that the time for the substantial and final completion of the Work is a reasonable time for its completion, taking into consideration, among other things, the average climatic range and usual weather conditions prevailing in the Project's locality.

§ 8.2.4 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 (including the equitable value of the changes), or any disputes or disagreements as to the Work or extra work.

§ 8.2.5 If the Contractor does not achieve the completion date and milestone date for each work item in the Contract, a milestone or critical path date reflected on the Project Schedule, or the date of Substantial Completion for the Work or any part thereof, the Contractor shall be responsible for all direct and consequential damages to Owner arising from any delay of the Contractor, its Sub-Contractors, Sub-subcontractors, and suppliers, in performing or completing the Work in accordance with the time requirements of the Contract, by way of example but not as a limitation: (i) additional architectural and construction management fees related to extended services; (ii) additional project management costs; (iii) financing costs (including delayed or lost State Building Aid); (vi) temporary storage and dislocation costs; and (v) costs related to the disruption or relocation of the Owner's personnel, academic and other departments, including equipment and machinery, affected by the Owner's inability to timely occupy the Project facilities. The Owner shall have the right to deduct the amount of the foregoing damages from any payment then due or thereafter becoming due from the Owner to the Contractor. If the Contract Sum is exhausted, the Contractor shall pay such amounts to the Owner on demand.

§ 8.2.6 In the event the Contractor fails to complete all Work under this Contract by said scheduled dates, the Contractor will not be permitted to perform any work during normal school hours without the express written authorization of the Owner. Such Work shall only be performed after school hours, Saturdays, Sundays, holidays or periods when school is unoccupied at no additional cost of any kind to the Owner. In addition to damages incurred by the Owner in connection with the Contractor's delay, the Contractor shall be liable for all costs incurred by the Owner to provide staff, Architect and Construction Manager personnel as required to make facility accessible by Contractor and perform inspections during such off hours.

§ 8.2.7 The Contractor understands that in order to meet the requirements of the Project schedule, including intermittent milestone and critical path dates set forth in the Contract Documents, it may be required to work its personnel and equipment overtime on regular work days and on Saturdays and holidays, the cost of which is included in the Contract Sum. If the Owner specifically approves in writing reimbursement for overtime, the Contractor shall be paid by the Owner on the basis of the premium payment.

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§ 8.2.8 The Owner shall have the right at any time to modify the Project Schedule; to suspend, delay or accelerate, in whole or in part, the commencement or execution of the Work or any potion thereof or to vary the sequence thereof; and to prescribe the time, order and priority of the various portions of the Work, and all other matters relating to the scheduling of the Work. The Contractor shall not be entitled to additional compensation for any such decisions made by the Owner.

§ 8.3 Delays and Extensions of Time

§ 8.3.1 If the Contractor is delayed in the commencement or progress of the Work as a result of: Acts of God (such as tornado, flood, hurricane, pandemics [see exception below], epidemics, etc. making performance temporarily impossible); the negligent acts or omissions of the Owner, Architect, Construction Manager, other Contractors, or their agents or employees; strikes, lockouts or other labor disturbances (not arising from the labor practices of Contractor or its Subcontractors, Suppliers, or Sub-subcontractors to comply with their obligations arising under the Contract); unusually adverse weather conditions; freight embargoes (provided that delays by the Contractor, its Subcontractors, Sub-subcontractors or Suppliers do not constitute an excusable cause of delay); changes in the work to be performed by the Contractor (not caused or resulting from the failure of the Contractor or its Subcontractors, Suppliers or Sub-subcontractors); or changes to laws or regulations after the effective date of the Contract, provided the Contractor has used all reasonable efforts to mitigate the foregoing causes; then the Contractor shall be entitled to a day for day extension of the Contract Time for the established delay to the critical path of the Work subject to the provisions of this Article 8 and Article 15. All other delays of the Project, including but not limited to, Architect review and/or approval of shop drawings or other submittals, requests for information, clarifications, samples, and change orders; Owner schedule; Architect certification of payment; payment by Owner of Contractor's Application for Payment; coordination among the Multiple Prime Contractors; unavailability of materials and/or equipment; surveying/testing; closeout, etc. are deemed to be foreseeable and contemplated and, therefore, shall not form the basis for a claim for an extension of time or additional compensation by the Contractor. Conditions caused by the COVID-19 pandemic or epidemic, or any variants of the disease, shall not form the basis of an excuse under this section. No additional time or compensation shall be provided to the Contractor for COVID-19 or any variant.

§ 8.3.1.1 The Contractor further acknowledges and agrees that adjustments in the Contract Time will be permitted for a delay only to the extent such delay (1) is not caused or could not have been anticipated by the Contractor, (2) could not be limited or avoided by the Contractor's timely notice to the Owner of the delay or reasonable likelihood that a delay will occur, and (3) is of a duration of more than one (1) day.

§ 8.3.1.2 The Contractor's inability to secure sufficient personnel for the performance of the Work shall not constitute a basis for an extension of time. The Contractor shall not be entitled to an extension of time if the Architect or Construction Manager stops the Work due to the existence of or reasonable suspicion of a deficiency in the Work.

§ 8.3.1.3 An extension of the Contract Time, if requested by the Contractor, shall only be considered after the Contractor has made reasonable effort to recover the lost time. An extension, or extensions, of time may be granted subject to the provisions of this Article 8, but only after written application therefore by the Contractor. An extension of time shall be only for the number of days of delay which 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 Construction Manager or Architect.

§ 8.3.1.4 All requests for additional time shall be made in writing, delivered to the Construction Manager within five (5) days from the time when the circumstance with potential for delay becomes reasonably known to the Contractor, supported by documentation which demonstrates to the Architect and Construction Manager's satisfaction that the critical path of the Work has been significantly altered by the delays to the activities in question, and that the Project schedule cannot be maintained by re-ordering other activities within the Project at no cost. This request shall also contain, at a minimum, the following information: (1) date of start of delay; (2) specific cause of delay; (3) effect of delay on construction progress; and (4) date of termination of delay. Upon receipt of the Contractor's request for an extension of time, the Owner will ascertain the facts and extent of the delay, and may, in its sole discretion, extend the time for completion of the Contractor's Work when in its judgment such an extension is justified. The Owner's determination will be final and binding in any litigation commenced by the Contractor against the Owner which arises out of the Owner's denial of an extension of time to the Contractor. Any approval of an extension of the Contractor's time to complete its Work shall be memorialized by written change order, signed by the Owner, Contractor, Architect

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and Construction Manager. When the Owner determines that the Contractor will be granted an extension of time, such extension shall be computed in accordance with the following: for each day of delay in the completion of its Work, the Contractor shall be allowed one day of additional time to complete its Contract. The Contractor shall not be entitled to receive a separate extension of time for each one of several causes of delay operating concurrently; rather, only the actual period of delay as determined by the Owner or its Architect may be allowed.

§ 8.3.1.5 Failure of the Contractor to give written notice as required by Section 8.3.1.4 or to strictly comply with the requirements of Article 8 shall be deemed conclusively to be a waiver and release of such claim, and such notice shall be a condition precedent to the Contractor's right to make a claim for any claim arising out of, under or in connection with the Contractor or the performance of the Work.

§ 8.3.2 Notwithstanding anything to the contrary in the Contract Documents, an extension in the Contract Time, to the extent permitted and justified under Section 8.3.1, shall be the sole remedy of the Contractor for, and the Contractor waives its right to any claim for damages to the extent arising from, any (1) delay in the commencement, prosecution, or completion of the Work; (2) hindrance or obstruction in the performance of the Work; (3) loss of productivity or acceleration; or (4) other claims for disruption, interference, inefficiencies, impedance, hindrance, acceleration, resequencing, schedule impacts, lack of timeliness by the Owner or its consultants, and lack of coordination, errors or omissions in the design of the Project, cumulative impact of multiple change orders, delay and other impacts (collective referred to herein as "Delay(s)"). In no event shall the Contractor be entitled to any compensation or recovery of any damages in connection with any Delay, including, but not limited to, delay costs, loss of productivity or efficiency, lost profits, extended jobsite general conditions and home office overhead, consequential damages, lost opportunity costs, impact damages, or other similar remuneration. The Owner's exercise of any of its rights or remedies under the Contract Documents (including, but not limited to, ordering changes in the Work, or directing suspension, rescheduling or correction of the Work), regardless of the extent or frequency of the Owner's exercise of such rights or remedies, shall not be construed as interference, hindrance or obstruction with the Contractor's performance of the Work and shall not entitle the Contractor to any additional compensation. The Contractor shall include a no-damages-for-delay clause in all subcontracts for the performance of the Work.

§ 8.3.3 Delays that affect the scheduled completion of the Work and are attributable to interference between Multiple Prime Contractors, Separate Contractors, Subcontractors, suppliers, utility companies or municipalities, shall be compensated solely by the granting of an extension of time to the Contractor by the Owner to complete the Work without charges to the Owner. The parties acknowledge that the Contract Time takes into account the time necessary for review of shop drawings, design errors or omissions, coordination amongst Contractors, change orders, delays incurred by seasonal limitations and other administrative processing by all parties involved and are not compensatory. The Contractor agrees that it has included in its Bid prices the additional cost of doing work under this Contract caused by interference of other Prime Contractors, Separate Contractors, Subcontractors, etc. and the other non-compensatory Delays described above.

§ 8.3.4 When the Contract Time has been extended, as provided under Section 8.3, such extension of time shall not be considered as justifying extra compensation to the Contractor for administrative costs, home office, estimating, extended general conditions or other similar impact costs. The Contractor acknowledges that in agreeing to the Contract Sum it assessed the potential impact of the limitations in Section 8.3.2 on its ability to recover additional compensation in connection with a Work delay, interference, impact or hindrance and agrees that those limitations shall apply regardless of the accuracy of the Contractor's assessment or actual costs incurred by the Contractor.

§ 8.3.5 If the Contractor submits a progress report indicating, or otherwise expresses an intention to achieve, completion of the Work prior to any completion date required by the Contract Documents or expiration of the Contract Time, no liability of the Owner to the Contractor for any failure of the Contractor to so complete the Work shall be created or implied.

§ 8.3.6 The intent of the Contract is for Work to follow a logical sequence. The Contractor, however, may be required by the Owner, Construction Manager or Architect to temporarily omit or leave out any section of Work or perform Work out of sequence. Out of sequence work and come back time to these areas shall be performed at no additional cost to the Owner.

§ 8.3.7 Claims relating to Contract Time shall be made in accordance with applicable provisions of Article 15.

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§ 8.4 LIQUIDATED DAMAGES

§ 8.4.1 Contractor realizes that time is of the essence on this Contract and the Construction Schedule shall be submitted per Sections included herein. In the event the Contractor fails to submit a Construction Schedule by said date, the sum per calendar day of ($300) THREE HUNDRED DOLLARS will be subtracted from the Contract Sum due the Contractor in the form of a change order.

§ 8.4.2 Contractor realizes that time is of the essence on this Contract and the completion date for any work or the date of Substantial Completion shall be no later than the date indicated in these Contract Documents. The Contractor understands that the substantial disruption of the School District's educational process will occur if the project is not completed by the dates outlined in Division 1 of the specifications. In the event that the Contractor fails to complete any work or substantially complete the work under the Contract by said schedule, the sum per calendar day of ($1,000) FIVE HUNDRED DOLLARS will be deducted from the Contract Sum due the Contractor in the form of a change order, except in cases where a delay is due to unforeseeable causes beyond the control and without the fault or negligence of the Contractor, including acts of God, or of the Public enemy, acts of the government, in either sovereign or contractual capacity, fires, floods, epidemics, (except COVID-19 or its variants) quarantine restrictions (except from COVID-19 or its variants), freight embargos, or delays of Subcontractors or suppliers due to such causes. Delays in acquisition of materials other than by reason of freight embargoes will not constitute a delay excusable under this provisions unless approved by the Owner in writing.

Within five (5) calendar days from the occurrence of any such delay, the Contractor shall notify the Owner in writing the cause of delay. The Owner will ascertain the facts and extent of the delay, and extend the time for completing the Work when in his judgment the findings of fact justify such an extension. Owner's findings of fact will be final and binding on any litigation.

The said sum per calendar day shall constitute the Liquidated Damages incurred by the Owner for each day of the delay beyond the agreed upon dates. Such Liquidated Damages shall be in addition to any other damages (other than by reason of delay) Owner may incur as a result of Contractor's breach of Contract.

In the event the Contractor fails to complete all work under this Contract by said scheduled dates, the Contractor will not be permitted to perform any work during the normal school hours. Such work shall only be performed after school hours, Saturdays, Sundays, holidays or periods when school is unoccupied at no additional cost of any kind to the Owner. In addition to Liquidated Damages, the Contractor shall be liable for all additional costs incurred by the Owner to provide staff, Architect, and Owner's Representative personnel as required to make facility accessible by Contractor and perform inspections during such off hours. In the event that the completion dates are not met, inspections will be performed once each week unless, the Owner or the Architect determine, at their sole discretion, that additional inspections are needed.

All costs incurred by the Owner, Owner's Representative, Architect, Architect's consultants, for the cost of additional inspections, at the rate of ($800) EIGHT HUNDRED DOLLARS per inspection or more due to time requirements, will be subtracted from payment due the Contractor. If the amount due the Contractor for payment is insufficient, any deficiency shall be paid by the Contractor to the Owner. Additionally, a cost of $750 per day for extended Construction Management time will be charged to the Contractor causing the delay.

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. Notwithstanding anything to the contrary contained in the Contract Documents, the Owner may withhold or offset any payment to the Contractor if and for so long as the Contractor fails to perform any of its obligations under any of the Contract Documents; provided, however, that any such holdbacks shall be limited to an amount sufficient in the reasonable opinion of the Owner to cure any default or failure of performance by the Contractor.

§ 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.

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§ 9.2 Schedule of Values

§ 9.2.1 Within 30 days of Contract Award, the Contractor shall submit to the Construction Manager a schedule of values allocated to various portions of the Work for each building, prepared in the currently authorized form of AIA Document G703 – Continuation Sheet and supported by such data to substantiate its accuracy as the Construction Manager and Architect may require. This schedule, unless objected to by the Construction Manager or Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment. The schedule of values shall state the names of all Subcontractors, Sub-subcontractors and material suppliers and the amounts to become due to each breakdown by specification section. The schedule of values shall contain, along with individual work items, separate line items for (1) mobilization, bonds, insurance, etc., (2) value of administrative close out submittals, (3) Allowance(s) if required elsewhere in the Project Manual, (4) separate subtotals by building, and (5) buildings further separated between "Additions/New Construction" and "Renovations/Reconstruction" as applicable. At the direction of the Architect, it shall include quantities, if applicable. The total for all items shall aggregate the Contract Sum.

§ 9.2.2 Any schedule of values that fails to include sufficient detail, is unbalanced or exhibits "front loading" of the value of the Contractor's Work will be rejected. Furthermore, if the schedule of values has been approved by the Construction Manager and the Architect and is subsequently used, but later is found by the Construction Manager or Architect to be improper for any reason, sufficient funds shall be withheld from the Contractor's future applications for payment to ensure an adequate reserve (exclusive of normal retainage) to complete the Contractor's Work.

§ 9.2.3 The schedule of values shall be drafted so as to reflect multiple construction sites, multiple locations within each site, additions versus renovations of work, and the like so as to satisfy any New York State Education Department requirements for the Project.

§ 9.3 Applications for Payment

§ 9.3.1 In accordance with Article 5 of the Agreement and the Payment Procedures in the Specifications, the Contractor shall submit to the Architect an itemized Application for Payment prepared in accordance with the schedule of values, notarized and reflecting retainage as provided elsewhere in the Contract Documents. Applications for Payment will be in the currently authorized form of AIA Document G732 - 2019, "Application and Certificate for Payment," accompanied by AIA Document G703-1992, "Continuation Sheet," and must include (add and/or deduct) adjustments to the Contract Sum resulting from Work performed under approved Change Orders (specified under Article 7) and shall be shown separately on the application for previous and current periods. Each Application and Certificate of Payment shall be accompanied by two (2) copies of the Pay Application Lien Waiver and Release in the form set forth in the Payment Procedures in the Specifications. Each Application for Payment shall be prepared in such form and supported by such data to substantiate the Contractor's right to payments as the Owner, Construction Manager or Architect may require such as copies of requisitions from Subcontractor and material suppliers. Each Application for Payment forwarded to the Owner by the Construction Manager or Architect shall be subject to audit and approval by the Owner in accordance with the Owner's normal audit.

§ 9.3.1.1 The Construction Manager and Architect shall review the application for payment submitted by the Contractor and shall advise the Contractor of any adjustments to be made thereto. The Construction Manager and/or the Architect may make such adjustments under the circumstances set forth in Section 9.5.1. If any such adjustments are made by the Architect or Construction Manager, the Contractor shall submit an original itemized revised application with all documentation required by Section 9.3.1.

§ 9.3.1.2 As provided in Section 7.3.9, such applications may include requests for payment on account of changes in the Work that have been properly authorized by Construction Change Directives, or by interim determinations of the Construction Manager and Architect, but not yet included in Change Orders.

§ 9.3.1.3 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 material supplier unless such Work has been performed by others whom the Contractor intends to pay.

§ 9.3.1.4 Until Substantial Completion, the Owner shall pay ninety-five percent (95%) of the amount due the Contractor on account of progress payments, less an amount necessary to satisfy any claims, liens, or judgments against Contractor, which have not been suitably discharged. In accordance with Section 9.8.5, the Owner shall pay the entire amount retained from previous progress payments less two (2) times the amount required to complete items

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identified in a list prepared in accordance with Section 9.8.2 and the amount required to satisfy any outstanding claims, liens, or judgments against the Contractor.

§ 9.3.1.5 The Contractor and its Subcontractors are required to submit certified payroll information to the Owner in accordance with New York State Law.

§ 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 Project site for subsequent incorporation in the Work. If approved in advance in writing 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. The costs of applicable insurance, storage, and transportation to the site for such materials and equipment stored off the site shall not increase the Contract Sum.

§ 9.3.2.1 Payment may be made for materials and equipment delivered and suitably stored on-site for future incorporation in the Work, subject to the following conditions:

.1 Request for payment shall be considered for material or equipment, which is in short or critical supply, which has been specially fabricated for the Project or, at the discretion of the Construction Manager and Architect, for other materials or equipment.

.2 A request for payment of material stored on-site must be made by the Contractor ten (10) days prior to actual, monthly cut-off date for Payment Applications.

.3 Procedures required by the Owner shall include, but not necessarily limited to, submission by the Contractor to the Construction Manager and Architect of bills of sale and bills of lading for such materials and equipment, provisions of opportunity for the Construction Manager's and Architect's visual verification that such materials and equipment are in fact in storage; and, if stored off-site, submission by the Contractor of verification that such materials and equipment are stored in a bonded warehouse.

.4 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, but the care and protection of such materials and equipment shall remain the responsibility of the Contractor until incorporation into the Work and accepted by the Owner at substantial completion, including maintaining insurance coverage on a replacement cost basis without voluntary deductible.

§ 9.3.2.2 Payment may be made for materials and equipment delivered and suitably stored off-site for future incorporation in the Work, subject to the following conditions:

.1 The Contractor shall submit: a written validation by the Owner, Construction Manager or Architect that such materials are stored safely off site, in the quantities and condition stated by the Contractor; a copy of an invoice for the material and equipment; a bill of sale or equivalent indication of the quantity and value of the material or equipment; a written statement indicating the location and method of storage; and property insurance certificate or rider covering the specific material or equipment, which shall name the Owner as an additional insured party.

.2 The Contractor shall submit a verification that such materials and equipment are stored in a bonded warehouse.

.3 A request for payment of material stored off-site must be made by the Contractor 10 days prior to actual, monthly cut-off date for Payment Applications.

.4 All such materials and equipment upon which partial payments have been made shall become the property of the Owner, but the care and protection of such materials and equipment shall remain the responsibility of the contractor until incorporation into the Work and accepted by the Owner at substantial completion, including maintaining insurance coverage on a replacement cost basis without voluntary deductible.

§ 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

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encumbrances in favor of the Contractor, Subcontractors, material suppliers, or other persons or entities making a claim by reason of having provided labor, materials and equipment relating to the Work.

§ 9.3.4 The Contractor further expressly undertakes to defend the Indemnitees (as defined previously in Section 3.18), at the Contractor's sole expense, against any actions, lawsuits or proceedings brought against Indemnitees as a result of liens filed against the Owner, the Work, the site of any of the Work, the Project site and any improvements thereon, payments due the Contractor or any portion of the property of any of the Indemnities (referred to collectively as liens in this Section 9.3.4). The Contractor hereby agrees to defend, indemnify, and hold Indemnitees harmless against any such liens or claims of lien and agrees to pay any judgment or lien resulting from any such actions, lawsuits, or proceedings.

§ 9.3.5 The Owner shall release any payments withheld due to a lien or a claim of lien if the Contractor obtains security acceptable to the Owner or a lien bond which is: (1) issued by a surety acceptable to the Owner, (2) in form and substance satisfactory to the Owner, and (3) in an amount not less than One Hundred Fifty percent (150%) of such lien claim. By posting a lien bond or other acceptable security, however, the Contractor shall not be relieved of any responsibilities or obligations under this Section 9.3, including, without limitation, the duty to defend and indemnify the Indemnities in an action on the lien, lien discharge bond or underlying debt. The cost of any premiums incurred in connection with such bonds and security shall be the responsibility of the Contractor and shall not be part of, or cause any adjustment to, the Contract Sum.

§ 9.4 Certificates for Payment

§ 9.4.1 The Construction Manager will, within seven (7) days after the Construction Manager's receipt of the Contractor's Application for Payment, review the Application, certify the amount the Construction Manager determines is due the Contractor, and forward the Contractor's Application and Certificate for Payment to the Architect. Within seven (7) days after the Architect receives the Contractor's Application for Payment from the Construction Manager, the Architect will either issue to the Owner a Certificate for Payment, with a copy to the Construction Manager, for such amount as the Architect determines is properly due, or notify the Construction Manager and Owner in writing of the Architect's reasons for withholding certification in whole or in part as provided in Section 9.5.1. The Construction Manager will promptly forward to the Contractor the Architect's notice of withholding certification.

§ 9.4.2 Where there is more than one Contractor performing portions of the Project, the Construction Manager will, within seven (7) days after the Construction Manager receives all of the Contractors' Applications for Payment: (1) review the Applications and certify the amount the Construction Manager determines is due each of the Contractors; (2) prepare a Summary of Contractors' Applications for Payment by combining information from each Contractor's application with information from similar applications for progress payments from the other Contractors; (3) prepare a Project Application and Certificate for Payment; (4) certify the amount the Construction Manager determines is due all Contractors; and (5) forward the Summary of Contractors' Applications for Payment and Project Application and Certificate for Payment to the Architect.

§ 9.4.2.1 Within seven (7) days after the Architect receives the Project Application and Project Certificate for Payment and the Summary of Contractors' Applications for Payment from the Construction Manager, the Architect will either (1) issue to the Owner a Project Certificate for Payment, with a copy to the Construction Manager; or (2) issue to the Owner a Project Certificate for Payment for such amount as the Architect determines is properly due, and notify the Construction Manager and Owner of the Architect's reasons for withholding certification in part as provided in Section 9.5.1; or (3) withhold certification of the entire Project Application for Payment, and notify the Construction Manager and Owner of the Architect's reason for withholding certification in whole as provided in Section 9.5.1. The Construction Manager will promptly forward the Architect's notice of withholding certification to the Contractors.

§ 9.4.3 The Construction Manager's certification of an Application for Payment shall be based upon the Construction Manager's evaluation of the Work and the information provided as part of the Application for Payment. The Construction Manager's certification will constitute a representation that, to the best of the Construction Manager's knowledge, information and belief, the Work has progressed to the point indicated and the quality of the Work is in accordance with the Contract Documents. The certification will also constitute a recommendation to the Architect and Owner that the Contractor be paid the amount certified.

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§ 9.4.4 The Architect's issuance of a Certificate for Payment shall be based upon the Architect's evaluation of the Work, the recommendation of the Construction Manager, and information provided as part of the Application for Payment. The Architect's certification will constitute a representation that, to the best of the Architect's knowledge, information and belief, the Work has progressed to the point indicated, that the quality of the Work is in accordance with the Contract Documents, and that the Contractor is entitled to payment in the amount certified.

§ 9.4.5 The representations made pursuant to Sections 9.4.3 and 9.4.4 are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion and to specific qualifications expressed by the Construction Manager or Architect.

§ 9.4.6 The issuance of a separate Certificate for Payment or a Project Certificate for Payment will not be a representation that the Construction Manager or Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work, (2) reviewed the Contractor's construction means, methods, techniques, sequences or procedures, (3) reviewed copies of requisitions received from Subcontractors and material suppliers and other data requested by the Owner to substantiate the Contractor's right to payment or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

§ 9.5 Decisions to Withhold Certification

§ 9.5.1 The Construction Manager or Architect may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Construction Manager's or Architect's opinion the representations to the Owner required by Section 9.4.4 and 9.4.5 cannot be made. If the Construction Manager or Architect is unable to certify payment in the amount of the Application, the Construction Manager will notify the Contractor and Owner as provided in Section 9.4.1. If the Contractor, Construction Manager 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 Construction Manager or Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence or subsequent observations, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Construction Manager's or Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from the acts and omissions described in Section 3.3.2 because of

.1 defective Work not remedied;
.2 third party claims filed or reasonable evidence indicating probable filing of such claims unless security acceptable to the Owner is provided by the Contractor;
.3 failure of the Contractor to make payments properly to Subcontractors or suppliers for labor, materials or equipment;
.4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
.5 damage to the Owner, another Prime Contractor 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;
.7 failure to carry out the Work in accordance with the Contract Documents;
.8 receipt by the Owner of a notice of withholding from the New York State Department of Labor or other administrative agencies having jurisdiction over the Project;
.9 failure to comply with applicable federal, state or local statutes, regulations, and/or laws, including, without limitation, laws and regulations applicable to the provision of certified payrolls;
.10 failure of the Contractor to provide executed performance and payment bonds and a current certificate of insurance and endorsements;
.11 reasonable evidence that the Work has not progressed as indicated on the Application for Payment;
.12 damages caused to the Owner, Construction Manager, the Architect or another Contractor as a result the Contractor's performance of its Work;
.13 the Architect's and/or the Construction Manager's discovery or observation of work which has been previously paid for by the Owner which is defective and/or incomplete;
.14 The amount requested exceeds the percent completion of Work on the site; or
.15 breach of this Agreement.

Notwithstanding the extent to which the Construction Manager and/or Architect certify an Application for Payment, the Owner shall have the right to withhold payment, in whole or in part, should the Owner determine that any of the grounds for withholding certification set forth in this Section 9.5.1 do in fact exist. If the Owner withholds payment, in

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whole or in part, the Owner shall promptly provide to the Contractor, Architect and Construction Manager a written explanation of the reason(s) for which payment is withheld and shall promptly pay, in accordance with the Contract Documents, all amounts which are not in dispute.

§ 9.5.2 If the Contractor disputes any determination by the Owner, Construction Manager or Architect with regard to any Certificate for Payment or in the event of a bona fide dispute between the Contractor and Owner, the Contractor nevertheless shall expeditiously continue to prosecute the Work and may submit a Claim in accordance with Article 15.

§ 9.5.3 When the above reasons for withholding certification or the Owner's withholding of payment are removed, certification will be made for amounts previously withheld.

§ 9.5.4 If the Architect or Construction Manager withholds certification for payment under Section 9.5.1, or if the Owner otherwise deems it necessary to protect its interests or the interests of the Project, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or material or equipment suppliers to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Construction Manager and both will reflect such payment on the next Certificate for Payment.

§ 9.5.5 Notwithstanding anything above to the contrary, the Owner has the right to withhold payment to the Contractor to protect itself against damages incurred or which may be incurred as a result of the Contractor's breach or negligence, including, but not limited to, the items set forth in Section 9.5.1. With respect to any liens, claims, or other circumstances for which the Owner is entitled to withhold payments pursuant to decisions by the Architect pursuant to Section 9.5.1, the Owner shall be entitled to withhold a sum equal to twice the stated amounts of such liens or claims, or, where there is no stated amount, twice the amount determined by the Architect to be necessary to protect the interests of the Owner. The Owner will release payments withheld due to liens provided that the Contractor obtains a discharge of record of such lien, by bonding or otherwise. By posting a lien discharge bond, however, the Contractor shall not be relieved of any responsibilities or obligations under the Agreement, including, without limitation, the duty to defend, indemnify, and hold harmless the Indemnitees (as defined previously in Section 3.18). The cost of any premiums or other expenses incurred in connection with such bonds or other means of discharge of record shall be the sole responsibility of the Contractor and shall not be part of, or cause any adjustment to, the Contract Sum.

§ 9.5.6 If the Owner is entitled to reimbursement or payment from the Contractor under or pursuant to the Contract, including but not limited to these General Conditions, such payment shall be made promptly upon demand by the Owner. Notwithstanding anything contained herein to the contrary, if the Contractor fails to promptly make any payment due the Owner, or the Owner incurs any costs and expenses to cure any default of the Contractor or to correct defective work, the Owner shall have an absolute right to offset such amount against the Contract Sum and may, in the Owner's sole discretion, elect either to: (1) deduct an amount equal to that which the Owner is entitled from any payment then or thereafter due the Contractor from the Owner, or (2) issue a written notice to the Contractor reducing the Contract Sum by an amount equal to that which the Owner is entitled.

§ 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 unless such requisition is not in accordance with the terms of the Contract Documents, and shall so notify the Construction Manager and Architect.

§ 9.6.2 Payments received by the Contractor for Work properly performed by Subcontractors and suppliers shall be held in trust by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contracts with the Contractor for which payment was made by the Owner. The Contractor shall strictly comply with any common law, statutory, or decisional law trust fund requirements in the State of New York (including, without limitation, the requirements of New York Lien Law Article 3-A), and hereby agrees that the Owner has the same rights as any beneficiary of such trusts to examine the books and records of the Contractor to determine such compliance, from time to time at the Owner's sole discretion. The Contractor shall promptly pay each Subcontractor, upon receipt of payment from the Owner, out of the amount paid to the Contractor on account of such Subcontractor's portion of the Work, the amount to which said Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of such Subcontractor's portion of the Work. The

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Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in similar manner.

§ 9.6.2.1 Within seven (7) days of receipt of a payment from the Owner, the Contractor shall pay each of its Subcontractors and suppliers for work performed and materials furnished by them as reflected in the payment from the Owner, less an amount necessary to satisfy any outstanding claims, liens, or judgments and less a retained amount of not more than 5%, except that the Contractor may retain not more than 10% provided that prior to entering into a Subcontract with the Contractor, the Subcontractor is unable or unwilling to provide a performance bond and labor and material payment bond both in the full amount of the subcontract at the request of the Contractor. The Contractor shall not retain portions of the proceeds owed any Subcontractor or supplier from the Owner's payment to the Contractor for the "contract balance." Similar provisions apply to the Subcontractor and/or supplier paying each of its Subcontractors and suppliers. Nothing in this Section shall create in the Owner any obligation to pay, or to ensure that the Contractor pays, any Subcontractor or supplier, or any relationship in contract or otherwise, implied or expressed, between any Subcontractor or supplier and the Owner. The Contractor agrees that it shall comply with the payment requirements of Section 106-b(2) of the New York General Municipal Law, as amended, and that to the extent there is any conflict between that statutory section and the provisions of this Section 9.6.2.1, the provisions of the statute shall prevail.

§ 9.6.3 The Construction Manager will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Owner, Construction Manager and Architect on account of portions of the Work done by such Subcontractor.

§ 9.6.4 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and material and equipment suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven (7) days, the Owner shall have the right to contact Subcontractors to ascertain whether they have been properly paid. Neither the Owner nor Construction Manager nor Architect shall have an obligation to pay or to see to the payment of money to a Subcontractor except as may otherwise be required by law.

§ 9.6.5 The Contractor's payments to its 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 Payments received by the Contractor for Work properly performed by Subcontractors and 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, shall create any fiduciary liability or tort liability on the part of the Contractor for breach of trust or shall entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

(Paragraph deleted)

§ 9.7 Failure of Payment

§ 9.7.1 If, through no fault of the Contractor, the Construction Manager and Architect do not issue a Certificate for Payment within 20 days of the Construction Manager's receipt of the Contractor's Application for Payment or if, through no fault of the Contractor, the Owner does not pay the Contractor the amount certified by the Construction Manager and Architect, subject to the Owner's right to withhold payment under the terms of the Contract Documents, within 30 days of the date established for such payment in the Contract Documents, then the Contractor may, upon seven (7) additional days' written notice and opportunity to cure to the Owner, Construction Manager and Architect, stop the Work until payment of the amount owing has been received. To the extent it is determined that payment to the Contractor was improperly held through no fault of the Contractor and the Contractor elected to stop its Work consistent with the procedure set forth in this Section, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shut-down, delay and start-up as provided for in the Contract Documents. However, if the Contractor stops its Work and it is determined that the Owner had the right to withhold payment under the terms of the Contract Documents, then the Contractor shall be responsible to the Owner for all costs and damages (including attorneys' fees) arising from such stoppage of Work and

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the Contractor shall not be entitled to any adjustment in the Contract Sum or the Contract Time. This Section shall not apply: (a) to the extent that the Contractor owes to the Owner any amount pursuant to the provisions of this Contract, or (b) to the extent the Owner is required to expend amounts to purchase additional insurance on behalf of the Contractor to meet the insurance requirements of this Agreement.

§ 9.7.2 If the Owner is entitled to payment from the Contractor under or pursuant to the Contract Documents, such payment shall be made promptly upon demand by the Owner. Notwithstanding anything contained in the Contract Documents to the contrary, if the Contractor fails to promptly make any payment due the Owner, or the Owner incurs any costs or expenses to cure any default of the Contractor or to correct defective work, the Owner shall have an absolute right to offset such amount against the Contract Sum and may, in the Owner's sole discretion, elect either to (1) deduct an amount equal to that which the Owner is entitled from any payment then or thereafter due the Contractor from the Owner, or (2) issue a written notice to the Contractor reducing the Contract Sum by an amount equal to that which the Owner is entitled.

§ 9.8 Substantial Completion

§ 9.8.1 The date of Substantial Completion of the Project or a designated portion thereof is the date when construction is sufficiently complete in accordance with the Contract Documents so the Owner can occupy or utilize the entire Project (or such portion thereof as Owner earlier elects to occupy or utilize) for the use for which it is intended. Minor items of completion or correction ("Punch List Work") may be performed after Substantial Completion, provided that such items can and shall be performed at such times and in such manner that such Work does not unreasonably interfere with the Owner's occupancy and use of the Project. Substantial Completion shall not be deemed to exist until (a) the Owner receives a Certificate of Occupancy for the Project (or such portion as elected by Owner) if such Certificate of Occupancy is required, and any other permits, approvals, licenses and any other documents from governmental authorities having jurisdiction therefore necessary for the beneficial occupancy of the Project and (b) the Contractor, Construction Manager, Architect and Owner have agreed upon a schedule for final completion and to provide the Owner with all as-built drawings, operating manuals, warranties and other required closeout documents. Warranties called for by the Agreement or by the Drawings and Specifications shall commence on the date of Substantial Completion of the Project or designated portion thereof, or any later date that the parties agree. This date shall be established by a Certificate of Substantial Completion signed by the Owner, Contractor, Architect and Construction Manager.

§ 9.8.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall notify the Construction Manager, and the Contractor and Construction Manager shall jointly prepare and submit to the Architect a comprehensive list which shall identify all non-conforming, defective and incomplete Work and establish the date of commencement of warranties in connection with any such Work. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

§ 9.8.3 Upon receipt of the list, the Architect, assisted by the Construction Manager, will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect's inspection discloses any item, whether or not included on the list, which is not sufficiently complete in accordance with the requirements of 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 Construction Manager or Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect, assisted by the Construction Manager, to determine Substantial Completion. If the Architect and the Construction Manager are required to perform additional substantial completion inspections because the Work fails to be substantially complete, the amount of compensation paid to the Architect and the Construction Manager by the Owner for additional services shall be deducted from the final payment to the Contractor.

§ 9.8.4 When the Architect, assisted by the Construction Manager, determines that the Work or designated portion thereof is substantially complete, the Construction Manager will prepare, and the Construction Manager and Architect shall execute a Certificate of Substantial Completion that shall establish the date of Substantial Completion, shall establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance, and shall fix the time within which the Contractor shall finish all Punch List Work, which timeframe shall not exceed 30 days. Warranties required by the Contract Documents shall commence on the date of Substantial

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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 such Certificate. Upon such acceptance and consent of surety, if any, the Owner shall make payment of retainage applying to such Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

§ 9.8.5.1 In conformance with New York General Municipal Law Section 106-b(1)(a), upon proper execution of Certificate of Substantial Completion of Work, the Contractor shall submit a requisition for payment of the remaining amount of the Contract Sum. Upon certification of payment by the Architect, the Owner will approve and promptly pay the remaining amount of the Contract Sum less two times value of any remaining items to be completed or corrected and less an amount necessary to satisfy any claims, liens or judgments against Contractor which have not been suitably discharged. Such payment shall be made under terms and conditions governing final payment except that the Owner's making of such payment shall not constitute the Owner's waiver of any objection to all or any portion of the Work performed by the Contractor or any claims the Owner may then have against the Contractor.

§ 9.8.5.2 Neither the requisition for payment stipulated in Section 9.8.5.1 nor any portion of retained percentage shall become due until the Contractor submits to the Construction Manager:

.1 an affidavit that all payrolls, bills for materials and equipment, and other indebtedness connected with the work for which the Owner or the Owner's property might in any way be responsible, have been paid or otherwise satisfied, the form of which will be the currently authorized AIA Document G706, "Contractor's Affidavit of Payment of Debts and Claims";

.2 consent of all sureties, if any, to such payment, the form of which will be the currently authorized AIA Document G707A, "Consent of Surety to Reduction in or Partial Release of Retainage," but which will not be required if the amount withheld under Section 9.8.3.1 exceeds the amount of retainage; and

.3 if required by the Owner, other data establishing payment or satisfaction of all such obligations, such as receipts, releases, and waivers of liens arising out of contract to such extent and in such form as may be designated by the Owner.

§ 9.8.5.3 As the Punch List Work is satisfactorily completed or corrected, the Contractor may submit a requisition for payment of these items. The Contractor shall submit with each such requisition for payment affidavits, consents of surety, and other data as described in Section 9.8.5.2 covering work for which payment is requested. Upon certification of such requisitions by the Architect and Construction Manager, the Owner will approve and promptly pay the requisition less an amount two times that which is necessary to satisfy any claims, liens or judgments against the Contractor which have not been suitably discharged.

§ 9.8.5.4 Where the Project includes heating, air conditioning, electrical, communication, data or other systems which 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 Contractor shall provide complete start up and commissioning of the systems with a detailed check list as recommended by the equipment or system manufacturer. The retained amount shall approximate five percent (5%) of the cost of the systems as determined by the cost breakdown submitted. The guaranty/warranty period for such systems will not commence until after such Architect approval.

§ 9.8.5.5 The Contractor shall complete the Punch List Work for the Project no later than 30 days after Substantial Completion of the Project. The Contractor shall be fully liable to the Owner for all damages suffered by the Owner as a result of delay in achieving final completion of the Work, including without limitation, additional architectural and construction management fees related to extended services.

§ 9.8.6 If the Architect or the Construction Manager is required to inspect the Work more than two (2) times prior to certifying the Work as being substantially complete on account of the discovery of one or more items that are not sufficiently complete, the Contractor shall be liable to the Owner for the amount of any costs, additional fees or compensation due from or paid by the Owner to the Architect and/or the Construction Manager for the additional inspections.

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§ 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 as required under Section 11.3.1.5 and authorized by public authorities having jurisdiction over the Project. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor and Construction Manager shall jointly prepare and submit a list to the Architect as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect after consultation with the Construction Manager.

§ 9.9.2 Immediately prior to such partial occupancy or use, the Owner, Construction Manager, Contractor, and Architect shall jointly inspect the area to be occupied or portion of the Work to be used 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.

§ 9.9.4 The Contractor shall cooperate with the Owner in order to make portions of the Project available as soon as possible.

§ 9.9.4.1 The Project site and buildings, whether work of the Contractor is partially or fully completed or not, are property of the Owner who shall have certain rights and privileges in connection with use of same.

§ 9.9.4.2 Should there be, in the opinion of the Architect or Construction Manager, unwarranted delay on part of any Contractor in completion of incomplete or defective work or other Contract requirements, and the Architect so certifies, the Owner may have full or partial use and occupancy of any or all portions of buildings as required for moving in or installing furniture, fixtures, supplies, or equipment and for general cleaning and maintenance work. In such event, the Contractor whose unfinished work is done subsequent to installation of furniture, fixtures, equipment, etc., shall be responsible for the prevention of any damage to such installation. Such use or occupancy by the Owner shall in no instance constitute acceptance of any of the Work.

§ 9.10 Final Completion and Final Payment

§ 9.10.1 Upon completion of the Work, the Contractor shall forward to the Construction Manager a written notice that the Work is ready for final inspection and acceptance and shall also forward to the Construction Manager a final Contractor's Application for Payment. Upon receipt, the Construction Manager will evaluate the completion of Work of the Contractor and then forward the notice and Application, with the Construction Manager's recommendations, to the Architect who will promptly make such inspection. When the Architect, finds the Work acceptable under the Contract Documents and the Contract fully performed, the Construction Manager and Architect will promptly issue a final Certificate for Payment or Project Certificate for Payment stating that to the best of their knowledge, information and belief, and on the basis of their on-site visits and inspections, the Work has been completed in accordance with the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Construction Manager's and Architect's final Certificate for Payment or Project Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

§ 9.10.1.1 If the Work is not accepted by the Owner after final inspection and additional time is required to complete items identified during the final inspection, the date starting the one-year correction period described in Article 12.2 shall be set by the Architect at his discretion, but not later than the date of the final Certificate for Payment.

§9.10.1.2 If the Architect and the Construction Manager are required to provide additional services, extend the duration of services to the Owner, and/or perform additional final inspections because the Work fails to comply with the requirements of the Contract Documents, or the Contractor did not complete the Work in accordance with the construction schedule or Project schedule, the amount of compensation paid to the Architect and the Construction Manager by the Owner for additional services shall be deducted from the final payment due to the Contractor.

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§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect through the Construction Manager (1) all closeout documents required by the Contract Documents, including, without limitation, as-built drawings, attic stock, maintenance manual, operating instructions and other documents required to be delivered under the Contract in connection with the Work in the form required by the Owner, (2) 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, (3) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect and will not be canceled or allowed to expire until at least 30 days' prior written notice has been given to the Owner, (4) a written statement that the Contractor knows of no substantial reason that the insurance will not be renewable to cover the period required by the Contract Documents, (5) consent of surety, if any, to final payment, (6), if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts, 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, and (7) all warranties and guarantees required by the Contract Documents. 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. If such lien 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 such lien, including all costs and reasonable attorneys' fees.

§ 9.10.2.1 In addition to the submittals required in Section 9.10.2 above, the Contractor shall submit separate final release or waivers of lien for each Subcontractor, material supplier, or others with lien rights against the Project, and shall submit a list of such parties.

§ 9.10.3 If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Construction Manager and Architect so confirm, the Owner shall, upon application by the Contractor and certification by the Construction Manager and Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed, corrected, and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of the surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect through the Construction Manager prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

§ 9.10.4 The making of final payment
(Paragraphs deleted)
by the Owner shall not constitute a waiver of claims, causes of action, damages or complaints by the Owner.

§ 9.10.5 Acceptance of final payment by the Contractor, a Subcontractor or material supplier shall constitute a waiver of claims by that payee except those previously made in writing in accordance with Article 15 and identified by that payee in writing as unsettled at the time of the final Application for Payment.

§ 9.10.6 At any time a lien is filed against the Project funds, the Owner may demand that the Contractor discharge said lien, through bonding or otherwise, and the Contractor must obtain the discharge of said lien within seven (7) days of such demand at the Contractor's sole cost and expense, and at no cost to the Owner. If any lien or other encumbrance required to be removed at the Contractor's sole cost and expense pursuant to this Section is not discharged of record as aforesaid, the Owner shall have the right to take such action as the Owner shall deem appropriate (which shall include the right to cause such lien or other encumbrance to be canceled and discharged of record), and in such event, all costs and expenses incurred by the Owner in connection therewith (including, without limitation, premiums for any bond furnished in connection therewith, and reasonable attorneys' fees,
court costs and disbursements), shall be paid by the Contractor to the Owner on demand or, at the option of the Owner, deducted from any payment then due or thereafter becoming due from the Owner to the Contractor in accordance with the provisions of these General Conditions.

§ 9.10.7 Existing warranties shall not deprive the Owner of any cause of action, right, or remedy otherwise available for breach of any of the provisions of the Contract Documents. The periods referred to above shall not be construed as limitations on the time in which the Owner may pursue any such action, right or remedy.

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§ 9.10.8 The Contractor shall achieve final completion of all Work, including, without limitation, correction of punch-list items, preparation and delivery of all manuals, presentation of training and completion of final paper submissions not later than 30 days following the date of Substantial Completion. In the event the Contractor shall fail to achieve final completion of the Work within such a period of time, the Contractor and the Contractor's surety, if any, shall be liable for and shall reimburse the Owner for any and all fees paid to the Architect and Construction Manager and other expenses made necessary by the Contractor's failure. Additional fees and expenses shall be charged by the Owner against any Final Payment due or which may become due to the Contractor, and the Contractor shall promptly pay or refund the Owner the excess, if any, upon the Owner's written request.

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 Safety Precautions and Programs

The Contractor shall be responsible for initiating, implementing, directing, controlling, maintaining, and supervising all safety precautions and programs in connection with the performance of the Contract. The Contractor shall submit the Contractor's safety program to the Construction Manager for review and coordination with the safety programs of other Contractors. The Construction Manager's responsibilities for review and coordination of safety programs shall not extend to direct control over or charge of the acts or omissions of the Contractors, Subcontractors, agents or employees of the Contractors or Subcontractors, or any other persons performing portions of the Work and not directly employed by the Construction Manager. The Contractor's safety precautions and programs shall include specific steps designed to minimize the risk of contracting or spread of COVID-19, including provision of all appropriate personal protective equipment, social distancing, avoiding stacking of trades, and other reasonable precautions.

§ 10.2 Safety of Persons and Property

§ 10.2.1 The Contractor shall take necessary precautions for safety of, and shall provide reasonable protection to prevent damage, injury, infection or exposure to COVID-19, or loss to

.1 employees on the Work and other persons who may be affected thereby;

.2 the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody, or control of the Contractor, a Subcontractor, or a Sub-subcontractor;

.3 the Owner's real and personal property and 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;

.4 construction or operations by the Owner, Separate Contractors, or other Contractors; and

.5 the existing buildings and premises in the vicinity of or affected by the Contractor's operations.

.6 the contractor agrees, in order that the work will be completed with the greatest degree of safety, to conform to the requirements of the NYS SED rescue regulations (excerpt of the constructors responsibilities section 155.5) and the Occupational Safety and Health Act of 1970 (OSHA) as amended and the Construction Safety Act of 1969 as amended, including all standard and regulations that have been since or shall be promulgated by the governmental authorities which administer such acts, and shall indemnify and hold harmless the owner, Construction Manager, the Architect, and all.

§ 10.2.1.6 Safe access to and egress from any building under construction as part of this Contract, or any existing building in which Work is being done under this Contract, shall be maintained and remain unencumbered by the Contractor in accordance with all applicable codes, rules and regulations of authorities having jurisdiction on the Work. The Contractor and its Subcontractors shall cooperate in maintaining this condition. Roadways, paths, walks, exits, service drives and other areas shall remain unobstructed and shall be maintained in a safe and satisfactory condition, for all persons using the building and premises. Materials shall not be stored promiscuously about the site or in the building, but shall be carefully stored in areas which will not interfere with pedestrian traffic or with access to and egress from adjacent properties and use of the building. The Contractor shall provide and maintain such temporary Work as may be required for the protection of its finished Work where liable to injury. The Contractor will be responsible for all of its Work, materials and equipment that may be damaged or stolen during the duration of the Contract and until the Work is accepted by the Owner. The Contractor shall make good any such damage or loss without expense to the Owner. The Contractor shall not permit unnecessary hazards to be created nor permit them to continue if they are discovered. The Contractor's storage and staging areas shall be only in locations assigned or approved by the Owner and Architect and may be required to be relocated by the Contractor as building occupancy or use changes during the course of the Work. This relocation will be done by the Contractor at no additional cost to the Owner.

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§ 10.2.2 The Contractor shall comply with, and give notices required by, applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities, bearing on safety of persons or property or their protection from damage, injury, or loss.

§ 10.2.2.1 The Contractor acknowledges that the Labor Law of the State of New York, and regulations adopted thereunder, place upon both the Owner and the Contractor certain duties and that liability for failure to comply therewith is imposed on both the Owner and the Contractor regardless of their respective fault. The Contractor hereby agrees that, as between the Owner and the Contractor, the Contractor is solely responsible for compliance with all such laws and regulations imposed for the protection of persons performing the Contract. The Contractor shall indemnify and hold harmless the Owner of and from any and all liability for violation of such laws and regulations and shall defend any claims or actions which may be brought against the Owner as the result thereof. In the event that the Contractor shall fail or refuse to defend any such action, the Contractor shall be liable to the Owner for all costs of the Owner in defending such claim or action and all costs of the Owner, including attorney's fee, in recovering such defense costs from the Contractor.

§ 10.2.2.2 All laborers, workers, and mechanics employed in the performance of the Work of this Project shall be certified as having successfully completed a course in construction safety and health approved by the United States Department of Labor's Occupational Safety and Health Administration that is at least 10 hours in duration. The Contractor and its Subcontractors shall conduct their operation in accordance with the Safety Guides for Construction as issued by State Education Department, and the Contractor's safety program.

§ 10.2.2.3 All safety equipment including hard hats, weather protective gear and PPE required for the Contractor to perform its Work are to be supplied by the Contractor or its Subcontractors. Within the designated construction areas, the Contractor's employees, superintendents, or other agents, and its Subcontractors, employees, superintendents, or other agents are required to wear hard hats and other required or essential safety equipment. Each person seen without a hard hat, or otherwise failing to comply with this requirement, will be ordered to leave the Project. No prior warnings will be given by the Owner, Construction Manager or Architect. The Contractor and its Subcontractors shall be solely responsible for making up and paying for any loss of production or required progress resulting from the removal of personnel from the Project as set forth herein including any costs incurred by the Owner in connection with the work of other contractors.

§ 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 to property referred to in Sections 10.2.1.2, 10.2.1.3 and 10.2.1.4 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2, 10.2.1.3 and 10.2.1.4, except damage or loss attributable to acts or omissions of the Owner, Construction Manager or Architect or anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18, and shall not be limited by such damage or loss being insured under property insurance required by the Contract Documents.

§ 10.2.6 The Contractor shall schedule weekly safety meetings and each of its Subcontractors must be properly represented at such meetings. The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner, Construction Manager and Architect.

§ 10.2.7 The Contractor shall not load or permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition. The Contractor shall not load any part of the Work with materials, equipment, shores,

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bracing, or other items which in any way could cause damage to the Work or to other Work or could endanger persons in or about the Work.

§ 10.2.8 If, during the construction, public or private property is damaged or destroyed as a consequence of its Work, the Contractor shall, at its own expense, restore such property to a condition equal to that existing before such damage or injury was done, by repairing, rebuilding or replacing it, or otherwise making good such damage or destruction in an acceptable manner.

§ 10.2.9 The Contractor shall be responsible for all breakage of glass, which has been furnished and installed as part of Contract and existing glass that is broken due to operations under the Contract for Work. No matter by whom or what cause glass was broken, the Contractor shall replace all broken glass before completion and acceptance of the Contractor's Work. The Contractor may claim damages, if applicable.

§ 10.2.10 In addition to all requirements set forth herein, the Contractor and its Subcontractors shall fully comply with the provisions of the federal Occupational Safety and Health Act of 1970, as amended, and with any rules and regulations pursuant to the Act. This requirement shall apply continuously and not be limited to normal working hours.

§ 10.2.11 The Contractor shall also be responsible, at the Contractor's sole cost and expense, for all measures necessary to protect any property adjacent to the Project and improvements therein. Any damage to such property or improvements shall be promptly repaired by the Contractor at its sole expense.

§ 10.2.12 The Contractor shall immediately contact the Construction Manager and, within 24 hours, report, in writing, to the Owner, Architect and Construction Manager, all accidents arising out of or in connection with the Work which cause death, personal injury, or property damage, giving full details and statements of any witnesses. In addition, if death, serious personal injuries, or serious property damages are caused, the accident shall be reported immediately by telephone or messenger to the Owner, Construction Manager, and Architect.

§ 10.2.13 The Contractor shall be solely responsible for any conditions that develop during construction and in the event any structure is dislocated, over strained, or damaged so as to affect is usefulness, the Contractor shall be solely responsible. The Contractor shall take whatever steps necessary to strengthen, relocate or rebuild the structure to meet requirements at the sole expense of the Contractor.

§ 10.2.14 The Contractor is responsible for restoration or repair of utilities, private property, buildings, pavement, walkways, roads, etc. damaged by its activities under this Agreement to the satisfaction of the Owner, Construction Manager and Architect.

§ 10.2.15 From the commencement to the final completion of the Work, the Contractor shall keep the Work and the Owner's building(s) free from accumulation of water no matter the source or cause of water infiltration.

§ 10.2.16 During construction, the Contractor shall be responsible for maintaining a watertight structure. This responsibility shall include additions/alterations of existing buildings. The Contractor shall be responsible for temporary roofing, tarps and other protection at roofs, cavity walls, etc. Should the Contractor fail to provide adequate protection causing flooding, damage or other disturbance to the existing building(s), the Contractor shall be responsible for all costs associated with clean up, remediation and repairs. Inasmuch as flooding and water damage have safety implications to the general public, clean up, remediation and repairs may be made by the Owner without prior notice to the Contractor. Administration costs incurred by the Owner, Construction Manager and Architect will also be back charged to the Contractor. The Contractor, by entering into this Contract, agrees to be liable for these costs.

§ 10.2.17 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.

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§ 10.3 Hazardous Materials

§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents and all applicable laws, rules and regulations regarding hazardous materials. 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 report the condition to the Owner, Construction Manager and Architect in writing. The Owner shall arrange for the material to be tested and if the test reveals that the material is a hazardous material or substance which has not been rendered harmless, the Owner shall pay for the test; otherwise, the Contractor shall bear the cost of the test and the Contract Sum shall be reduced by the amount of that cost. The Contractor shall comply with the reasonable instructions of the Owner after the test is conducted. This Section shall not apply in the case of asbestos which is to be removed and disposed of as part of the Work of the Contract.

§ 10.3.2 Upon receipt of the Contractor's written notice, the Owner shall obtain the services of a licensed laboratory to verify a 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. 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 in the amount of the Contractor's reasonable additional costs of shut-down, delay and start-up.

§ 10.3.3 To the fullest extent permitted by law, but only to the extent of available insurance proceeds, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Construction Manager, Architect, their consultants, 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 the person seeking indemnification: (1) did not bring such material onto the Project site; (2) timely provided notice of the condition and stopped Work in the affected area as required by Section 10.3.1; and (3) has a claim, damage, loss or expense that is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself). The Owner shall have no indemnity obligation to the extent that such damage, loss or expense is due to the fault or negligence of the party seeking indemnity or the fault or negligence of a third party for whom the Owner is not responsible.

§ 10.3.4 The Owner shall not be responsible under this Section 10.3 for 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 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 indemnify the Owner for the cost and expense the Owner incurs (1) for remediation of a material or substance 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 or fault 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 (that was not brought to the site by the Contractor or those for whom the Contractor is responsible) 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.

§ 10.3.7 The Contractor shall notify the Owner of any storage, use, or discovery of hazardous material on the Project site which the Contractor knows or reasonably should know could cause bodily injury or death and of any injury or death attributable to any such hazardous material.

§ 10.3.8 The Contractor shall take all reasonable precautions and measures to prevent any contamination by or spread or disturbance of hazardous or potentially hazardous substances or materials stored, used, or discovered on the Project site.

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§ 10.3.9 For the avoidance of any doubt, COVID-19 shall not be considered a Hazardous Material for purposes of this Article 10.3.

§ 10.4 Emergencies

§ 10.4.1 The Contractor shall provide at the site, such equipment and medical facilities as are necessary to supply first-aid service to anyone at the Work.

§ 10.4.2 The Contractor must promptly report in writing to the Construction Manager all emergencies whatsoever arising out of, or in connection with the performance of the Work, whether on, or adjacent to the site, which caused death, personal injury or property damages, giving full details and statements of witnesses. In addition, if death, injury, or damages are caused, the emergency shall be reported immediately to the Construction Manager, Owner, and Architect.

§ 10.4.3 In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7.

§ 10.4.4 All fire and emergency access, including roads, rights-of-way, corridors, doors, and stairs, and all existing fire and smoke detection systems shall be maintained at all times in accordance with fire safety laws. If the Work requires the temporary obstruction of any fire and emergency access or existing fire and smoke detection systems, the Construction Manager shall be notified at least 72 hours in advance.

ARTICLE 11 INSURANCE AND BONDS

§ 11.1 Contractor's Insurance and Bonds

§ 11.1.1 The Contractor agrees to secure and maintain, at Contractor's own expense, all insurance coverage required in this Article 11 from one or more insurance companies licensed and admitted to write such insurance in New York State. Insurers must carry an A.M. Best Financial Strength rating of A- or higher. The Contractor's insurance must include the following, without limitation, and must be written with limits no less than specified in Section 11.1.2:

- **.1** claims under workers' compensation, disability benefit, and other similar employee benefit acts applicable to the Work to be performed, including, without limitation, claims by the employees of private entities performing Work at the site that are exempt from workers' compensation insurance coverage requirements on account of number of employees or occupation, which entities must maintain voluntary compensation coverage at the same limits specified for mandatory coverage for the duration of the Project;
- **.2** claims for damages because of bodily injury, occupational sickness or disease, or death of the Contractor's employees;
- **.3** claims for damages because of bodily injury, sickness, disease, or death of any person other than the Contractor's employees;
- **.4** claims for damages insured by usual personal injury liability coverage sustained (1) by a person as a result of an offense directly or indirectly related to employment of such person by the Contractor, or (2) by another person;
- **.5** claims for damages, other than to the Work itself, because of injury to or destruction of tangible property, including resulting loss of use resulting;
- **.6** claims for damages because of bodily injury, death of a person, or property damage arising out of ownership, maintenance, or use of a motor vehicle; and
- **.7** claims involving contractual liability applicable to the Contractor's obligations under Section 3.18.
- **.8** A fully completed New York Construction Certificate of Liability Insurance Addendum (Acord 855 2014/15) must be included with the certificates of insurance. For any "yes" answers on Items G through L on this Form – additional details must be provided in writing. No exclusions, restrictions and/or modifications to coverages will be accepted.
- **.9** **Where the Contract or Subcontract involves asbestos, the insurance required by section 11.1 shall specifically include the words asbestos abatement work and shall specify any limitations on completed operation time. If there is a limitation it will be at the owner's discretion to accept or reject that limitation.**
- .10 Insurance must remain in effect at least until final payment and all items thereafter when the contractor may be correcting, removing or replacing defective work in accordance with this document, and
- .11 Liability insurance shall include all major divisions of coverage and be on a comprehensive basis including:
  .1 Premises operations without exclusion of x,c, and u coverage;

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.2 Independent Contractors Protective;
.3 Products and completed operation;
.4 Personal Injury Liability;
.5 Owned, non-owned and owned motor vehicles
.7 Broad form property damage including completed operations

§ 11.1.2 Coverages, whether written on an occurrence or claims-made basis, must be maintained without interruption from the date of commencement of the Work until the date of final payment and termination of any coverage required to be maintained after final payment. Claims-made coverage will only be allowed when the Contractor demonstrates that occurrence-based coverage is not available for a specific type of required coverage. The insurance required by Section 11.1.1 must be written for not less than the following limits, or greater limits as may be required by law, and include the following terms:

.1 Commercial General Liability. Occurrence-based Commercial General Liability coverage to include bodily injury, personal injury, and property damage applicable to ongoing operations, products & completed operations, and contractual liability, all with a per-project aggregate endorsement. No XCU exclusion is allowed for explosion, collapse, and underground operations. Products and Completed Operations coverage must be maintained in force for a minimum of two (2) years following Final Completion of the Project. Minimum limits are:

$2,000,000	General Aggregate
$2,000,000	Products and Completed Operations Aggregate
$1,000,000	Personal and Advertising Injury
$1,000,000	Each Occurrence
$1,000,000	Personal and Advertising Injury
$ 100,000	Fire Damage (any one fire)
$ 10,000	Medical Expense (any one person)

.2 Automobile Liability. Bodily Injury and Property Damage coverage for the Contractor as the owner or lessee of automobiles, trucks, trailers, self-propelled Contractor's equipment, and all other owned and non-owned vehicles registered for use on the public highway and/or used in operations relating to the Contractor's Work, with a minimum Combined Single Limit of $1,000,000. If any such vehicles are to be used to transport hazardous materials, the Contractor shall also provide pollution liability broadened coverage evidenced by ISO Form CA 99 48.

.3 Excess Liability and/or Umbrella Liability. Minimum limits are:

$5,000,000 each Occurrence and $5,000,000 for general construction and no work at elevation (1 story – 10 feet) or Project values less than or equal to $1,000,000.

$10,000,000 each Occurrence and $10,000,000 Aggregate for high risk construction, work at elevation (>1 story or 10 feet) or Project values greater than $1,000,000.

Umbrella/Excess coverage shall be on a follow-form basis.

.4 Workers' Compensation

.1 Workers' Compensation Requirements. To comply with the New York State Workers' Compensation Law, the Contractor must (1) be legally exempt from obtaining workers' compensation insurance coverage, or (2) obtain such coverage from insurance carriers, or (3) be self-insured or participate in an authorized group self-insurance plan. Minimum limitations are:

Bodily Injury by Accident: $500,000 Each Accident
Bodily Injury by Disease: $500,000 Each Employee
Bodily Injury by Disease: $500,000 Policy Limit

.2 Workers' Compensation Coverage Evidence. To demonstrate compliance with the New York State Workers' Compensation Law, the Contractor must provide **one** of the following forms to the Owner:

.1 **Either** CE-200, "Affidavit For New York Entities And Any Out Of State Entities With No Employees, That New York State Workers' Compensation And/Or Disability Benefits Insurance Coverage Is Not Required"; **or** CE-200, "Affidavit That An Out-Of-State Or Foreign Employer Working In New York State Does Not Require Specific New York State Workers' Compensation And/Or Disability Benefits Insurance Coverage" (either affidavit must be stamped as received by the New York State Workers' Compensation Board); **or**

.2 **Either** C-105-2, "Certificate of NYS Workers' Compensation Insurance Coverage" (for employers insured for workers' compensation through a private insurance carrier – the Contractor's insurance

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carrier must send this form to the Owner),**or** U-26.3, "New York State Insurance Fund Certificate of Workers' Compensation Coverage" (for employers insured for workers' compensation through the State Insurance Fund); **or**

.3 **Either** SI-12, "Certificate of Workers' Compensation Self-Insurance," **or** GSI-105-2, "Certificate of Participation in Workers' Compensation Group Self-Insurance (for employers participating in group self-insurance for workers' compensation – the Contractor's Group Self-Insurance Administrator must send this form to the Owner).

.5 **Employer's Liability/Disability**

.1 **Disability Benefits Requirements.** To comply with the New York State Disability Benefits Law, the Contractor must (1) be legally exempt from obtaining disability benefits insurance coverage, (2) obtain such coverage from insurance carriers, or (3) be self-insured.

.2 **Disability Benefits Coverage Evidence.** To demonstrate compliance with the New York State Disability Benefits Law, the Contractor must provide **one** of the following forms to the Owner:

.1 **Either** CE-200, "Affidavit For New York Entities And Any Out Of State Entities With No Employees, That New York State Workers' Compensation And/Or Disability Benefits Insurance Coverage Is Not Required" **or** CE-200, "Affidavit That An Out-Of-State Or Foreign Employer Working In New York State Does Not Require Specific New York State Workers' Compensation And/Or Disability Benefits Insurance Coverage" (either affidavit must be stamped as received by the New York State Workers' Compensation Board); **or**

.2 **Either** DB-120.1, "Certificate of Disability Benefits," **or** DB-820/829, "Certificate/Cancellation of Insurance" (the Contractor's insurance carrier must send either form to the Owner); **or**

.3 DB-155 (3/04), "Certificate of Disability Benefits Self-Insurance."

.6 **Hazardous Materials.** If the Contractor's Work involves handling or disturbance of asbestos or other hazardous materials, the Contractor shall provide bodily injury and property damage liability insurance applicable to such operations, covering both ongoing operations and products & completed operations. Products and Completed Operations coverage must be maintained in force for a minimum of two (2) years following Final Completion of the Project. Coverage must be for limits not less than:

.1 If covered by the Contractor's umbrella/excess liability policy:

$2,000,000 General Aggregate
$2,000,000 Each Occurrence or Incident:

.2 If not covered by the Contractor's umbrella/excess liability policy:

$6,000,000 General Aggregate
$6,000,000 Each Occurrence or Incident:

.7 **Owner's Protective Liability Policy.** The XCU exclusion must be deleted, and the Named Insureds will be "Nanuet Union Free School District." Minimum limits are:

$2,000,000 Each Occurrence
$4,000,000 Aggregate

§ 11.1.3 Certificates of insurance acceptable to the Owner, together with copies of all insurance policies procured by the Contractor pursuant to this Article 11, including, without limitation, terms, conditions, declarations, riders, and endorsements, must be submitted to the Construction Manager for transmittal to the Owner, with copies to the Architect, prior to commencement of the Work. If any of the foregoing insurance coverages are required to remain in force after final payment, an additional certificate evidencing continuation of such coverage must be submitted with the final Application for Payment as required by Section 9.10.2.2. Information concerning reduction of coverage must be furnished by the Contractor with reasonable promptness. In addition to the Certificates of Insurance and accompanying documents, the Contractor shall provide to the Certificate Holders, on a timely basis, copies of any subsequently issued endorsements that amend any coverages or limits. In addition:

.1 "Certificate Holders" are the Nanuet Union Free School District, 101 Church Street, Nanuet, NY,10954

.2 Coverages reflected in certificates of insurance and underlying policies must comply with all requirements of this Article 11.

.3 All insurance documents must be executed with *authorized* signatures.

.4 All required liability policies must be endorsed to provide that any Notice of Cancellation or Notice of Non-Renewal given to the First Named Insured must also be given to the Additional Insureds identified in Section 11.1.4. **Copies of such endorsements must be furnished to the Certificate Holders.**

.5 Failure of the Owner to object to the Contractor's failure to furnish a certificate or other evidence of required insurance coverages, or to object to any defect in such certificate or other evidence, or to demand receipt of such certificate or other evidence, is not a waiver of the Contractor's obligation to furnish the required

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insurance coverages. Furthermore, nothing contained in this Article 11 imposes on the Owner a duty or obligation to review any certificates or other evidence of insurance coverages or to issue any formal approval or acceptance of such evidence, the duty and obligation of the Contractor being to provide insurance meeting the requirements of this Article 11 regardless of any review or lack of review by the Owner of the Contractor's evidence of insurance.

.6 The Contractor's liability to and indemnification of the Owner is not relieved or diminished by the Contractor securing insurance coverage in accordance with this Article 11. Any acknowledgement of receipt of, or lack of objection by the Owner to, the Contractor's evidence of required insurance coverage is not acceptance in any way of any deficiencies in the Contractor's insurance coverage.

§ 11.1.4 Additional Insureds

§ 11.1.4.1 Policies of insurance required under Sections 11.1.2.1 (Commercial General Liability), 11.1.2.2 (Automobile Liability), 11.1.2.3 (Excess Liability and/or Umbrella Liability), and 11.1.2.6 (Hazardous Materials – if applicable) must also apply to the following as Additional Insureds on a primary and non-contributory basis, with the following designation, unaltered:

Nanuet Union Free School District and their respective employees, interim administrators, authorized volunteers, committee members, student teachers, auxiliary instructors, members of the Board of Education, and consultants (the "District Indemnitees"); KSQ Architects, PC and its consultants ("Designers"), and Jacobs ("Construction Manager"), during both ongoing and complete operations. The additional insured coverage provided shall not preclude coverage in favor of the any District Indemnitees, Designers, or Construction Manager, based on its lack of privity with Contractor or other third party additional insured. Further, such coverage shall not exclude or deny coverage to District Indemnitees, Designers, or the Construction Manager on the basis that the named insured Contractor's Work or operations are not performed directly for the District Indemnitees, Designers, or Construction Manager or other third party additional insured.

§ 11.1.4.2 Coverage Evidence. Additional Insured coverage must be effected through the use of **either** ISO Form CG 20 10 11 85 **or** Forms CG 20 10 04 13 **and** CG 20 37 04 13 **together**. Form CG 20 10 04 13 alone is not acceptable. Certificates of Insurance must clearly state how coverage is effected in the Excess/Umbrella Liability layer. Certificates of Insurance must show the form numbers used to effect all of the Additional Insured coverages. A copy of the actual policy language or endorsement that effects this coverage in each policy must be provided to the Owner and Construction Manager with the Certificate of Insurance. In the event Contractor is unable to procure such coverage specifically naming the "District Indemnitees," "Designers," "Construction Manager," or any other third party as an additional insured as required above, Contractor shall notify the Owner and Construction Manager prior to commencing Work and shall not proceed with any Work until authorized by the Owner to do so.

§ 11.1.4.3 No Reliance on "Following Form." The Contractor acknowledges that "Following Form" wording generally does not meet the primary and non-contributory coverage requirement for Additional Insureds, and that the coverage primacy aspect of Additional Insured coverage is typically addressed in the "Other Insurance" provisions of a policy's "Conditions" section, and often requires an amending endorsement to effect coverage on a primary and non-contributory basis. The Contractor therefore must provide such endorsements to the Owner, or other documentation acceptable to the Owner evidencing that the primary and non-contributory coverage requirements are met as to all policies for which they are required under Section 11.4.1.1.

§ 11.1.5 Normal Expiration/Renewal. When any required insurance is to expire due to a normal expiration or renewal date, the Contractor shall supply the Owner, at least ten (10) days prior to either such date, in addition to Certificates of Insurance, with either (1) copies of all renewed insurance policies, including, without limitation, terms, conditions, declarations, riders, and endorsements evidencing continuation of all coverages in the same manner, limits of protection, and scopes of coverage as was provided by the previous policy, or (2) if acceptable to the Owner, all declaration pages, mandatory riders, and/or endorsements that clearly evidence the continuation of all coverages in the same manner, limits of protection, and scope of coverage as provided by the previous policy.

§ 11.1.6 Subcontractors. The Contractor shall cause each Subcontractor to (1) procure insurance during the life of its Subcontract or Sub-subcontract the same insurances as are required of the Contractor as per this Article 11, and (2) cause the issuers of those insurance policies to name the Additional Insureds as Additional Insureds under each Subcontractor's comprehensive general, automobile, excess/umbrella, and hazardous materials liability policies. The

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Additional Insured endorsement included in each such Subcontractor's policies must state that coverage is afforded to all Additional Insureds with respect to any and all claims arising out of operations performed by or on behalf of the Contractor. If the Additional Insureds have other insurance otherwise applicable to a loss, such other insurance will only apply, if at all, on an excess or contingent basis. The amount of each Subcontractor's insurers' liability under each such insurance policy will not be reduced by the existence of such other insurance.

§ 11.1.7 Owner Insurer Loss Payments. In the event the Owner's insurer(s) make(s) any payment toward any loss covered under any policy of insurance the Contractor is required to procure under this Article 11, the Owner's insurer(s) are subrogated to all of the Contractor's rights of recovery against any person or organization including, but not limited to, the Contractor's insurer(s), and the Contractor shall execute and deliver all instruments, papers, and whatever else is necessary to secure those rights. The Contractor shall do nothing after the payment of any damages to prejudice those rights.

§ 11.2 Owner's Liability Insurance

The Owner shall purchase and maintain the Owner's usual liability insurance. The Owner may also, at its sole option, purchase and maintain other insurance for protection against claims that may arise from operations under the Contract Documents. The Contractor is not responsible for purchasing and maintaining such optional Owner's liability insurance unless specifically required in the Contract Documents. Neither the Owner's usual liability insurance nor any other insurance obtained by the Owner reduces or otherwise affects the Contractor's insurance requirements under Section 11.1.

(Paragraphs deleted)

§ 11.3 Property Insurance

§ 11.3.1 Unless otherwise provided, the Owner shall purchase and maintain, in a company or companies lawfully authorized to do business in the State of New York, property insurance on a replacement cost basis. Such property insurance will be maintained, unless otherwise provided in the Contract Documents or otherwise agreed in writing by all persons and entities who are beneficiaries of such insurance, until final payment is made as provided in Section 9.10 or until no person or entity other than the Owner has an insurable interest in the property required by this Section 11.3 to be covered, whichever is later. This insurance will include interests of the Owner, Contractor, Subcontractors, and Sub-subcontractors in the Project.

§ 11.3.1.1 Property insurance will be on a builder's risk, "all-risk," or equivalent policy form and include, without limitation, insurance against the perils of fire (with extended coverage) and physical loss or damage including, without duplication of coverage, theft, vandalism, malicious mischief, collapse, earthquake, flood, windstorm, falsework, testing and startup, temporary buildings, and debris removal including demolition occasioned by enforcement of any applicable legal requirements, and will cover reasonable compensation for the Architect's, Contractor's, and Construction Manager's services and expenses required as a result of such insured loss. Coverage for other perils is not required unless otherwise provided in the Contract Documents. The form of policy for this coverage shall be Completed Value.

§ 11.3.1.1.1 Contractor is responsible for all tools, equipment, materials, Work, etc., until Substantial Completion and possession by Owner. The 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 of New York.

§ 11.3.1.2 The Contractor shall provide insurance coverage for portions of the Work stored off the site, in transit and stored on the site but not incorporated into the Work as full replacement cost basis without voluntary deductible. The Contractor shall provide Certificate copies to the Construction Manager showing the coverage for their materials in transit or stored off site.

§ 11.3.1.3 If the property insurance requires deductibles, the Owner shall pay costs not covered because of such deductibles.

§ 11.3.1.4 The property insurance will cover portions of the Work stored off the site, and also portions of the Work in transit. The insurance required by this Section 11.3 will not, however, cover machinery, tools, equipment, vehicles, shanties, tool houses, trailers, or other temporary or permanent structures owned or rented by the Contractor, a Subcontractor, or a Sub-subcontractor, or their employees, utilized in performance of the Work but not incorporated

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into the permanent improvements. The Contractor is solely responsible for all such items of its own and any under its control. The Contractor shall, at the Contractor's own expense, provide insurance coverage for all of the items described in this Section 11.3.1.4, which is subject to the provisions of Section 11.3.7.

§ 11.3.1.5 Partial occupancy or use in accordance with Section 9.9 may not commence until the insurance company or companies providing property insurance consent to such partial occupancy or use by endorsement or otherwise. The Owner and the Contractor shall take reasonable steps to obtain consent of the insurance company or companies and shall, without mutual written consent, take no action with respect to partial occupancy or use that would cause cancellation, lapse, or reduction of insurance.

§ 11.3.1.6 The Owner shall not be responsible to or for the Contractor or Subcontractor against any loss by fire, lightning, extended coverage, all risk, theft or vandalism and malicious mischief, or any tools, equipment, vehicles, shanties, tool houses, trailers or other temporary or permanent structures wherever located and owned by the Contractor, Subcontractors, their employees or agents.

§ 11.3.1.7 The form of policy for the coverage required by 11.3.1 shall be Completed Value.

§ 11.3.2 Boiler and Machinery Insurance. The Owner, if applicable to the Work and at its sole option, may purchase and maintain boiler and machinery insurance or shall do so if required by law, which shall specifically cover such insured objects during installation and until final acceptance by the Owner. This insurance will include interests of the Owner, Construction Manager, Contractor, Subcontractors and Sub-subcontractors in the Work.

§ 11.3.3 Intentionally omitted.

§ 11.3.4 If the Contractor requests in writing that insurance for risks other than those described in this Section 11.3 or other special causes of loss be included in the property insurance policy, the Owner shall, if possible, include such insurance, and the cost for it will be charged to the Contractor by appropriate Change Order.

§ 11.3.5 Intentionally omitted.

§ 11.3.6 Upon the Contractor's request, the Owner will provide copies of each policy that includes insurance coverages required by this Section 11.3. Each policy shall contain all generally applicable conditions, definitions, exclusions and endorsements related to this Project.

§ 11.3.7 Waivers of Subrogation. The Owner and Contractor waive all rights against (1) each other and any of their respective subcontractors, sub-subcontractors, agents and employees, and (2) the Construction Manager, Construction Manager's consultants, Architect, Architect's consultants, separate contractors described in Article 6, if any, and any of their respective subcontractors, sub-subcontractors, agents, and employees, for damages caused by fire or other causes of loss to the extent of proceeds under property insurance obtained pursuant to this Section 11.3 or other property insurance applicable to the Work, except such rights as the Owner and Contractor may have to the proceeds of such insurance held by the Owner. The Owner or Contractor, as appropriate, shall require of the Construction Manager, Construction Manager's consultants, Architect, Architect's consultants, Owner's separate contractors described in Article 6, if any, and any of their respective subcontractors, sub-subcontractors, agents, and employees, by appropriate written agreements, similar waivers each in favor of other parties enumerated in this Section 11.3.7. The policies must provide such waivers of subrogation by endorsement or otherwise. A waiver of subrogation is effective as to a person or entity even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, did not pay the insurance premium directly or indirectly, and whether or not the person or entity has an insurable interest in the property damaged.

§ 11.3.8 A loss insured under the Owner's property insurance will be adjusted by the Owner and made payable to the Owner for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.3.10. The Contractor shall pay Subcontractors their just shares of insurance proceeds received by the Contractor, and by appropriate written agreements shall require Subcontractors to make payments to their Sub-subcontractors in similar manner.

§ 11.3.9 If required in writing by a party in interest, the Owner shall, upon occurrence of an insured loss, give a bond for proper performance of the Owner's duties. The cost of the bond will be charged against proceeds received. The

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Owner shall deposit in a separate account proceeds so received, which the Owner shall distribute in accordance with such agreement as the parties in interest may reach, or as determined in accordance with the method of binding dispute resolution selected in the Agreement. If after such loss no other special agreement is made, and unless the Owner terminates the Contract for convenience, replacement of damaged property will be performed by the Contractor after notification of a Change in the Work in accordance with Article 7.

§ 11.3.10 The Owner will adjust and settle a loss with insurers unless one of the parties in interest objects in writing within five days after occurrence of loss to the Owner's exercise of this power; if such objection is made, the dispute will be resolved in the manner selected as the method of binding dispute resolution in the Agreement. Nothing in this Agreement calls for the name of any party other than the Owner as loss payee on the Owner's insurance and no draft or other instrument in payment of any loss will name any other party as a joint payee.

§ 11.3.11 The Contractor's Insurance Company shall acknowledge in writing to the Construction Manager that they have read and will comply with all requirements under Indemnification Section 3.18 of the General Conditions.

§ 11.4
(Paragraphs deleted)
Performance Bond and Payment Bond
(Paragraphs deleted)
§ 11.4.1 The Contractor shall furnish bonds covering faithful performance of the Contract and payment of obligations arising under it. Bonds must be obtained from a surety company or companies satisfactory to the Owner, licensed to do business in the State of New York, and listed in the latest issue of U.S. Treasury Circular 570. The amount of each bond will be equal to one hundred (100) percent of the Contract Sum. Each bond must be maintained throughout the duration of the Project, and subsequently to the extent the Contractor has ongoing performance and payment obligations following completion of the Project.

§ 11.4.1.1 No Performance or Payment Bond shall require, as a condition precedent to termination of a Contract or Contractor, that any notice be sent to or meeting be arranged or held with a Contractor (Principal) and/or surety, prior to such termination. Any such requirement(s) shall be void and unenforceable and the Owner shall have the right to reject any such bond(s) and/or ignore such condition. The exclusive method of termination of a Contract or Contractor is contained in the Contract Documents and a Contractor and surety expressly agreed to be bound thereby.

§ 11.4.1.2 Rider including the following provisions shall be attached to each Performance Bond: "Surety agrees that it consents to and waives notice of any addition, alteration, omission, change or other modification of the Contract Documents. Such addition, alteration, change extension of time or other modification of the Contract Documents or a forbearance on the part of either the Owner or the Contractor to the other, shall not relieve the surety of its obligations hereunder and notice to the surety of such matters is hereby waived"

§ 11.4.2 Bonds must be prepared on the forms of AIA Documents A312-2010 - Performance Bond and A312-2010 - Payment Bond, without modifications other than (1) a mandatory statement in Section 16 of the Performance Bond that it is given as a statutory or other legally required bond and that Section 13 of the Performance Bond applies in full, without exception, (2) a mandatory statement in Section 16 of the Performance Bond that it includes performance by the Contractor of any correction and warranty obligations in the Contract Documents, including such performance after the dates of Substantial and Final Completion, and (3) a mandatory statement in Section 18 of the Payment Bond that it is given as a statutory or other legally required bond and that Section 14 of the Payment Bond applies in full, without exception. The cost of the bonds is included in and will not increase the Contract Sum.

- **.1** The Contractor shall deliver the required bonds to the Owner not later than 7 days following the date the Agreement is entered into and before commencing any of the Work.
- **.2** The Contractor shall require any attorney-in-fact who executes the required bonds on behalf of the surety to affix to the bonds a certified and current copy of their power of attorney authorizing him or her to sign the bond.
- **.3** The bonds must specifically name the Nanuet Union Free School District as Obligee.

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§ 11.4.3 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.

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 Uncovering of Work

§ 12.1.1 If a portion of the Work is covered contrary to the Construction Manager's or Architect's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by either, be uncovered for their examination and be replaced at the Contractor's expense without change in the Contract Time.

§ 12.1.2 If a portion of the Work has been covered which the Construction Manager or Architect has not specifically requested to observe prior to its being covered, the Construction Manager or Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, costs of uncovering and replacement shall, by appropriate Change Order, be at the Owner's expense. If such Work is not in accordance with the Contract Documents, such costs and the cost of correction shall be at the Contractor's expense unless the condition was caused by the Owner or one of the other Contractors in which event the Owner shall be responsible for payment of such costs.

§ 12.2 Correction of Work

§ 12.2.1 Before or After Substantial Completion

The Owner, through its Architect or Construction Manager, shall have the authority to reject Work performed by the Contractor that does not conform to the requirements of the Drawings, Specifications, or both. The Contractor shall promptly correct Work rejected by the Construction Manager or Architect or failing to conform to the requirements of the Contract Documents, whether discovered before or after Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Construction Manager's and Architect's services and expenses made necessary thereby, shall be at the Contractor's expense.

§ 12.2.2 After Substantial Completion

§ 12.2.2.1 If, within two years after the date of Substantial Completion of the Work or a designated portion of the Work, or the date of acceptance of a portion of the Work that is subject to correction or completion after the date of Substantial Completion of the Work, whichever is later, 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 obligation set forth hereunder shall survive acceptance by the Owner of the Work or termination of the Contract. The Owner shall give such notice promptly after discovery of the condition.

§ 12.2.2.2 The two-year period for correction of the 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 Upon completion of any Work under or pursuant to this Section 12.2, the two-year period for correction of Work in connection with the Work requiring correction shall be renewed and recommence.

§ 12.2.2.4 The obligations shall cover any repair and replacement to any part of the Work or other property caused by the defective Work.

§ 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.

§ 12.2.3.1 If the Contractor fails to commence to correct, repair and make good any defects in its Work within a reasonable time, not to exceed ten (10) days from the date the Contractor received written notice from the Owner per Section 12.2.2.1, the Owner may correct it in accordance with Section 2.5 and the Contractor shall, upon demand, pay to the Owner all amounts which it expends for such corrective work.

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§ 12.2.4 The Contractor shall bear the cost of correcting destroyed or damaged construction of the Owner, Multiple Prime Contractors 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. The Contractor shall also replace or repair to satisfaction of Owner any and all damage done to the building or its contents in consequence of work performed in fulfilling any applicable warranty. This clause is general in nature and will not operate to waive stipulations of other clauses that specify warranty periods in excess of two (2) years.

§ 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 two-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 determined by the Owner, with the advice of the Construction Manager and Architect. Such adjustment shall be effected whether or not final payment has been made. For this Section to apply, the Owner must accept non-conforming Work in writing specifying the non-conforming Work being accepted. Notwithstanding any acceptance by the Owner, if the Owner discovers non-conforming Work that the Owner has not expressly accepted in writing, the Owner may demand that the Contractor correct such Work as per the provisions of Article 12 hereof.

ARTICLE 13 MISCELLANEOUS PROVISIONS

§ 13.1 Governing Law

The Contract shall be governed by the law of the State of New York, and the parties expressly agree that any claim, dispute, or other controversy of any nature arising out of the Contract or performance of the Work shall be commenced and maintained in New York State Supreme Court, Rockland County.

§ 13.1.2 The Contractor shall at all times observe and comply with all federal, state and local laws and all laws, ordinances and regulations of the Owner, in any manner affecting the Work and all such orders decreed as exist at present and those which may be enacted later, by bodies or tribunals having jurisdiction or authority over the Work, and the Contractor shall defend, indemnify and save harmless the Owner and its Board of Education, officers, agents, or servants against any claim or liability arising from, or based on, a violation of any such law, ordinances, regulation, order or decree, whether by himself or by his employee or agents. Historical lack of enforcement of any law, local or otherwise, shall not constitute a waiver of Contractor's responsibility for compliance with such law in a manner consistent with the Agreement unless and until the Contractor has received written consent for the waiver of such compliance from the Owner and the agency responsible for the enforcement of such law.

§ 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 Neither the acceptance of all or any part of the work covered by the Contract; nor any payment therefore; nor any order or application for payment issued under the Contract or otherwise issued by the Owner, Architect,

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Construction Manager, or any board member, officer, agent or employee of the Owner; nor any permission or direction to continue with the performance of the Contract before or after its specified completion date; nor any performance by the Owner of any of the Contractor's duties or obligations; nor any aid lent to the Contractor by the Owner in its performance of such duties or obligations; nor any delay or omission by the Owner to exercise any right or remedy accruing to it under the terms of the Contract or existing at law or in equity or by statute or otherwise; nor any other thing done or omitted to be done by the Owner, its commissioners, officers, agents or employees; shall be deemed to be a release to the Contractor or its sureties from any obligations, liabilities or undertakings in connection with the Contract or the performance bond or a waiver of any provision of the Contract or of any rights or remedies to which the Owner may be entitled because of any breach thereof, excepting only a written instrument expressly providing for such release or waiver. No cancellation, rescission or annulment hereof, in whole or as to any part of the Contract, because of any breach hereof, shall be deemed a waiver of any money damages to which the Owner may be entitled because of such breach. No waiver by the Owner of any breach of the Contract shall be deemed to be a waiver of any other or any subsequent breach.

§ 13.3.3 The rights stated in these General Conditions and the Contract Documents are cumulative and not in limitation of any rights of the Owner at law or in equity.

§ 13.3.4 The Owner shall not be responsible for damages or for loss of anticipated profits on Work not performed on account of any termination of the Contractor by the Owner or by virtue of the Owner's exercise of its right to take over the Contractor's Work.

§ 13.3.5 The Owner shall not be liable to the Contractor for punitive damages on account of its termination of the Contractor or any other alleged breach of the Agreement and the Contractor hereby expressly waives its right to claim such damages against the Owner.

§ 13.3.6 The Contractor hereby expressly waives any rights it may have in law or in equity to lost bonding capacity as a result of any of the actions of the Owner, the Architect or the Construction Manager taken in connection with the Contractor's Work on the Project.

§ 13.3.7 The Contractor agrees that it waives the defense of privity of contract as between itself and each other Prime Contractor. In the event that an act or omission by a Prime Contractor or its Subcontractors of any tier causes impact, damage or loss in any form to the Contractor, then the Prime Contractor responsible in whole or in part for such impact, damage or loss agrees it is directly responsible and liable to the Contractor. The Contractor acknowledges and agrees that this waiver of the defense or privity of contract permits and requires it to commence an action or suit directly against the responsible Prime Contractor. The Owner, Architect and the Construction Manager shall not be parties to such suit. The Contractor waives and relinquishes any right and claim as against the Owner, to the extent such claim is caused, or contributed to, by a Prime Contractor or its Subcontractors of any tier.

§ 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. Tests, inspections and approvals of portions of the Contractor's Work required by the Drawings or Specifications shall be made at an appropriate time. Unless otherwise provided, the Contractor shall arrange for such tests, inspections and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections and approvals. The Contractor shall give the Construction Manager and Architect timely notice of when and where tests and inspections are to be made so that the Construction Manager and Architect may be present for such procedures. The Owner shall bear costs of (1) tests, inspections or approvals that do not become requirements until after bids are received or negotiations concluded, and (2) tests, inspections or approvals where building codes or applicable laws or regulations prohibit the Owner from delegating their cost to the Contractor.

§ 13.4.2 If the Construction Manager, Architect, Owner or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection or approval not included under Section 13.4.1, the Construction Manager or Architect shall, upon written authorization from the Owner, instruct the Contractor to arrange for such additional testing, inspection or approval by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Construction Manager and Architect of when and where tests and inspections are to be

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made so that the Construction Manager and Architect may be present for such procedures. Such costs, except as provided in Section 13.4.3, shall be at the Owner's expense.

§ 13.4.3 If such procedures for testing, inspection or approval under Sections 13.4.1 and 13.4.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure including those of repeated procedures and compensation for the Construction Manager's and Architect's services and expenses shall be at the Contractor's expense, including the cost of retesting for verification of compliance if necessary until the Architect certifies that the Work in question does comply with the requirements of the Contract Documents, and none of such costs shall be included in computing the Contract Sum.

§ 13.4.4 Required certificates of testing, inspection or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Construction Manager for transmittal to the Architect.

§ 13.4.5 If the Construction Manager or Architect is to observe tests, inspections, or approvals required by the Contract Documents, the Construction Manager or Architect will do so promptly and, where practicable, at the normal place of testing.

§ 13.4.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

§ 13.4.7 Any material to be furnished shall be subject to inspections and tests in the shop and field by the Architect. Shop inspection shall not relieve the Contractor of the responsibility to furnish satisfactory materials and the right is reserved to reject any material at any time before final acceptance of the Work, when in the opinion of the Architect the materials and/or workmanship do not conform to the Specification requirements.

§ 13.5 Interest

Payments due and unpaid under the Contract Documents shall bear interest from the date payment is due at the legal rate as required in General Municipal Law Section 106-b.

§ 13.6 Time Limits on Claims

§ 13.6.1 No action or proceeding shall lie or be maintained by the Contractor, nor anyone claiming under or through the Contractor, against the Owner upon any claim arising out of or based on the Agreement or the Contract Documents or by reason of any act or omission or requirements relating to the giving of notices and information, unless such action or proceeding shall be commenced within one (1) year after submission to the Owner of the final Application for Payment. As to a claim based upon money required to be retained for any period after the date of the final Application for Payment, such action must be commenced within six (6) months after such money becomes due and payable under the terms of the Contract. Notwithstanding, if the Contract is terminated by the Owner, such action by the Contractor must be commenced within six (6) months after the date of such termination. The Contractor's acceptance of final payment shall constitute a release of all claims against the Owner. This provision shall not relieve the Contractor of the obligation to comply with the provisions of the law relating to notices of claim.

§ 13.6.2 Acts or failures to act occurring during the construction of the Project or following the issuance of the final certificate for payment, which give rise to a cause of action shall be deemed to have accrued in any and all events not later than the date of any act or failure to act by the Contractor pursuant to any warranty provided under Section 3.5, the date of any correction of the Work or failure to correct the Work by the Contractor under Section 12.2, or the date of actual commission of any other act or failure to perform any duty or obligation by the Contractor, whichever occurs last.

§ 13.7 No Oral Waiver or Constructive Changes

The provisions of the Contract Documents shall not be changed, amended, waived, or otherwise modified in any respect except by a writing signed by the Owner. No person is authorized on behalf of the Owner to orally change, amend, waive, or otherwise modify the terms of the Contract Documents or any of the Contractor's duties or obligations under or arising out of the Contract Documents. Any change, waiver, approval, or consent granted to the Contractor shall be limited to the specific matters stated in the writing signed by the Owner, and shall not relieve the Contractor of any other of the duties and obligations under the Contract Documents. No "constructive" changes shall be allowed.

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§ 13.8 Notices Regarding Liens
The Contractor shall provide to the Owner copies of all notices of any type regarding liens received from Subcontractors, Sub-subcontractors, or suppliers to the Contractor.

§ 13.9 Wages Rates
The Contractor shall, and cause its Subcontractors to, comply with prevailing wage rate determinations as issued by the State of New York Department of Labor for the location and duration of this Project. Current wage rates for this Project are included in the Project Manual.

§ 13.10 General Provisions
Any specific requirement in this Contract that the responsibilities or obligations of the Contractor also apply to a Subcontractor is added for emphasis and is also hereby deemed to include a Subcontractor of any tier. The omission of a reference to a Subcontractor in connection with any of the Contractor's responsibilities or obligations shall not be construed to diminish, abrogate or limit any responsibilities or obligations of a Subcontractor of any tier under the Contract Documents or the applicable subcontract.

§ 13.11 Written Notice
All notices to be given hereunder shall be in writing and may be given, served, or made by (1) depositing the same in the United States mail addressed to the authorized representative (as specified below) of the party to be notified, postpaid and registered or certified, read receipt requested or (2) depositing the same for overnight delivery (prepaid by and billed to the party giving notice) with a nationally recognized overnight delivery service addressed to the authorized representative of the party being notified or (3) delivering the same in person to the authorized representative of the party being notified or (4) emails to the attention of the authorized representative of the party to be notified with the requirement of a email confirmation notices deposited in the United States mail shall be effective, unless otherwise state in the Contract Documents, from and after the fourth day next following the date deposited in a United States mail receptacle or when actually received, whichever is earlier. Notices transmitted by overnight delivery shall be effective immediately. Email notices shall be effective as of the time received, as shown on a printed email confirmation.

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 90 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; or

.2 An act of government, such as a declaration of national emergency, that requires all Work to be stopped; or

.3 Because the Construction Manager has not certified or the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4 and 9.5, or because the Owner has not made payment after 14 days written notice of such failure to make payment provided that such failure is not due to a disputed amount, and except to the extent the Owner is excused from timely making all or part of any payment on a Certificate for Payment as per any other provisions of the Contract Documents.

Notwithstanding the preceding or anything else in the Contract Documents, the Contractor shall not cease or delay the progress of the Work for any reason other than one set forth in Section 9.7.1, it being agreed that monetary damages shall be an adequate remedy for the Contractor for any breach of this Agreement or the Contract Documents by the Owner.

§ 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.

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§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon 30 days' written notice and opportunity to cure to the Owner, terminate the Contract and recover from the Owner payment for such Work properly performed for which it has not otherwise been compensated, but in no event shall the Owner by liable to the Contractor for any prospective loss, including, but not limited to, termination expenses, loss of anticipated profits, impact damages, unabsorbed overhead, or the like. Notwithstanding the foregoing, any such payments to the Contractor shall be less any setoffs to which the Owner may be entitled as per any other provision of the Contract Documents.

§ 14.1.4 If the Work is stopped for a period of 90 consecutive days through no act or fault of the Contractor or a Subcontractor or their agents or employees or any other persons performing portions of the Work under contract with the Contractor 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 30 additional days' written notice to the Owner, Construction Manager and Architect (during which the Owner shall have the right and opportunity to cure), terminate the Contract and recover from the Owner as provided in Section 14.1.3.

§ 14.2 Termination by the Owner for Cause

§ 14.2.1 The Owner may terminate the Contract if the Contractor

- **.1** refuses or fails to supply enough properly skilled workers or proper materials or equipment to complete the Work in a diligent, efficient, timely, workmanlike, skillful, and careful manner;
- **.2** fails to make payment to Subcontractors or Suppliers for materials or labor in accordance with the respective agreements between the Contractor and its Subcontractors or Suppliers;
- **.3** disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority, or its health and safety plan;
- **.4** otherwise is guilty of substantial breach of or default under a provision of the Contract Documents;
- **.5** cannot complete the Work within the Contract Time or within the time to which such completion may have been extended; provided, however, that the impossibility of timely completion is, in the Owner's opinion, attributable to conditions within the Contractor's control;
- **.6** breaches any warranty made by the Contractor under or pursuant to the Contract Documents;
- **.7** is or has been unnecessarily or unreasonably or willfully delaying the performance and completion of the Work, or the award of necessary subcontracts, or the placing of necessary material and equipment orders;
- **.8** fails to furnish the Owner with assurances satisfactory to the Owner evidencing the Contractor's ability to complete the Work in compliance with all requirements of the Contract Documents;
- **.9** refuses to proceed with the Work or extra work when and as directed by the Owner, Construction Manager or Architect;
- **.10** fails after commencement of the Work to proceed continuously with the construction and completion of the Work for more than 10 days, except as permitted under the Contract Documents;
- **.11** fails or neglects to complete the Work within the Contract Time or in accordance with the Construction Schedule;
- **.12** refuses or fails to correct deficient Work performed by it;
- **.13** the Contractor's progress of the Work is such that the Owner reasonably believes that the Contractor shall not be able to achieve Substantial Completion by the Substantial Completion Date and the Contractor has not delivered and implemented a recovery plan required under the Contract or has not recovered the schedule sufficient to meet the respective Contract Time requirements as required by written notice to the Contractor by the Owner; or
- **.14** disregards the instructions of the Construction Manager, Architect or Owner (when such instructions are based on the requirements of the Contract Documents).

§ 14.2.2 When any of the above reasons exist, 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 (7) days' written notice, terminate employment of the Contractor at the expiration of such seven (7) day period, 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 utilizing for such purpose such of the Contractor's plant, materials, equipment, tools and supplies remaining on the site,

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and also such subcontractors as it may deem advisable, or if may call upon the Contractor's surety at its own expense to do so. 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. Such accounting shall be final, binding and conclusive upon the Contractor, its surety, and any person claiming under or through the Contractor, as to the amount thereof.

§ 14.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Construction Manager's and Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall, upon application, be certified by the Initial Decision Maker after consultation with the Construction Manager, and this obligation for payment shall survive termination of the Contract.

§ 14.2.4.1 The costs of finishing the Work also include, without limitation, all reasonable attorneys' fees incurred in responding to the default and enforcing the Owner's rights under the Contract Documents (including costs and fees incurred in dispute resolution proceedings), additional title costs, insurance, additional interest because of any delay in completing the Work, loss of State Building Aid, and all other direct and consequential damages incurred by the Owner by reason of the termination of the Contractor as stated herein.

§14.2.4.2 It is recognized that: (1) if an order for relief is entered on behalf of Contractor pursuant to Title 11 of the United States Code, (2) if any other similar order is entered under any other debtor relief laws, (3) if Contractor makes a general assignment for the benefit of its creditors, (4) if a receiver is appointed for the benefit of its creditors, or (5) if a receiver is appointed on account of its insolvency, any such event could impair or frustrate Contractor's performance of the Contract. Accordingly, it is agreed that upon the occurrence of any such event, Owner shall be entitled to request of Contractor or its successor in interest adequate assurance of future performance in accordance with the terms and conditions of the Contract. Failure to comply with such request within ten (10) days of delivery of the request, or Owner's determination that the assurances are not adequate, shall entitle Owner to terminate the Contract and to the accompanying rights set forth in Subparagraphs 14.2.1 through 14.2.4 hereof. In all events pending receipt of adequate assurance of performance and actual performance in accordance therewith, Owner shall be entitled to proceed with the Work with its own forces or with other Contractors on a time and material or other appropriate basis, the cost of which will be back charged against the Contract Sum.

§ 14.2.5 If the Owner wrongfully terminates the Contract for cause, the rights, remedies and obligations of the parties will be the same as if the Owner had terminated the Contract for convenience under Section 14.4.

§ 14.2.6 In the event that the Contractor, or the Contractor's surety, challenges the Owner's termination of the Contract for cause, and the Owner prevails in litigation in connection with such challenge, whether initiated by the Owner or by the Contractor or the Contractor's surety, the Owner shall be entitled to its costs, including reasonable attorney's fees, incurred as a result of such litigation, as part of any judgment against the Contractor or the Contractor's surety. Such costs, including reasonable attorney's fees, shall be deemed a cost of finishing the Work.

§ 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. The Owner shall incur no liability by reason of such suspension, delay, or interruption except that the Contractor may request an extension of its time to complete its Work in accordance with Article 8 hereof.

§ 14.3.2 The Contract Time shall be adjusted for increases in time caused by suspension, delay or interruption as described in Section 14.3.1. No adjustment shall be made to the extent:

.1 that performance is, was or would have been so suspended, delayed or interrupted by another cause for which the Contractor is responsible; or

.2 that an equitable adjustment is made or denied under another provision of this Contract.

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§ 14.4 Termination by the Owner for Convenience

§ 14.4.1 The Owner may, at any time, terminate the whole or any portion of the Contract for the Owner's convenience and without cause upon not less than seven (7) days' written notice to the Contractor. Notwithstanding any other provision to the contrary in the Contract, the Owner reserves the right at any time and in its absolute discretion to terminate the services of the Contractor or the Work by giving written notice to the Contractor. This termination for convenience of the Owner provision allows and authorizes the Owner to terminate this Contract at any time and for any reason whatsoever. This right may be exercised by the Owner in its complete discretion. Termination by the Owner under this Section shall be by Notice of Termination delivered to the Contractor specifying the extent of termination and the effective date.

§ 14.4.2 Upon receipt of written notice from the Owner of such termination for the Owner's convenience, the Contractor shall immediately and in accordance with instructions from the Owner:

.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;

.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; and

.4 proceed to complete the performance of the Work required under portions of the Contract not terminated, if any.

§ 14.4.3 Upon receipt of written notice of the Owner's exercise of such termination, the Contractor shall, as the Contractor's sole and exclusive remedy, be paid for the Work properly executed in accordance with the Contract Documents prior to the effective date of termination and for items properly fabricated off-site, delivered and stored in accordance with the Owner's instructions or the Contract Documents before such effective date. The Contractor's entitlement to payment for all such work shall be predicated on its performance of such work in accordance with the Contract Documents as certified by the Architect and Construction Manager. The Contractor shall be entitled to no other payment and waives any claim for damages including, but not limited to, lost profits, any prospective loss, underutilization of personnel or equipment, unabsorbed overhead, and any and all items of consequential loss or damage. The Owner shall be entitled to credit against any payment to be made to the Contractor pursuant to this Section 14.4 the following: (1) payments previously made to the Contractor for the terminated portion of the Work; (2) claims which the Owner has against the Contractor under the Contract Documents; and (3) the value of the materials, supplies, equipment, or other items that are to be disposed of by the Contractor, the cost of which is included in the Contract Sum. Notwithstanding the foregoing, in the event of a termination under Section 14.4.1 prior to the issuance of a Notice to Proceed, the Contractor shall not be entitled to any compensation whatsoever.

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 Claims

§ 15.1.1 Definition. A Claim is a demand or assertion by the Contractor seeking, as a matter of right, payment of money, 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. Neither a Request for Information, nor a Construction Change Directive, nor a Change Order, nor a reservation of rights, nor minutes of a meeting, nor a daily report, nor any log entry, nor an Owner's request for or the Contractor's response to a Change Order proposal, nor notice of a potential or future claim shall constitute a Claim.

§ 15.1.2 Time Limits on Claims

(Paragraph deleted)

§ 15.1.2.1 Claims by the Contractor must be initiated by written notice to the Owner and the Initial Decision Maker. Claims by the Contractor must be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the Contractor first recognizes the condition giving rise to the Claim, whichever is earlier.

§ 15.1.3 Notice of Claims

§ 15.1.3.1 Claims by the Contractor must be initiated by written notice to the Owner and to the Architect with a copy sent to the Construction Manager within the time limits set forth in Section 15.1.2.1 above. The purpose of the written notice is to give the Owner prompt opportunity: (a) to cancel or revise orders or directions, change plans, mitigate or remedy circumstances giving rise to the Claim or to take other action that may be desirable; (b) to monitor and verify the facts and circumstances as they occur; and (c) to verify any costs and expenses claimed by the Contractor contemporaneously as they are incurred. Written notice is required whether or not the Owner, Construction Manager

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or Architect is aware of the facts or circumstances that constitute the basis for the Contractor's Claim, and no action or conduct of the Owner, Construction Manager, Architect or any other person will be regarded as a waiver of such notice requirement except only a written statement to such effect signed by the Owner. Failure of the Contractor to give written notice as required by this Section shall be deemed conclusively to be a waiver and release of any Claim, and such written notice shall be a condition precedent to the Contractor's right to make any Claim arising out of, under or in connection with the Contract or its performance of the Work.

§ 15.1.3.2 Written notice shall contain a heading stating "Notice of Claim" to clearly identify it as such. Such notice shall set forth in detail the circumstances that form the basis for the Claim and shall include the following: (1) a clear statement of the claim, including background and chronology; (2) documentation in support of the claim; (3) documentation in support of claimed damages; and (4) certification by responsible officer of the Contractor. The responsibility to substantiate Claims shall rest with the Contractor. An additional Claim arising from the same occurrence or condition made after the Initial Claim has been implemented by Change Order shall not be considered.

§ 15.1.3.3 The Contractor agrees that it has and will make no claim for damages against the Owner by reason of any act or failure to act by any other Contractor, Separate Contractor or Subcontractors having contracts for performance of any portion of work of the Project or in connection with the Owner's, Architect's or Construction Manager's acts or omissions to act in connection with such other Contractors, Separate Contractors or Subcontractors.

§ 15.1.4 Continuing Contract Performance

§ 15.1.4.1 Pending final resolution of a Claim by the Contractor, except as otherwise agreed in writing or as provided in Section 9.7, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments of undisputed amounts in accordance with the Contract Documents; provided, however, that the Contractor shall use its best efforts to furnish the Architect and Owner, as expeditiously as possible, with notice of any Claim including, without limitation, those in connection with concealed or unknown conditions, once such Claim is recognized, and shall cooperate with the Architect and the Owner in any effort to mitigate the alleged or potential damages, delay or other adverse consequences arising out of the condition which is the cause of such a Claim. The Construction Manager will prepare Change Orders and the Architect will issue a Certificate for Payment or Project Certificate for Payment in accordance with the decisions of the Initial Decision Maker.

(Paragraph deleted)

§ 15.1.5 Claims for Additional Cost. If the Contractor wishes to make a Claim for an increase in the Contract Sum, written notice as provided herein shall be given before proceeding to execute the Work. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.3. The Contractor agrees that an express condition precedent to the Contractor's entitlement to any increase in the Contract Sum shall be full and complete compliance to the satisfaction of the Owner with the requirements of Article 15. The Contractor acknowledges the no damages for delay provisions set forth in Sections 8.3.2 and 15.1.6.1.4 hereof.

§ 15.1.5.1 The Contractor shall not be entitled to any adjustment in the Contract Sum or Contract Time if:

.1 The Contractor knew of the existence of such conditions at the time Contractor made a final commitment to Owner in respect of Contract Sum and Contract Times by the submission of a bid or becoming bound under a negotiated contract; or

.2 The existence of such condition could reasonably have been discovered or revealed as a result of any examination, investigation, exploration, test or study of the site and contiguous areas required by the Bidding Requirements or Contract Documents to be conducted by or for the Contractor prior to Contractor's making such final commitment;

.3 The Contractor failed to give the written notice within the time and as required by Section 15.1.2; or

.4 If the Owner and the Contractor are unable to agree on entitlement to or as to the amount or length of any such equitable adjustment in the Contract Sum or Contract Times, a claim may be made therefore as provided in Article 15. However, the Owner, Construction Manager, and Architect shall not be liable to the Contractor for any claims, costs, losses or damages sustained by the Contractor on or in connection with any other project or anticipated project.

§ 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 Sections 15.1.2 and 15.1.3 shall be given. The Contractor's Claim shall include an estimate of the probable effect of delay on progress of the Work. In the case of a continuing delay only one Claim is necessary.

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§ 15.1.6.1.1 An application for extension of time must set forth in detail the circumstances that form the basis for the Claim, the date upon which each cause of delay began to affect the progress of the Work, the date upon which each cause of delay ceased to affect the progress of the Work and the number of days' increase in the Contract Time claimed as a consequence of each such cause of delay. The Contractor shall provide such supporting documentation as the Owner, Construction Manager or Architect may require including, where appropriate, a revised construction schedule indicating all the activities affected by the circumstances forming the basis of the Claim for an increase in the Contract Time.

§ 15.1.6.1.2 The Contractor shall not be entitled to a separate increase in the Contract Time for each one of the number of causes of delay which may have concurrent or interrelated effects on the progress of the Work, or for concurrent delays due to the fault of the Contractor.

§ 15.1.6.1.3 The Contractor agrees that an express condition precedent to the Contractor's entitlement to any extension of the Contract Time shall be full and complete compliance to the satisfaction of the Owner with the requirements of Articles 8 and 15.

§ 15.1.6.1.4 The Owner shall not be liable to the Contractor or any of its Subcontractor for claims, impact costs, extended general conditions or delay damages of any nature caused by or arising out of delay, disruption, interference, inefficiencies, impedance, hindrance, acceleration, resequencing, schedule impacts, lack of timeliness by the Owner or its Architect or Construction Manager, and lack of coordination or scheduling, cumulative impact of multiple change orders, errors or omissions in the design of the Project, delay and other performance impacts. The sole remedy against the Owner for such 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. Except to the extent, if any, expressly prohibited by law, the Contractor expressly agrees not to make and hereby waives any claim for damages for delay, including, but not limited to, those resulting from increased labor or material costs, extended general conditions, directions given or not given by the Owner, Construction Manager, or Architect, including scheduling and coordination of the Work; the Architect's preparation of drawings and specifications or the Construction Manager's or Architect's review of shop drawings and requests for instructions; errors or omissions in the design of the Project; or, on account of any delay, disruption, interference, impedance, inefficiency, lack of productivity, obstruction or hindrance for any cause whatsoever by the Owner, Construction Manager, Architect or any other Contractor or Separate Contractor on the Project whether or not foreseeable or anticipated. The Contractor agrees that its sole right and remedy therefore shall be an extension of time, if appropriate. It is emphasized that no monetary recovery may be obtained by the Contractor for delay against the Owner, Construction Manager, Architect, other Contractor or Separate Contractor based on any reason and that the Contractor's sole remedy, if appropriate, is additional time.

§ 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. In planning his construction schedule within the agreed Contract Time, it shall be assumed that the Contractor has anticipated the amount of adverse weather conditions normal to the site of the Work for the season or seasons of the year involved. Only those weather delays attributable to other than normal weather conditions will be considered by the Architect.

§ 15.1.7 Waiver of Claims for Consequential Damages. The Contractor waives any and all claims for consequential damages of any kind and nature arising out of or relating to this Contract. This
(Paragraphs deleted)
waiver of consequential damages shall survive termination of the Contract.

§ 15.2 Initial Decision

§ 15.2.1 Claims by the Contractor, excluding those where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2 or arising under Sections 10.3, 10.4, and 11.5, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims by the Contractor excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to binding dispute resolution of any Claim. If an initial decision has not been rendered within 30 days after the Contractor's Claim has been referred to the Initial Decision Maker, the Contractor may proceed with binding dispute resolution without a decision having been rendered.

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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 by the Contractor 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 by the Contractor, 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 by the Contractor or to furnish additional supporting data, such party shall respond, within 10 days after receipt of such 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 by the Contractor in whole or in part.

§ 15.2.5 The Initial Decision Maker will render an initial decision approving or rejecting the Claim by the Contractor, 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 and Construction Manager, if the Architect or Construction Manager 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 binding dispute resolution.

§ 15.2.6 Intentionally omitted.

§ 15.2.6.1 Intentionally omitted.

§ 15.2.7 Intentionally omitted.

§ 15.2.8 If a Claim by the Contractor 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.

ARTICLE 16 SPECIAL CONDITIONS

§ 16.1 Equal Opportunity

§ 16.1.1 The Contractor shall maintain policies for equal employment opportunity for construction employment. During performance of the Agreement, the Contractor agrees as follows:

§ 16.1.2 The Contractor and its Subcontractors shall not discriminate against any employee or applicant for employment because of race, religion, color, sex (including trans-gender), sexual orientation, or national origin. The Contractor shall take affirmative action to ensure that all applicants are employed, and that employees are treated during employment without regard to their race, religion, color, sex, (including trans-gender), sexual orientation, or national origin. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship and on-the-job training.

§ 16.1.3 The Contractor will post and keep posted in conspicuous places, for employees and applicants for employment, notices obtained by the Contractor from the New York State Division of Human Rights as set forth in the General Regulations of that Division at 9 NYCRR 466.1(a), such conspicuous places to be as defined in 9 NYCRR 466.1(b), and such other postings as that Division may require with respect to New York State's laws, codes, rules, and regulations governing discrimination in employment.

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§ 16.1.4 The Contractor will state in all solicitations or advertisements for employees placed by, or on behalf, of the Contractor, that all qualified applicants will be afforded equal employment opportunities without discrimination because of race, creed, color ,sex, (including trans-gender), sexual orientation, or national origin.

§ 16.1.5 The Contractor will comply with provisions of Sections 290-299 of the Executive Law and with the Civil Rights Law, will furnish all information and reports deemed necessary by the State Commissioner of Human Rights under these non-discrimination clauses and such sections of the Executive Law, and will permit access to the Contractor's books, records and accounts by the Owner, the State Commissioner of Human Rights, the Attorney General and the Industrial Commissioner for the purposes of investigation to ascertain compliance with these nondiscrimination clauses and such sections of the Executive Law and Civil Rights Law.

§ 16.1.6 The Contractor will send to each labor union, or representatives of workers, with which it has, or is bound by a collective bargaining or other Agreement or understanding notices obtained from the State Commissioner of Human Rights, advising such Labor Union or representative of the Contractor's Agreement under requirements of this Article. If the Contractor was directed to do so by Owner as part of the Bid, the Contractor shall request such labor union or representative to furnish him with a written statement that such labor union or representative will not discriminate because of race, creed, color, sex, (including trans-gender), sexual orientation, or national origin and that such labor union or representative either will affirmatively cooperate within the limits of its legal and contractual authority in the implementation of the policy and provisions of these non-discrimination clauses or that it consents and agrees that recruitment accordance with the purposes and provisions of these non-discrimination clauses. If such labor union or representative fails or refuses to comply with such a request that it furnish such a statement, the Contractor shall promptly notify the Owner and State Commissioner of Human Rights of such failure or refusal.

§ 16.1.7 The Agreement may be forthwith canceled, terminated or suspended in whole, or in part, by Owner upon the basis of a finding made by the State Division of Human Rights, that the Contractor has not complied with these non-discrimination clauses, and the Contractor may be declared ineligible for future Contracts made by, or in behalf of, the State, or Authority or Agency of the State, or Housing Authority or an Urban Renewal Agency, or Contracts requiring the approval of the Commissioner of Housing and Community Renewal, until it has satisfied the State Division of Human Rights, that it has established and is carrying out a program in conformity with the provisions of these non-discrimination clauses. Such findings shall be made by the State Division of Human Rights after conciliation efforts by the Division have failed to achieve compliance with these non-discrimination clauses and after a verified complaint has been filed with the Division, notice thereof has been given to the Contractor, and an opportunity has been afforded by the Contractor to be heard publicly in accordance with the Executive Law. Such sanctions may be imposed and remedies invoked immediately of, or in addition to sanction in remedies otherwise provided by law. If the Agreement is canceled or terminated under provisions of this Article, in addition to other rights of Owner provided in the Agreement upon its breach by the Contractor, the Contractor will hold Owner harmless against any additional expenses or costs incurred by Owner in completing the work or in purchasing the services, materials, equipment or supplies contemplated by Agreement and Owner may withhold payments from the Contractor in an amount sufficient for this purpose and recourse may be had against authority on the Performance Bond if necessary.

§ 16.1.8 The Contractor will include the provisions of this Article in every subcontract or purchase order in such a manner that such provisions will be binding upon each subcontractor or vendor as to operations to be performed within the State of New York. The Contractor will take such action in enforcing such provisions of such subcontractor or purchase order as the State Division of Human Rights or the Owner may direct, including sanctions or remedies for non-compliance. If the Contractor becomes involved in or is threatened with litigation with a subcontractor or a vendor, as a result of such direction by the State Division of Human Rights, the Contractor shall promptly so notify the Owner and the Attorney General, requesting the Attorney General to intervene and protect the interests of the State of New York.

§ 16.2 Waiver of Immunity

§ 16.2.1 The Contractor hereby agrees to the provisions of Paragraph 139-a and l39-b of the New York State Finance Law and Section 103-a of the New York General Municipal Law, which require that upon the refusal of a person, when called before a grand jury, head of a State department, temporary State commission or other State agency, or the organized crime task force in the Department of Law, which is empowered to compel the attendance of witnesses and examine them under oath, to testify in an investigation concerning any transaction or contract had with the State, any political subdivision thereof, a public authority or with any public department, agency or official of the State or of any

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political subdivision thereof or of a public authority, to sign a waiver of immunity against subsequent criminal prosecution or to answer any relevant question concerning such transaction or contract.

§ 16.2.1.1 Such person, and any firm, partnership or corporation of which he is a member, partner, director or officer shall be disqualified from thereafter selling to or submitting bids to or receiving awards from or entering into any contracts with New York State or any public department, agency or official thereof for goods, work or services, for a period of five years after such refusal.

(Paragraph deleted)
§ 16.2.1.2 Any and all contracts made with the State of New York, or any public department, agency or official thereof since the effective date of this law, by such person, and by an firm, partnership or corporation of which he is a member, partner, director or officer may be canceled or terminated by the State of New York without incurring any penalty or damages on account of such cancellation or termination, but any moneys owning by the State of New York for goods delivered or work done prior to the cancellation or termination shall be paid.

§ 16.3 Non-Collusive Clause as Required by NYS General Municipal Law Section 103-d
(Paragraph deleted)
§ 16.3.1 Every bid or proposal hereafter made to a political subdivision of the state or any public department, agency or official thereof where competitive bidding is required by statute, rule, regulation or local law, for work or services performed or to be performed or goods sold or to be sold, shall contain the following statement subscribed by the bidder and affirmed by such bidder as true under the penalties of perjury: Non-collusive bidding certification.

(Paragraph deleted)
§ 16.3.2 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 knowledge and belief, the following:

(Paragraph deleted)
§ 16.3.2.1 The prices in this bid have been arrived at independently without collusion, consultation, communication, or agreement, for the purpose of restricting competitions, as to any matter relating to such prices with any other bidder or with any competitor.

§ 16.3.2.2 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.

(Paragraph deleted)
§ 16.3.2.3 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.

§ 16.3.3 A bid shall not be considered for award nor shall any award be made where requirements of this Article have not been complied with; provided however, that in any case the bidder cannot make the foregoing certification, the bidder shall so state and shall furnish with the bid a signed statement which set forth in detail the reasons therefore. Where requirements of this Article have not been complied with, the bid shall not be considered for award nor shall any award by made unless the head of the purchasing agent of the political subdivision, public department, agency or official thereof to which the bid is made, or his designee, determines that such disclosure was not made for the purpose of restricting competition.

(Paragraph deleted)
§ 16.3.4 The fact that a bidder (a) has published price lists, rates, or tariffs covering items being procured, (b) has informed prospective customers of proposed, or pending, publication of new or revised price list for such items, or (c) has sold the same items to other customers at the same prices being bids, does not constitute a disclosure within the meaning of this Article.

§ 16.3.5 Any bid hereafter made to any political subdivision of the state or any public department, agency official

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thereof by a corporate bidder for work or services performed or to be performed or good sold or to be sold, where competitive bidding is required by statute, rule, regulation, or local law, and where such bid contains the certification referred to in subdivision one of this section, shall be deemed to have been authorized shall be deemed to include the signing and submission of the bid and the inclusion therein of the certificate as to non-collusion as the act and deed of the corporation.

(Paragraph deleted)

§ 16.4 Assignment of Public Contracts

As provided in Section 109 of the General Municipal Law, the Contractor is prohibited from assigning, transferring, conveying, subletting or otherwise disposing of the same, or of his right title, or interest therein, or his power to execute such contract or any other person or corporation without the previous consent in writing of the officer, board or agency awarding the contract. If any contractor, to whom any contract is let, granted and awarded, as required by law, by any officer, board or agency in a political subdivision, or of any district therein, shall without the previous written consent specified in subdivision one of this section, assign, transfer, convey, sublet or otherwise dispose of such contract, or his right, title or interest therein, or his power to execute such contract, to any other person or corporation, the officer, board or agency which let, made, granted, or awarded such contract shall revoke and annul such contract, and the political subdivision or district therein, as the case may be, and such officer, board or agency shall be relieved and discharged form any and all liability and obligations growing out of such contract to such contractor, and to the person or corporation to which such contract shall have been assigned, transferred, conveyed, sublet or otherwise disposed of, and such contractor, and his assignees, transferees or sublessees shall forfeit and lose all moneys, theretofore earned under such contract, except so much as may be required to pay his employees. The provisions of this section shall not hinder, prevent, or affect an assignment by any such contractor for the benefit of his creditors made pursuant to the laws of this state.

§ 16.5 Fingerprinting

Pursuant to the Safe Schools Against Violence in Education Act ("SAVE" legislation) and Part 87 of the Regulations of the Commissioner of Education, any individual who, as a result of their work on this capital project, will move (or migrate) in and out of student occupied areas for more than five (5) days a year, must be fingerprinted. The Contractor shall be responsible to ensure that it (and its employees) are in full compliance with the fingerprinting provisions New York's SAVE Legislation and Part 87 of the Regulations of the Commissioner of Education at the Contractor's sole cost and expense.

(Paragraph deleted)

ARTICLE 17 NEW YORK STATE LABOR LAW REQUIREMENTS

§ 17.1 Working Hours

(Paragraph deleted)

§ 17.1.1 The Contractor specifically agrees as required by the New York State Labor Law ("Labor Law"), Sections 220 and 220-d, as amended, that:

.1 No laborer, worker, or mechanic in the employ of the Contractor, Subcontractor or other person doing or contracting to do the whole or any part of the work included in the Contract Documents shall be permitted or required to work more than eight hours in any one calendar day or more than five (5) days in any one week, except to the extent permitted in the case of extraordinary emergencies described in the Labor Law.

.2 The wages to be paid to each laborer, worker, or mechanic in the employ of the Contractor, Subcontractor, or other person doing or contracting to do all or any part of the work included in the Contract Documents for a legal day's work shall be not less than the prevailing rate of wages as defined by the Labor Law.

.3 Each laborer, workman or mechanic employed by the Contractor, a Subcontractor, or other person doing or contracting to do all or any part of the work included in the Contract Documents shall be provided the supplements required by Article 8 of the Labor Law.

.4 The minimum hourly rate of wage to be paid shall be not less than that stated in the General Conditions, and shall be as designated by the industrial Commissioner.

.5 The Contractor's and any Subcontractor's or other person's filing of payrolls in a manner prescribed by subdivision 3-a of Section 220 of the Labor Law shall be a condition precedent to the to the Owner's payment of any sums due and owing to the Contractor, Subcontractor or other party for work done on or with respect to the Project.

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§ 17.2 Wage Rates

(Paragraph deleted)

§ 17.2.1 The Contractor specifically agrees, as required by the Labor Law, that the Contract may be forfeited and no sum paid for any work done thereunder on a second conviction for willfully paying less than:

.1 the prevailing wage rates as provided in Labor Law Section 220(3) as amended, or,

.2 the minimum wage rates as provided in Labor Law Section 220-d, as amended.

§ 17.2.2 The Contractor shall comply with Prevailing Wage Rates as issued by the State of New York Department of Labor for the location and duration of this Project. Current wage rates for this project are included in the Project Manual as part of the Contract Documents. The Contractor is responsible to regularly review "Prevailing Wage Schedules/Updates" available on the "Prevailing Wage/Public Work" link on State of New York Department of Labor "Business in New York" web page (www.labor.state.ny.gov) to identify and implement any applicable changes to Prevailing Wage Rates during the Project.

(Paragraph deleted)

§ 17.2.3 The Contractor shall comply with all the requirements of the Labor Law Section 220-a, as amended, regarding mandatory submission of certified payroll records, which shall be included with each application for payment.

(Paragraphs deleted)

§ 17.3 Anti-Discrimination

§ 17.3.1 The Contractor specifically agrees, as required by the provisions of Section 220-e of the Labor Law, as amended, that:

.1 In the hiring of employees for the performance of work under the Contract or any subcontract hereunder, no contractor, subcontractor, nor any person acting on behalf of such contractor or subcontractor, shall be reason of race, creed, color, sex (including transgender), sexual orientation, or national origin discriminate against any citizen of the State of New York who is qualified and available to perform the work to which the employment relates;

.2 No contractor, subcontractor, nor any person on its behalf, shall in any manner, discriminate or intimidate any employee hired for the performance of work under the contact on account of race, creed, color, sexual orientation, or national origin.

.3 There may be deducted from the amount payable to the Contractor by the Owner under the contract a penalty at fifty dollars for each person for each calendar day during which such person was discriminated against or intimidated in violation of the provisions of the contract; and

.4 The Contract may be canceled or terminated by the Owner, and all monies due or to become due thereunder may be forfeited for a second or any subsequent violation of the terms or conditions of this section of the Contract.

ARTICLE 18 GENERAL MUNICIPAL LAW REQUIREMENTS OF THE STATE OF NEW YORK

§ 18.1 Payment of Contractors and Subcontractors

§ 18.1.1 The Contractor specifically agrees it is bound by Section 106-b of the New York General Municipal Law.

ARTICLE 19 SPECIFIC CONFORMANCE TO THE LAWS OF THE STATE OF NEW YORK

§ 19.1 Statutory Requirements

§ 19.1.1 The parties agree that each is bound to the provisions of the laws of the State of New York governing bidding and contracting for public improvement projects, including but not limited to applicable provisions of the General Obligations Law, Labor Law, and General Municipal Law. To the extent any provisions in the Contract Documents conflict with any provisions of New York Law, the statutory provisions shall prevail and the conflicting provisions in the Contract Documents shall be deemed to conform to the statutory provisions.

§ 19.1.2 To the extent the laws of the State of New York governing bidding and contracting for public improvement projects mandate inclusion of specific terms in contracts for such improvements, but which are not already included in these General Conditions, such terms shall be deemed and hereby are incorporated into these General Conditions.

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PAGE 1

Nanuet High School Elevator Addition
101 Church Street
Nanuet, NY 10954
SED #50-01-08-03-0-003-032

...

(Name, legal ~~status,~~ status and address)

Jacobs
500 7th Ave, 17th Floor
New York, NY 12601
T. 646.908.6550

...

(Name, legal ~~status, and address)~~status and address)

Nanuet School District
101 Church Street
Nanuet, NY 10954
T. 845.343.1481

...

(Name, legal ~~status,~~ status and address)

KSQ Architects, PC (dba KSQ Design)
215 West 40th Street, 15th Floor
New York, NY 10018
T. 914.628.3700

PAGE 2

15 CLAIMS AND DISPUTES

16 SPECIAL CONDITIONS

17 NEW YORK STATE LABOR LAW REQUIREMENTS

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18 GENERAL MUNICIPAL LAW REQUIREMENTS OF THE STATE OF NEW YORK

19 SPECIFIC CONFORMANCE TO THE LAWS OF THE STATE OF NEW YORK

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§ 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~~ (hereinafter, the "Agreement"), and consist of the Bidding Documents (including, but not limited to, Invitations to Bid, Instructions to Bidders, sample forms, the Contractor's bid or portions of the addenda relating to bidding requirements), 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,~~ 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,~~ 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.~~ Construction (hereinafter, the "Contract"). 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 the Construction Manager or the Construction Manager's consultants, (3) between the Owner and the Architect or the Architect's consultants, (4) between the Contractor and the Construction Manager or the Construction Manager's consultants, (5) between the Owner and a Subcontractor or Sub-subcontractor (6) between the Construction Manager and the Architect, or (7) between any persons or entities other than the Owner and Contractor. The Construction Manager and Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of their duties.

§ 1.1.2.1 Where the term "Agreement," "Contract" or "Prime Contract" is used in these General Conditions, and other Contract Documents, it shall mean the separate Owner-Contractor Agreement between the Owner and each Prime Contractor identified in Conditions of the Contract (General, Supplementary and other conditions).

§ 1.1.2.2 The Contractor acknowledges and warrants that it has closely examined all the Contract Documents, that they are suitable and sufficient to enable the Contractor to complete the Work in a timely manner for the Contract Sum, and that they include all work, whether or not shown or described, which reasonably may be inferred to be required or useful for the completion of the Work in full compliance with all applicable statutes, codes, laws, ordinances and regulations.

§ 1.1.3 The Work. The term "Work" means the construction and services required by the Contract Documents, or as reasonably inferable therefrom, 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. The Work includes all of the Contractor's responsibilities as to all labor, parts, supplies, equipment, skill, supervision, transportation services, storage requirements, and other facilities and things necessary, proper or incidental to the carrying out and completion of the terms of the Contract Documents and all other items of cost or value needed to produce, construct, and fully complete the Contractor's Work identified by the Contract Documents.

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§ 1.1.8 The Specifications. The Specifications are that portion of the Contract Documents consisting of the written requirements for materials, equipment, systems, standards and workmanship for the Work, and performance of related ~~services.~~services and general requirements for the Project.

§ 1.1.9 Instruments of Service. Instruments of Service are representations, in any medium of expression now known or later developed, of the tangible and intangible creative work performed by the Architect and the Architect's consultants under their respective professional services agreements. Instruments of Service may include, without

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limitation, studies, surveys, models, sketches, drawings, specifications, and other similar ~~materials.~~materials including those in electronic form.

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§ 1.1.11 Miscellaneous Definitions

§ 1.1.11.1 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 care, skill, and diligence required of the Contractor by the Contract Documents.

§ 1.1.11.2 The term "any" in the Contract Documents shall be interpreted as "any and all" whenever one or more than one item would be applicable for completion of the Work.

§ 1.1.11.3 Except as otherwise explicitly provided, the words "approved" or "approval" shall mean the written approval of the Architect or the Construction Manager, or both.

§ 1.1.11.4 "Accepted," "directed," "permitted," "requested," "required," and "selected" are used herein as term connections and unless specifically noted otherwise are to mean "accepted by the Architect," "directed by the Architect," "permitted by the Architect," "requested by the Architect," "required by the Architect," and "selected by the Architect." However, no such implied meaning will be interpreted to extend the Architect's responsibility into the Contractor's areas of construction supervision.

§ 1.1.11.5 The term "as indicated" or "as shown" shall mean "as indicated in the Contract Documents."

§ 1.1.11.6 The term "include" in any form other than "inclusive" is non-limiting and not intended to mean "all inclusive."

§ 1.1.11.7 The terms "furnish" and "furnish all materials," unless specifically noted otherwise, mean "pay for, supply and deliver to the job site all new materials, systems, equipment, product, and/or other items so specified."

§ 1.1.11.8 The terms "install" and "furnish all labor," unless specifically noted otherwise, mean "pay for, perform all operations connected with installation of Work including unloading new product to be installed, supplying all necessary equipment and rigs to do the Work, test, place in operation and service, and remove all packing material."

§ 1.1.11.9 The term "product" includes materials, systems, equipment, and other items to be incorporated into the Work.

§ 1.1.11.10 The term "provide," unless specifically noted otherwise, means "furnish new, install, connect up, complete, test and place in operation and service."

§ 1.1.11.11 The term "replace" or similar term shall mean "restore," "renew," "make good," "reconstruct," or "as applicable using new product."

§ 1.1.11.12 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 where in sight in crawl spaces or service tunnels.

§1.1.11.13 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.

§ 1.1.11.14 The terms "manufacturer" or "supplier" mean any person or entity which contracts to furnish materials to a Contractor, Subcontractor, or any Sub-subcontractor for use at the site of the Project.

§ 1.1.11.15 "Wiring" shall be understood to mean wires or cables with conduit, fittings, boxes, etc., installed complete.

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§ 1.1.11.16 "Piping" shall be understood to mean all pipes, fittings, nipples, valves and all accessories connected thereto.

§ 1.1.11.17 The Contract Time is the period of time specified in Article 3 of the Agreement for completion of the Work.

§ 1.1.11.18 Terms not otherwise defined herein shall have the meanings set forth elsewhere in 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. It is intended that all plumbing, mechanical, electrical, and other systems will be complete and in proper operation, and that all construction components, whether part of such systems or otherwise, will be complete and in compliance with accepted construction practice upon completion of the Work. Even if items are missing from the Drawings or Specifications, but are normally required for proper operation of plumbing, mechanical, electrical, and other systems, or to complete otherwise incomplete construction, or to meet governing code requirements, they shall be included by the Contractor, unless he sought and received contradictory interpretation or clarification from the Architect.

§ 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.

§ 1.2.1.2 The Contractor and its Subcontractors shall evaluate and satisfy themselves as to the conditions and limitations under which the Work is to be performed, including without limitation (1) location, layout, and nature of the Project site and surrounding areas, (2) generally prevailing climatic conditions, (3) anticipated labor supply and costs, (4) availability and cost of materials, tools, equipment, (5) Owner occupancy requirements and constraints, (6) site safety logistics plan and any phased construction plan and (7) other similar issues. The Owner assumes no responsibility or liability for the physical condition or safety of the Project site or any improvements located on the Project site. The Contractor shall be solely responsible for providing a safe place for the performance of the Work. No adjustments will be made in either the Contract Sum or Contract Time for any failure by the Contractor or any Subcontractor to comply with the requirements of this Section 1.2.1.2.

§ 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. Instructions and other information furnished in the Specifications including, without limitation, items in connection with prefabricated or prefinished items, are not intended to supersede work agreements between employers and employees. Should the Specifications conflict with such work agreements, the work agreements shall be followed, provided such items are provided and finished as specified in the Contract Documents. If necessary, such work shall be performed on the Project site, instead of at the shop, by appropriate labor and in accordance with the requirements of the Drawings and Specifications.

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§ 1.2.4 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 or (2) comply with the more stringent requirements; either or both in accordance with the Architect's interpretation. Where the Contractor perceives a conflict, it shall inform the Architect and Owner thereof and request a decision from the Architect, which shall be promptly communicated by the Architect to the Contractor so as not to cause any delay in the performance of the Work. Any Work performed after perceiving the conflict and prior to resolution by the Architect shall be at the Contractor's risk. The terms and provisions of this Section 1.2.4, however, shall not relieve the Contractor of any of the obligations set forth elsewhere herein.

.1 The Contractor shall not scale Drawings. Dimensions on large scale drawings take precedence over dimensions on small scale drawings. The Contractor shall notify the Architect if additional dimensions are needed. The Contractor shall field verify all dimensions.

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.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. The Contractor shall confirm all dimensions by field measuring. No extra charge or compensation will be allowed on account of differences between actual dimensions and the dimensions indicated on the Drawings. Any difference that may be found shall be submitted to the Architect for resolution before proceeding with the Work.

.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 the approval by the Architect before making the change.

.4 Certain portions of the Specifications are written in condensed outline form and omitted words are to be supplied by inference. Naming of an article or operations shall have the effect of stating "Contractor shall furnish, install and complete" said operation or article unless it is further qualified in the context in which it appears.

.5 When reference is made to specifications of a manufacturer, trade association, governmental agency, reference standard or similar source (such as ASTM, ASA, AISC, ACI, etc.) such is made part of these Specifications, having the force and effect as though reproduced herein, and upon entering into the Contract the Contractor acknowledges his familiarity with those pertaining to his work. The date of the reference standard shall be the latest edition at the time of signing the Contract except as specifically indicated otherwise.

.6 The Contract Drawings are intended to show the general arrangement, design, and extent of the Work and are partly diagrammatic. They are not intended to be scaled for any purpose, or to serve as shop drawings. The Contractor and its Subcontractors will cooperate with all other contractors and their respective subcontractors in determining the construction of systems, running of pipe, and locating equipment. The Contractor agrees that the failure to repeat typical details, figures, or notes on all Contract Drawings or other Contract Documents will not be a basis for claims for additional cost or time.

.7 Any necessary variations in routing or installation shall be made to conform to the intent of the Contract Documents without additional costs. Where there are intersections or obstructions involving ducts, piping, or any other equipment requiring offset of materials, the Contractor acknowledges that it gave particular consideration to clearances in advance of submitting its bid, and that no additional costs for these issues will be considered by the Owner.

.8 If conflicting conditions or interferences develop, the Contractor and its Subcontractors will confer with the other contractors and their respective subcontractors whose work is affected to determine a solution acceptable to all interested parties. The suggested solution shall be submitted to the Architect for comment and, if necessary, written approval.

.9 The Contract Documents intend a first class finished product of such character and quality as described in and reasonably inferred from the Contract Documents. The Contractor will perform its Work to be complete and operable, fitting with the work of other contractors and the Owner, and in compliance with best construction practices and the ordinances, codes, and regulations of all bodies or persons having governmental or regulatory authority over the Contractor and its Work.

§ 1.2.5 Execution of the Contract by the Contractor is a representation that the Contractor has carefully examined the Contract Documents and the Project site, and represents that the Contractor is thoroughly familiar with the nature and location of the Work, the Project site, the specific conditions under which the Work is to be performed, and all matters which may in any way affect the Work or its performance. The Contractor further represents that as a result of such examinations and investigations, the Contractor thoroughly understands the Contract Documents and their intent and purpose, and is familiar with all applicable codes, ordinances, laws, regulations, and rules as they apply to the Work, and that the Contractor will abide by same. Claims for additional time or additional compensation as a result of the Contractor's failure to follow the foregoing procedure and to familiarize itself with all conditions and the Contract Documents will not be permitted.

§ 1.2.5.1 The Contractor certifies that it is experienced and familiar with the requirements and conditions imposed during the construction of similar work in the area. This includes, but is not limited to, "out of sequence" or "come back" work for the removal of plant, equipment, temporary wiring or plumbing, etc. This "out of sequence" work may also include phasing of construction activities to accommodate the installation of the Work at various locations and orderly fashion and the completion of Work at various locations or levels at various times. This "phasing," "out of sequence," or "come back" work shall be done at no cost to other Contractors, the Owner or Architect.

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§ 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~~ do not own ~~or~~ and cannot 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.

...

§ 1.5.3 The Contractor may not reproduce the Contract Documents in whole or in part for use as shop drawing backgrounds without the prior written consent of the Architect. If consent is given, the Architect shall determine the extent that the Contract Documents may be used in the preparation of shop drawings, as well as the fee that the Architect will be paid, if any and in the Architect's sole discretion, by the Contractor for such use of copyrighted documents.

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§ 2.1.3 The Owner, Architect or Construction Manager shall not supervise, direct or have control or authority over, nor be responsible for, the Contractor's 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 and regulations applicable to the furnishing or performance of the Work. The Owner, Architect and Construction Manager shall not be responsible for the Contractor's failure to perform or furnish the Work in accordance with the Contract Documents.

§ 2.2 Evidence of the Owner's Financial Arrangements – Intentionally Omitted.

~~**§ 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.~~

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§ 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~~ All permits and fees, approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing ~~facilities. Unless otherwise provided under the Contract Documents, the Owner, assisted by the Construction Manager, shall secure and pay for the building permit.~~facilities are the responsibility of the Contractor under the Contract Documents with the exception of the building permit, which the Owner will obtain from the State Education Department.

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§ 2.3.4 If the employment of the Construction Manager or Architect terminates, the Owner shall employ a successor construction manager or architect ~~to whom the Contractor has no reasonable objection and~~ whose status under the Contract Documents shall be that of the Construction Manager or Architect, respectively.

§ 2.3.5 The Owner shall ~~furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.~~make available for inspection, upon request, that field survey or testing information of existing conditions that is known to be available and that is held by the Owner at its offices. Such records and documents are not Contract Documents, and the Owner makes no representation as to their accuracy or completeness. Notwithstanding the foregoing, information furnished by the Owner in the form of surveys, subsurface investigation reports, soil borings, and other material of a similar nature, is for general information only and is not a guarantee of the completeness or accuracy of such information, unless specifically noted otherwise herein. The Contractor shall verify all existing grades, conditions, and dimensions of existing physical conditions and structures and shall report any inconsistencies in writing to the Architect. The Contractor shall establish all lines and levels required to execute the Work and shall bear all costs involved, and shall be responsible for their accuracy and maintenance.

§ 2.3.6 ~~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.~~Intentionally omitted.

§ 2.3.7 Unless otherwise provided in the Contract Documents, the Owner shall furnish to the Contractor ~~one copy of the Contract Documents~~ five (5) sets of Contract Drawings and Project Manuals for use during construction for their own use and for purposes of making reproductions pursuant to Section 1.5.2. The 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. Subcontractors and other entities desiring copies of Drawings will be provided sets at the cost of printing, postage and handling.

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If the Contractor (1) fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section ~~12.2 or repeatedly~~ 12.2, or (2) fails to carry out Work in accordance with ~~the Contract Documents,~~ the Contract Documents as determined by the Owner, Architect or Construction Manager, or (3) fails or refuses to provide a sufficient amount of properly supervised and coordinated labor, materials, or equipment so as to be able to complete the Work within the Contract Time, or (4) fails to remove and discharge (within seven (7) days) any lien filed upon Owner's property by anyone claiming by, through, or under the Contractor, or (5) fails to perform the Work in a safe manner and in compliance with all applicable health and safety requirements and the Contractor's site specific health and safety plan or (6) disregards the instructions of the Architect, Owner or Construction Manager, as determined by the Owner, Architect or Construction Manager, 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.~~entity. Such order or stoppage by the Owner shall not constitute grounds for termination by the Contractor under Article 14 and shall not be a basis for an extension of the Contract Time under Section 8.3 or Article 15.

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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~~ (including but not limited to all applicable health and safety requirements) and fails within a three (3) work day period after receipt of written notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner ~~may,~~ may after such three (3) work day period, without prejudice to other remedies the Owner may have, correct ~~such default or neglect. Such action by the Owner and amounts charged to the Contractor are both subject to review by the Construction Manager and prior approval of the Architect, and the Construction Manager or Architect may, pursuant to Section 9.5.1, withhold or nullify a Certificate for Payment in whole or in part, to the extent reasonably necessary to reimburse the Owner for~~ such deficiencies. In such case an appropriate Change Order or Construction Change Directive shall be issued deducting from payments then or thereafter due the Contractor the reasonable cost of correcting such deficiencies, including the Owner's expenses and compensation for the Construction Manager's and Architect's and their respective consultants' additional services ~~made necessary by such default, neglect, or failure. If current and future payments~~ and other expenses made necessary by such default, neglect or failure. Such Change Order or Construction Change Directive shall be deemed to have been executed by the Contractor, whether or not actually signed by the Contractor. Such action by the Owner and amounts charged to the Contractor shall be equally binding upon the Contractor's performance and payment bond surety. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner. ~~If the Contractor disagrees with the actions of the Owner or the Architect, or the amounts claimed as costs to the Owner, the Contractor may file a Claim pursuant to Article 15.~~

§ 2.6 Extent of Owner's Rights

§ 2.6.1 The rights stated in this Article 2 and elsewhere in the Contract Documents are cumulative and not in limitation of any rights of the Owner (1) granted in the Contract Documents, (2) at law or (3) in equity.

§ 2.6.2 In no event shall the Owner, Architect or Construction Manager have any responsibility for the Contractor's construction means, methods, techniques, sequences or procedures or for safety precautions and programs in connection with the Work notwithstanding any of the rights and authority granted the Owner in the Contract Documents.

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The term "Contractor" used herein shall include:

1. That Contractor normally responsible for that Work referenced.
2. "Prime Contractor" meaning either General Contractor, HVAC Contractor, Plumbing Contractor, Electrical Contractor, or any other Contractor whom the Owner has a direct contractual relationship for the referenced Work.
3. "Trade Contractor" meaning the Prime Contractor as above.

§ 3.1.2 The ~~Contractor shall perform the Work in accordance with the Contract Documents.~~plural term "Multiple Prime Contractors" refers to persons or entities who perform construction under contracts with the Owner that are administered by the Construction Manager. The term does not include the Owner's own forces, including persons or entities under separate contracts not administered by the Construction Manager.

§ 3.1.3 The Contractor shall ~~not be relieved of its obligations to~~ perform the Work in accordance with the Contract ~~Documents either by activities or duties of the Construction Manager or Architect in their administration of the Contract, or by tests, inspections or approvals required or performed by persons or entities other than the Contractor.~~Documents.

§ 3.1.4 The Contractor shall not be relieved of obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Construction Manager or Architect in their administration of the Contract, or by tests, inspections or approvals required or performed by persons or entities other than the Contractor.

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§ 3.2.1.1 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the Contract Documents relative to that portion of the Work, as well as with information furnished by the Owner pursuant to Section 2.3.5, shall take field measurements of any existing conditions related to that portion of the Work, shall observe any conditions at the site affecting it, and shall at once report in writing to the Construction Manager and the Architect errors, inconsistencies or omissions discovered. The Contractor shall not be liable to the Owner, the Construction Manager or the Architect for damage resulting from errors, inconsistencies or omissions in the Contract Documents unless the Contractor knew or reasonably should have known of such error, inconsistency or omission and failed to report it as required by this section to the Construction Manager and the Architect. If the Contractor performs any construction activity knowing it involves, or reasonably should have known it involves, a recognized error, inconsistency or omission in the Contract Documents without such notice to the Construction Manager and the Architect, the Contractor shall assume full responsibility for such performance and shall bear sole responsibility for the costs for correction.

§ 3.2.1.2 The obligations of the Contractor under Section 3.2.1.1 and this Section 3.2.1.2 are for the purpose of facilitating construction by the Contractor and are not for the purpose of imposing an affirmative obligation on the Contractor to discover errors, omissions, or inconsistencies in the design information in the Contract Documents. The Contractor's review of the Contract Documents is made in the Contractor's capacity as a contractor and not as a licensed design professional unless otherwise specifically so provided in the Contract Documents.

§ 3.2.1.3 Failure by the Contractor to promptly report any errors, inconsistencies, or omissions in the Contract Documents discovered by the Contractor, or which the Contractor reasonably should have known or discovered, shall constitute a waiver by the Contractor of any claim that otherwise might result in a change in the Contract Sum or Contract Time.

§ 3.2.2 ~~Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.3.5, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Construction Manager and Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information submitted to the Construction Manager in such form as the Construction Manager and Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.~~The Contractor shall be presumed to have examined the Project site(s) to consider fully all conditions that may have a bearing on the Work and to have accounted for these conditions its proposal. The Contractor is deemed to be a qualified expert in the systems and construction requirements of the Work of its Contract. The Contractor hereby specifically acknowledges and declares that the Contract Documents are full and complete, are sufficient to have enabled it to determine the cost of the Work, and that the Drawings, the Specifications, and all Addenda are sufficient to enable the Contractor to construct the Work outlined therein in accordance with applicable laws, statutes, building codes, and regulations, and otherwise to fulfill all of its obligations under the Contract Documents. The Contractor shall take field measurements and verify field conditions and shall carefully compare such field measurements and conditions and other information known to the Contractor with the Contract Documents before commencing activities. Errors, inconsistencies or omissions discovered shall be reported to the Construction Manager and the Architect at once. The exactness of grades, elevations, dimensions, or locations given on any Drawings issued by the Architect, or the work installed by other Contractors, is not guaranteed by the Architect, Construction Manager or the Owner. The Contractor shall, therefore, satisfy itself as to the accuracy of all grades, elevations, dimensions, and locations. In all cases of interconnection of its Work with existing or other work, the Contractor shall verify at the site all dimensions relating to such existing or other work. Any errors due to the Contractor's failure to so verify all such grades, elevations, dimensions, or locations shall be promptly rectified by the Contractor without any additional cost to the Owner. Except as to any reported errors, inconsistencies or omissions, and except as to concealed or unknown conditions, by executing the Agreement, the Contractor represents to the Owner, Construction Manager, and the Architect that the Work required by the Contract Documents, including, without limitation, 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

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standards applicable to Work; (3) the 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.

§ 3.2.3 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 Construction Manager and Architect any nonconformity discovered by or made known to the Contractor as a request for information submitted to Construction Manager in such form as the Construction Manager and Architect may require.~~shall perform the Work in accordance with the Contract Documents and submittals approved pursuant to Section 3.12.

§ 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.~~The Contractor may submit Requests for Information ("RFI") to the Architect to help facilitate the Contractor's performance of the Work. Prior to submitting each RFI, the Contractor shall first carefully study and compare the Contract Documents, field conditions, other Owner provided information, Contractor-prepared Coordination Drawings, and prior Project correspondence and documentation to determine that the information to be requested is not reasonably obtainable from such sources. The Contractor shall submit each RFI sufficiently in advance of the date by which such information is required in order to allow the Architect sufficient time to permit adequate review and response and to permit Contractor compliance with the latest construction schedule. The Contractor shall reimburse the Owner amounts charged by the Architect for RFI responses that in the opinion of the Architect were available from a careful review of the Contract Documents, field conditions, other Owner provided information, Contractor-prepared Coordination Drawings, and prior Project correspondence and documentation.

§ 3.2.5 If the Contractor, during the progress of the Work, discovers any discrepancies between the Drawings and the Specifications, errors and/or omissions on the Drawings, or any discrepancies between physical conditions of the Work and the Drawings, and has notified the Architect and Construction Manager in writing under Section 3.2.1, no deviations from the Contract Documents shall be performed by the Contractor until it receives approval in writing from the Architect through the Construction Manager. Any Work performed after such discovery without the approval of the Architect shall be at the Contractor's sole risk and expense.

§ 3.2.6 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 Construction Manager and the Architect any nonconformity discovered by or made known to the Contractor as a RFI submitted to the Architect.

§ 3.2.7 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 RFIs pursuant to Sections 3.2.1, 3.2.2, 3.2.4, 3.2.5 or 3.2.6, the Contractor shall make a Claim as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.1, 3.2.2, 3.2.4, 3.2.5 or 3.2.6, the Contractor shall pay such costs and damages to the Owner 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 the 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.

§ 3.2.8 The Contractor shall be responsible for laying out the Work, shall protect and preserve the established reference points and shall make no changes or relocations without the prior written approval of Owner. The Contractor shall report to the Construction Manager and Architect whenever any reference point is lost or destroyed or requires relocation because of necessary changes in grades or locations, and shall be responsible for the accurate replacement or relocation of such reference points by professionally qualified personnel.

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§ 3.2.8.1 The Contractor shall be required to establish centerlines, elevations and location of his work when it is required for the benefit of other Contractors needing the information to coordinate location of their work.

§ 3.2.9 Whenever the Drawings show existing or other construction not required as part of the Contract Work, it is understood that it is so shown as a matter of information and that the Owner, while believing such information to be substantially correct, assumes no responsibility thereof. The Contractor shall make itself familiar with all conditions affecting the nature and manner of conducting the Work.

§ 3.2.10 Claims for additional compensation or extension of time due to the Contractor's failure to familiarize itself with the conditions at the site will not be allowed.

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§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and ~~attention.~~ attention, and shall complete the Work in a good and workmanlike manner in accordance with the Contract Documents. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences, and ~~procedures,~~ procedures and for coordinating all portions of the Work ~~under the Contract. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences, or procedures, the Contractor shall evaluate the jobsite safety thereof and shall be solely responsible for the jobsite safety of such means, methods, techniques, sequences, or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely notice to the Owner, the Construction Manager, and the Architect, and shall propose alternative means, methods, techniques, sequences, or procedures. The Architect shall evaluate the proposed alternative solely for conformance with the design intent for the completed construction. The Construction Manager shall review the proposed alternative for sequencing, constructability, and coordination impacts on the other Contractors. Unless the Architect or the Construction Manager objects to the Contractor's proposed alternative, the Contractor shall perform the Work using its alternative means, methods, techniques, sequences, or procedures.~~subject to the coordination of the Construction Manager. Where the Drawings or Project Manual make reference to particular construction means, methods, techniques, sequences or procedures or indicate or imply that such are to be used in connection with the Contractor's Work, such reference is intended only to indicate that the Contractor's Work is to produce at least the quality of the work implied by the operations described, but the actual determination as to whether or not the described operations may be safely or suitably employed in the performance of the Contractor's Work shall be the sole responsibility of the Contractor. All loss, damage, liability, or cost of correcting defective Work arising from the employment of a specific construction means, method, technique, sequence, or procedure shall be borne solely by the Contractor.

§ 3.3.2 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, ~~Subcontractors~~ Subcontractors, Suppliers, 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.~~Subcontractors, Suppliers or Sub-subcontractors, and for any damages, losses, costs and expenses resulting from such acts or omissions, including but not limited to reasonable attorneys' fees.

§ 3.3.3 The Contractor shall be responsible for ~~inspection of portions of the Project already performed to determine that such portions are in proper condition to receive subsequent Work.~~coordinating the work of its own forces and the work of Subcontractors engaged by it to perform the Work of the Project on its behalf. The Contractor shall supply to its own work forces, and Subcontractors engaged by it to perform portions of its Work, copies of the Drawings and Project Manuals for the work to be performed by such individuals/entities on its behalf.

§ 3.3.3.1 The Contractor shall coordinate its operations and cooperate with those of other Contractors performing work on the Project or site thereof to ensure efficient and orderly installation of each part of the Work. Cooperation will be required in the arrangement for the storage of materials and in the detailed execution of the Work. The Contractor shall remain informed of the progress and the detail work of other Contractors and shall notify the Construction Manager immediately of lack of progress or defective workmanship on the part of other Contractors, where such delay or such defective workmanship will interfere with Contractor's own operations. Failure of the Contractor to keep informed of the work progressing on the site or to give notice of lack of progress or defective workmanship by others shall be construed as acceptance of the progress of work and coordination with Contractor's own Work.

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§ 3.3.3.2 The Contractor's obligations under the Contract Documents shall include, without limitation, the following:

.1 Review of all specified construction and installation procedures with its employees and/or Subcontractors, including, without limitation, those recommended by manufacturers, prior to the commencement of the relevant portion of the Work to be performed.

.2 Advising the Construction Manager and the Architect:

.1 if a specified procedure deviates from best construction practice;

.2 if following a procedure will affect any warranties, including the Contractor's general warranty; or

.3 of any objections the Contractor may have to a procedure.

.3 Proposing alternative procedures, as appropriate, which procedures shall be covered by the Contractor's warranty as described in Section 3.5 hereof.

.4 The Contractor shall be responsible for organizing and conducting pre-installation conferences and must coordinate such conferences with the Architect and the Construction Manager.

§ 3.3.3.3 The Contractor and its Subcontractors working on the Project shall attend a preconstruction conference(s) or meeting(s) as deemed necessary by the Construction Manager to coordinate all Work (e.g., demolition, installation, etc.), and as required by the Project Manual.

§ 3.3.4 The Contractor shall not be relieved of obligations to perform the Work in accordance with the Contract Documents either by activities or duties of the Construction Manager or the Architect in their administration of the Contract, or by tests, inspections or approvals required or performed by persons other than the Contractor. The Contractor shall maintain complete inspection records and test date to ensure the quality of the Work is in strict compliance with the requirements of the Contract Documents.

§ 3.3.5 Where equipment lines, piping, ductwork, and/or conduit are shown diagrammatically, the Contractor shall be responsible for the coordination and orderly arrangement of the various lines of piping and conduit included in the Work of its Contract. The Contractor shall coordinate the work of its Subcontractors and prevent all interferences between or among equipment, lines of piping, and architectural features, and avoid any unsightly arrangements in exposed areas. This Section shall not be construed as limiting any obligation of the Contractor under any other provision of the Contract Documents.

§ 3.3.6 The Contractor shall be responsible for inspection of portions of the Project already performed to determine that such portions are in proper condition to receive subsequent Work.

§ 3.3.7 The Contractor, its employees and Subcontractors, shall be subject to such rules and regulations for the conduct of Work as the Owner may establish, including but not limited to, the Construction Rules and Regulations set forth in Section 3.13.4. The Contractor shall be responsible for the enforcement among its employees of the Owner's instructions.

§ 3.3.8 The Contractor shall inspect all materials as delivered to the Project site and shall reject any materials that will not conform with the requirements of the Contract Documents when properly installed.

§ 3.3.9 The Contractor shall be responsible for and coordinate any and all inspections required by any governmental body having jurisdiction over the Project. Failure to obtain any permits, licenses or other approvals because of the failure of the Contractor to conform to this requirement shall not extend the Contract time, and the Contractor shall not be entitled to any increase in the Contract Sum therefore. In addition, any additional costs and expenses of any nature incurred by the Owner as a result of the Contractor's failure to conform to this requirement shall constitute a charge against the Contractor's Contract.

§ 3.3.10 Shutdowns: Such work as connections to existing sewers, plumbing, heating, and electrical systems shall be coordinated at a time agreeable to the Owner, the Architect, and the Construction Manager, and shall be determined and agreed to well in advance of the actual performance of such work so as to interfere as little as possible with the operation and use of the Owner's existing facilities. Shutdowns must be coordinated through the Construction Manager. The continued uninterrupted operation of all facilities of the Owner's buildings 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 these existing facilities at no increase in the Contract Sum except as otherwise specified. No mechanical, heating, plumbing, sprinkler, or electric service shall be interrupted at any time except as

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approved in advance by the Owner or when the buildings are not occupied and shall be coordinated with the Owner, as well as the Construction Manager. All communication systems must be maintained without interruption. As much related work as possible shall be performed prior to shutdowns, so as to minimize the period of shut down. All material, equipment, and manpower necessary in the performance of a shutdown shall be on site prior to interruption of service.

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§ 3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for ~~labor,~~ labor (at applicable prevailing wage rates), 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. All materials provided by Contractor shall be new. The Contractor shall work continuously and expeditiously through completion of the Work. Time is of the essence.

§ 3.4.1.1 Notwithstanding any other provision of the Contract Documents, Contractor shall perform at least twenty five (25%) percent of the field work with its own full-time employees. For the purpose of the preceding sentence any part of the work performed by supervisory personnel (persons above level of foreman) or by office personnel shall not be considered part of the Work performed by Contractor's employees. Such items as bonds, certificates, shop drawings and similar items are not to be counted as satisfying the twenty five (25%) percent requirement**.**

§ 3.4.1.1 A shortage of labor in the industry shall not be accepted as an excuse for not properly manning the Project at each site.

§ 3.4.1.2 The Contractor shall be responsible for the care and protection of all equipment and materials for its Work on the Project, including equipment and material furnished by the Owner.

§ 3.4.2 Except in the case of minor changes in the Work approved by the Architect in accordance with Section 3.12.8 or ordered by the Architect in accordance with Section 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect, in consultation with the Construction Manager, and in accordance with a resulting 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.~~them, or persons who within the last five (5) days (a) having been exposed to someone having been diagnosed with a COVID-19 infection; or (b) having had a persistent cough, shortness of breath, or a fever of 100.4 or higher. The Owner reserves the right to have any persons removed from the Project upon reasonable objection.

§ 3.4.3.1 In addition to all other safety requirements, the Contractor shall provide suitable and a sufficient number of safety related facilities and personal protective equipment (PPE) at the site related to protection against the spread of COVID-19, including but not limited to handwashing stations, hand sanitizer, gloves, masks, faceshields, and other equipment as the Owner may reasonably request. Notwithstanding the foregoing, nothing herein shall be construed to delegate or relieve Contractor from having sole and exclusive responsibility for all worksite safety.

§ 3.4.4 All mechanics employed on the Project shall be persons skilled in that work which they are to perform. Work will not be approved if it does not meet the quality of workmanship as called for in the Contract Documents. If this quality of workmanship is not exactly defined herein, it shall be assumed to be the best standards of workmanship for the trade.

§ 3.4.5 Employees of the Contractor or its Subcontractors whose work is unsatisfactory to the Owner, Construction Manager or Architect, or considered by them to be unskilled or otherwise objectionable, will be immediately dismissed from the Project upon notice from the Construction Manager. Those dismissed employees shall be immediately replaced by the Contractor so as not to delay progress of the Work and at no additional cost to the Owner. All employees of the Contractor or Subcontractor shall be processed through the Owner's database which excludes sex offenders and other people not deemed safe for presence on a school site. Any person who is flagged by that

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system shall not be employed on site. Further, the Contractor or its Subcontractor shall not employ any person onsite who is known to them to be a sex offender as defined by New York State.

§ 3.4.6 On receipt of the signed Contract, the Contractor will be expected to place firm orders with vendors for needed materials, including Subcontractors and major material suppliers. If deemed necessary to assure delivery of materials at times needed, the Contractor may accept delivery of such materials at any time, and may include the cost of such materials in its next monthly Application for Payment, provided such materials have actually been delivered to Contractor and properly stored by it with approval or under direction of the Architect and the Construction Manager either at the Project site or in an approved storage shed or warehouse, as provided elsewhere in these General Conditions.

§ 3.4.6.1 To the fullest extent possible, the Contractor shall provide products of the same kind, from a single source. When two or more items of same material or equipment are required (pumps, valves, air conditioning units, etc.) they shall be of the same manufacturer. Product manufacturer uniformity does not apply to raw materials, bulk materials, pipe, tube, fittings (except flanged and grooved types), sheet metal, wire, steel bar stock, welding rods, solder, fasteners, motors for dissimilar equipment units, and similar items used in the work, except as otherwise indicated. The Contractor shall provide products which are compatible within systems and other connected items. If Contractor is given option of selecting between two or more products for use on the Project, product selected shall be compatible with products previously selected, even if previously selected products were also options.

§ 3.4.6.2 The Contractor is responsible for providing products and construction methods compatible with products and construction methods of other contractors. If a dispute arises between the Contractor and other contractors over concurrently selectable but incompatible products, the Architect will determine which products shall be used.

§ 3.4.6.3 With respect to sitework materials, all products submitted for use and incorporated into the Project shall be on the Approved List of Materials and Equipment published by the NYSDOT Materials Bureau, most recent edition.

§ 3.4.6.4 When required, off-site storage shall be the responsibility of the Contractor. If materials are stored off site, the Contractor shall furnish proof of title by Owner and provide a certificate of insurance demonstrating adequate insurance coverage.

§ 3.4.6.5 The Contractor shall deliver all materials at such times as will ensure speedy and uninterrupted progress of the Work.

§ 3.4.6.6 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. The Owner reserves the right to object to Contractor's use of persons who appear unfit or not skilled in the tasks assigned to them. Should any disorderly, incompetent, unfit, unskilled or objectionable person be hired or employed by the Contractor, upon or about the Premises of the Owner, for any purpose or in any capacity, they shall, upon request of the Owner, be removed from the Project and not again be assigned thereon without the written permission of the Owner.

§ 3.4.6.7 Unless otherwise stated in the Contract Documents or the bidding requirements, the Contractor, within 10 days of receipt of the signed Contract, shall furnish in writing the Owner through the Construction Manager and Architect a list showing the name of the manufacturer proposed to be used for each of the products identified in the Specifications, and where applicable, the name of the installing Subcontractor. The Architect will promptly reply to the Contractor in writing stating whether or not the Owner or Architect, after due investigation, has reasonable objection to any such proposed manufacturer or installer. If adequate data on a proposed manufacturer or installer is not available, the Architect may state that action will be deferred until the Contractor provides additional data. Failure of the Owner or Architect to promptly reply shall constitute notice of no reasonable objection. Failure to object to a manufacturer or installer shall not constitute a waiver of the requirements of the Contract Documents, and products furnished by the listed manufacturer shall conform to such requirements.

§ 3.4.7 The Contractor warrants that it has good title to all materials used by it in, on or in connection with the Work. No materials or supplies shall be purchased by the Contractor or any of its Subcontractors that are subject to any

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chattel mortgage, conditional sale, or other agreement by which an interest is retained by the seller.

§ 3.4.8 The Contractor shall make every reasonable effort to avoid labor disputes and to insulate the Owner, Architect and Construction Manager from the effects of labor disputes should any arise. There shall be no strikes, picketing, work stoppages, slowdowns, or other disruptive activity at the Project for any reason by anyone employed or engaged by the Contractor to perform its portion of the Work. There shall be no lockout at the Project by the Contractor. The Contractor shall be responsible for providing the manpower required to proceed with the Work under any circumstance. For the purposes of this Section, every reasonable effort shall include, but not necessarily be limited to:

.1 make all necessary arrangements to reconcile, without delay, damage or cost to the Owner and without recourse to the Architect, the Construction Manager or the Owner, any conflict between its Agreement with the Owner and any agreements or regulations of any kind at any time in force among members or councils which regulate or distinguish what activities shall not be included in the work of any particular trade;

.2 requiring employees, Subcontractors, suppliers and others to use reserve gates which shall be established for the Project;

.3 rearranging work schedules for the Contractor's Work or the work of its Subcontractors; and

.4 including in Contractor's agreements with its Subcontractors the right to fully implement all provisions of this Section.

§ 3.4.8.5 In case the progress of the Work is effected by any undue delay in furnishing or installing any items or materials or equipment required pursuant to the Contract because of a conflict involving any such labor agreement or regulation, the Owner may require that other material or equipment of equal kind and quality be provided pursuant to a Change Order or Construction Change Directive but in no case shall the amount of such change be charged by the Contractor to the Owner as an additional cost to perform the Work.

§ 3.4.8.5.1 No extension of time shall be granted for delays caused by labor or material disputes.

§ 3.4.8.5.2 Should it become necessary to create a separate entrance for a Contractor involved in a dispute, all costs associated with creating that entrance shall be borne by the Contractor involved in the dispute. Such costs shall include, but not limited to signage, fencing, temporary roads and security personnel as deemed necessary by the Owner for the safety of the occupants of the site.

§ 3.4.8.6 The Contractor shall ensure that its Work continues uninterrupted during the pendency of a labor dispute.

§ 3.4.8.7 The Contractor shall be liable to the Owner for all damages suffered by the Owner occurring as a result of work stoppages, slowdowns, disputes or strikes arising from the labor practices of the Contractor or its Subcontractors, Suppliers or Sub-subcontractors.

§ 3.4.9 The Contractor and its Subcontractors employed upon the Work shall abide by and conform with all labor laws and to all other laws, ordinances, and legal requirements now or hereafter applicable to the Work and the construction area.

§ 3.4.10 The Contractor and its Subcontractors shall be responsible for protection of the Work, the work of Separate or other Contractors, and existing construction, both on and off the site, and in the event of damage, shall restore the same to the original condition at no additional cost to the Owner.

§ 3.4.11 If the Work is to be performed by trade unions, the Contractor shall, with the consent of the Owner and the Architect, which shall not be unreasonably withheld, make all necessary arrangements to reconcile, without delay, damage, or cost to the Owner, any conflict between the Contract Documents and any agreements or regulations of any kind, at any time in force among members or councils that regulate or distinguish what activities are included in the work of any particular trade.

§ 3.4.12 No new asbestos containing building materials shall be used in construction. No materials containing asbestos in any form shall be used in, on, or around the Owner's buildings**.**

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§ 3.4.13 Equivalents and Substitutions

§ 3.4.13.1 Equivalents. In the Specifications, one 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, it shall indicate in writing, and prior to award of the Contract, what kind, type, brand or manufacturer is included in the base bid for the specified item. The Contractor shall follow the submission requirements for equivalents as provided in the Project Manual. Any proposed equivalent shall not be purchased or installed by the Contractor without the Architect's review process having been completed and the product accepted by written notification.

§ 3.4.13.2 Substitutions. After the Contract has been executed, the Owner, Construction Manager and Architect will consider a formal request for the substitution of products in place of those specified only under conditions set forth in the Specifications.

§ 3.4.13.3 By making said requests in conformance with procedures established herein and elsewhere in the Project Manual, the Contractor: (1) represents that it has personally investigated the proposed substitute product and has determined that it is equal to or superior in all respects to that specified; (2) represents that the warranty for the substitution will be the same, or greater than, that applicable to the specified product; (3) certifies that the cost data is complete and includes all related costs under the Contract, including professional services necessary and/or required for the Architect or its consultants to implement said substitution and waives any and all claims for additional costs related to the substitution which subsequently become apparent; (4) represents that it will coordinate the installation of the accepted substitute, making all such changes to the Drawings effected by the change, including but not limited to the electrical, plumbing, site work and heating and ventilating Specifications as may be required for the Work to be complete in all respects; and (5) represents that it will reimburse the Owner for all additional costs billed by the Architect or its consultants for the review of the substitution request(s), any redesign of the Work of this Contractor or associated contractors, additional site visits related to the substitution request and for the work to prepare Change Orders or Construction Change Directives.

§ 3.4.13.4 Substitutions and alternates may be rejected without explanation and will be considered only under one or more of the following conditions:

1. required for compliance with interpretation of code requirements or insurance regulations then existing;
2. unavailability of specified products, through no fault of the Contractor;
3. subsequent information discloses inability of specified products to perform properly or to fit in designated space;
4. manufacturer/fabricator refuses to certify or guarantee performance of specified products as required;
5. when in the judgment of the Owner, a substitution would be substantially in the Owner's best interests, in terms of costs, time or other considerations; and
6. where the Contractor establishes that the substituted product is equal or better than the specified product in all respects.

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§ 3.5.1 The Contractor warrants to the Owner, Construction ~~Manager,~~ Manager and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants good title to all materials, supplies, and equipment installed or incorporated in the Work. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. ~~If required by the Construction Manager or~~ All warranties and guarantees specifically called for by the Contract Documents shall expressly run to the benefit of the Owner. If required by the Architect, the Contractor shall furnish satisfactory evidence (including reports of required tests) as to the kind and quality of materials and equipment. All materials and equipment shall be applied, installed, connected, erected, used, cleaned, and conditioned in accordance with instructions of the applicable supplier, except as otherwise provided in the Contract Documents. The Contractor shall perform the Work in strict accordance with the Contract Documents and best industry practices. The Contractor, at its expense, shall upon demand by the Owner, Construction Manager or Architect remove and replace materials not meeting specifications or materials failing to perform as represented or warranted by the manufacturer, regardless of whether incorporated into the Work. The Contractor shall promptly replace or correct any

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Work or materials that the Owner, Construction Manager or Architect rejects as failing to conform to the requirements of the Contract Documents. The foregoing warranty obligations shall survive completion or termination of the Contract, are not limited by the provisions of Article 12, and are in addition to and not in limitation of any other warranty, right or remedy set forth in the Contract Documents or otherwise prescribed by law.

§ 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.~~The Contractor warrants the Work and its performance to the Owner unconditionally. The Contractor shall perform all warranty obligations and responsibilities for the Work under the Contract Documents. The Contractor, at its own expense, shall remedy defects due to improper and/or defective workmanship or materials appearing within **two (2) years** of the Contractor completing the Work or such longer period as may be set forth in the Contract Documents ("Correction Period"), as further described in Article 12 of this Agreement. Upon completion of the Work, the Contractor shall assign and provide to the Owner all written warranties and guarantees from Subcontractors, suppliers, and material or equipment manufacturers. The Contractor shall fully cooperate with the Owner in the event the Owner pursues remedies under any warranties or guarantees assigned to the Owner. The Contractor acknowledges that its obligations to the Owner under this Section 3.5.2 and under Section 12.2 are joint and several with its Subcontractors, suppliers, vendors and manufacturers of all materials and equipment supplied on account of the Work. The Contractor is responsible for all harm caused by its failure to maintain equipment and materials installed through the Contractor's completion of its Work. The requirements of this Section 3.5 will continue notwithstanding termination of the Contractor for any reason. The foregoing warranty obligations are not limited by the provisions of Article 12, do not limit the Owner's assertion of a breach of warranty obligations following the three-year Correction Period, and are in addition to and not in limitation of any other warranty set forth in the Contract Documents or required by law.

§ 3.5.3 No warranties or guarantees by the Contractor will deprive the Owner of any cause of action, right, or remedy otherwise available for breach of any of the provisions of the Contract Documents. The Correction Period does not limit the time in which the Owner may pursue any such action, right, or remedy.

§ 3.5.3.1 The Contractor shall deliver to the Owner upon completion of all work under its Contract, its written guarantee made out to the Owner in a form acceptable to the Owner, guaranteeing (and he does so guarantee) all of the Work under the Contract to be free from faulty materials, and free from improper workmanship, and guarantees against injury from proper and usual wear and aging. This guarantee shall be made to cover (and does cover) a period of two (2) years from the date of Substantial Completion all work under the Contract, or for a longer period where so stipulated in the Contract Documents.

§ 3.5.4 All required maintenance shall be the Contractor's responsibility until the Owner has accepted the Project as complete, all required maintenance and user's manuals have been turned over to the Owner, and the Owner's designated personnel have been instructed in the maintenance and operation of all applicable materials. This maintenance shall include a complete turnover procedure at the time of completion, including complete cleaning, testing and adjustment. The Contractor shall keep records of all such maintenance performed as required by this Section, including work performed and times and dates on which it was performed. These records shall be turned over to the Owner at closeout.

§ 3.5.5 Neither final payment nor provision in the Contract Documents nor partial or entire occupancy of premises by Owner shall constitute an acceptance of Work not done in accordance with the Contract Documents or relieve the Contractor of liability in respect to any express warranties or responsibilities for faulty or defective materials or workmanship.

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~~The~~ Except as otherwise specified, the Contractor shall pay sales, consumer, use and similar taxes for the Work or portions thereof provided by the Contractor that are legally enacted when bids are received or negotiations concluded, whether or not yet effective or merely scheduled to go into effect.

§ 3.6.1 The Owner is exempt from payment of federal, state, and local sales and compensation use taxes on all supplies and materials incorporated into and becoming an integral component part of the structures, buildings, or real property pursuant to this Contract. Such taxes are therefore not to be included in the Contractor's bid or the Contract Sum. The Owner shall deliver to the Contractor the appropriate exemption certificate required to be supplied by the Owner, and the Contractor and its Subcontractors and materialmen shall be solely responsible for obtaining and delivering any and all exemption or other certificates and for furnishing a Contractor Exempt Purchase Certificate or other appropriate

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certificates to all persons, firms, or corporations from whom they purchase supplies, materials, and equipment for the performance of the Work.

§ 3.6.1.1 The Contractor's attention is called to fact that materials not actually incorporated into Work will not be exempt from payment of sales or compensating use taxes, and the Contractor and its Subcontractor shall be responsible for and shall pay any and all applicable taxes. This will apply to such things as:

.1 construction machinery and equipment including rentals or repair parts;
.2 The Contractor's office supplies;
.3 The Contractor's supplies, tools and miscellaneous equipment including forms, materials, and scaffolding (whether purchased or rented);
.4 temporary heat;
.5 telephone or electric services; and
.6 any other items purchased or rented by the Contractor for the Contractor's use in performing its Work and not incorporated into realty.

§ 3.6.2 The Contractor accepts full and exclusive liability for payment of any and all contributions, assessments or taxes for unemployment insurance or old age insurance, or annuities now or hereafter imposed by the government of the United States, or by the government of any city, county or state of United States, which are measured by salaries or other remuneration paid to persons employed by the Contractor or any Subcontractor for Work performed under this Contract.

§ 3.7.1 ~~Unless otherwise provided in the Contract Documents, the Owner, assisted by the Construction Manager, shall secure and pay for the building permit. The Contractor shall secure and pay for other permits, fees, licenses, and inspections by government agencies necessary for~~ The Contractor shall, as soon as practicable, furnish the Owner, Architect, and Construction Manager with copies or certificates of all permits, fees, licenses, and inspections necessary for the 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.~~Work, including, without limitation, all applicable building permits other than those required of the Owner under Sections 2.3.1. All inspection fees and other costs of such permits and licenses required to be obtained by the Contractor as may be imposed by any municipal or other entity shall be paid by the Contractor and shall not serve as the basis for any increase in the Contract Sum.

§ 3.7.2 The Contractor shall comply ~~with~~ with, and give notices required ~~by~~ by, applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work. If the Contractor fails to give such notices, it shall be liable for and shall indemnify and hold harmless (a) the Owner, its consultants, employees, officers and agents and (b) the Architect, Construction Manager and their consultants, employees, officers and agents against any resulting fines, penalties, judgments, or damages, including reasonable attorney's fees, imposed on or incurred by the parties indemnified hereunder.

§ 3.7.2.1 In accordance with New York State Labor Law Article 8, Section 220, subd. 3-a(a), the Contractor shall submit to the Owner within 30 days after issuance of Contractor's first payroll, and every 30 days thereafter, a transcript of the original payroll record, subscribed and affirmed as true under the penalties of perjury.

§ 3.7.2.2 The Contractor shall comply with all applicable New York State Department of Labor requirements, including the provision that every worker employed in performance of a public work contract shall be certified as having completed an OSHA 10-hour safety training course. The Contractor and its Subcontractors shall be solely responsible for compliance with this requirement with respect to their employees. The Contractor's or Subcontractor's failure to comply with this requirement shall not transfer or in any way impose the responsibility for worker safety upon the Owner or the Architect.

§ 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.~~all costs attributable to the correction thereof or related thereto, including reimbursement to the Owner for any additional services required of the Construction Manager or Architect, or both, as well as all fines and penalties, if any.

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§ 3.7.4 Concealed or Unknown Conditions. If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or ~~(2) unknown~~ (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~~ give prompt written notice to the Owner, Construction Manager, and the Architect ~~before conditions are disturbed~~ of such conditions before they are disturbed or affected work is performed and in no event later than ~~14~~ three (3) business days after first observance of the conditions. The Architect ~~and~~ or Construction Manager will promptly investigate such conditions and, if the Architect, in consultation with the Construction Manager, determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend ~~that~~ an equitable adjustment ~~be made~~ in the Contract Sum or Contract Time, or both. If the Architect, in consultation with the Construction Manager, determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner, Construction Manager, and ~~Contractor,~~ Contractor in writing, stating the reasons. If the ~~Owner or~~ Contractor disputes the Architect's determination or recommendation, ~~either party may submit a Claim as provided in Article 15.~~it may proceed as provided in Article 15. No adjustment in the Contract Time or Contract Sum will be permitted, however, in connection with a concealed or unknown condition that does not differ materially from those conditions disclosed or that reasonably should have been disclosed by the Contractor's (1) prior inspections, tests, and reviews, or (2) inspections, tests, and reviews the Contractor had the opportunity to make or should have performed in connection with the Project.

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.2 Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit, ,including the costs for bonds 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. The Contractor is not entitled to overhead and profit on unexpended allowance amounts or any portions thereof.

...

§ 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~~ Prior to starting the Work, the Contractor shall designate the Project Manager, Superintendent and other key individuals who shall be assigned to the Project through and including Final Completion. Such designations shall be in writing and provided to the Construction Manager, Architect and Owner and shall include the qualifications of such individuals. The Superintendent shall be in attendance at the Project site throughout the work, remain on the Project site not less than eight hours per day, five days per week, until termination of the Contract, unless the job is suspended, work is stopped by the Owner, or no work is scheduled. The Superintendent shall be approved by the Owner in its sole discretion. Said representatives shall be qualified in the type of work to be undertaken and shall not be changed during the course of construction without the prior written consent of the Owner. Should a representative leave the Contractor's employ, the Contractor shall promptly designate a new representative. The Owner shall have the right, at any time and in its sole discretion, to direct a change in the Contractor's representatives if their performance is unsatisfactory. In the event of such a demand, the Contractor shall within seven (7) days after notification thereof, replace said individual(s) with an individual(s) satisfactory to the Owner, in the Owner's sole discretion. If said replacement is disapproved, the Contractor may, at the Owner's option, be terminated for cause. The Superintendent shall represent the Contractor, and communications given to the ~~superintendent~~ Superintendent shall be as binding as if given to the Contractor. The Owner shall have no obligation to direct or monitor the Contractor's employees. All references herein to the Superintendent shall be taken to mean the Contractor's superintending staff. Each Subcontractor shall designate the Project Manager, Superintendent and other key individuals who shall be assigned to the Project. Important communications shall be confirmed in writing. Other communications shall be similarly confirmed on written request in each case. The Contractor's Superintendent shall attend all Project meetings, regardless of whether held prior to or following Substantial Completion of the Work.

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§ 3.9.2 The ~~Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect, through the Construction Manager, of the name and qualifications of a proposed superintendent. Within 14 days of receipt of the information, the Construction Manager may notify the Contractor, stating whether the Owner, the Construction Manager, or the Architect (1) has reasonable objection to the proposed superintendent or (2) require additional time for review. Failure of the Construction Manager to provide notice within the 14-day period shall constitute notice of no reasonable objection.~~Contractor shall provide, or otherwise see that, the Project Manager, or Superintendents or responsible workers of the Contractor and its major Subcontractors are equipped with cellular phones and radios. The Contractor shall provide the Owner, the Construction Manager, and the Architect with the number for each phone and worker.

§ 3.9.3 The ~~Contractor shall not employ a proposed superintendent to whom the Owner, Construction Manager, or Architect has made reasonable and timely objection. The Contractor shall not change the superintendent without the Owner's consent, which shall not unreasonably be withheld or delayed.~~Contractor's supervisory personnel, including Superintendents and their assistants, shall be versed in the English language. In the event the Contractor's supervisory personnel, Superintendents and their assistants are not versed in the English language, the Contractor shall employ the services of a full-time on-site interpreter to facilitate communications with such supervisory personnel.

§3.9.4 The Contractor shall not reduce or terminate supervision of the Work, nor change the superintendent without the prior written approval of the Owner.

§3.9.5 If, for any reason, the Contractor takes an action resulting in any of the changes noted in Subsection 3.9.4, the Owner may take remedial action to ensure continued progress of the Work, including the hiring of suitable supervisory personnel, and charge the Contractor all costs associated with these remedial actions including the costs of legal and additional construction management and architectural services.
§3.9.6 The Contractor shall furnish the Construction Manager, in writing the names, addresses and telephone number of the members of his organization who can be contacted in the event of an off-hours emergency at the building.

§3.9.6 The Contractor shall attend progress meetings with the Construction Manager and such other persons the owner may require. The progress meetings shall include all key personnel on the job, including the contractor and subcontractors, or other persons in charge of various phases of the work.

§3.9.7 Prior to the commencement of Work, the Contractor shall provide the Construction Manager and the Architect with:
.1 A written list of subcontractors, sub-subcontractors, suppliers and vendors with names, addresses, telephone numbers, and descriptions of the work they shall perform or furnish;
.2 The name, address and telephone number of the bonding company, banking and insurance company for the Contractor including the name, address and telephone number of each bonding company's primary contact representative for the Project;
.3 Detailed Subcontractor schedules indicating the approximate quantity of shop drawings, sequence, timing and man loading; and
.4 A cash flow projection for the life of the Project, including a schedule and graph showing the amount of Work projected to be completed each month or billing period and a dollar value for the anticipated billings each month or billing period. This shall be completed after an agreed upon schedule of values has been approved by the Construction Manage
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§ 3.10.1 The Contractor, ~~promptly~~ promptly, but in no event later than 14 days, after being awarded the Contract, shall prepare and submit for the Owner's and Architect's ~~information,~~ information and the Construction Manager's ~~use in developing the Project schedule,~~ approval a Contractor's construction schedule for the ~~Work. The~~ Work in electronic format with predecessor logic. The construction 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 Contractor's construction schedule shall provide for the orderly progression of the Work to ~~completion~~ completion, and shall not exceed time limits current under the Contract Documents. The Contractor's construction schedule shall be revised at appropriate intervals as required by the conditions of the Work and Project. ~~The Contractor shall cooperate with the Construction Manager in scheduling and performing the Contractor's Work to avoid conflict~~

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~~with, and as to cause no delay in, the work or activities of other Contractors, or the construction or operations of the Owner's own forces or Separate Contractors.~~

§ 3.10.2 ~~The Contractor, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, shall submit a submittal schedule for the Construction Manager's and Architect's approval. The Architect and Construction Manager's approval shall not be unreasonably delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Construction Manager and Architect reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, or fails to provide submittals in accordance with the approved submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.~~

§ 3.10.1.1 Time is of the essence for this Project. The Work shall be performed continuously and without interruption, so that all Work can be completed in the time set forth in the Contract Documents.

§ 3.10.1.2 The sequence of the Work shall be scheduled with the Owner so as to minimize interference with the Owner's use of existing structures, and the Owner's approval shall be obtained prior to starting of the Work.

§ 3.10.1.3 The Contractor shall conform to the most recent Project Schedule, and all Work shall be completed on or before the dates established in the Contract Documents. The Contractor shall monitor the progress of the Work for conformance with the requirements of the Project Schedule and shall promptly advise the Owner and Construction Manager of any delays or potential delays.

§ 3.10.2.1 The Construction Manager shall prepare, publish, and, from time-to-time, revise a master integrated Project Schedule based upon the construction schedules submitted by the various Prime Contractors. Failure by the Contractor to furnish any required schedule or schedule revision in a timely manner shall entitle the Construction Manager to prepare a schedule for the Contractor's Work, to which the Contractor shall be bound.

§ 3.10.2.2 The Contractor shall cooperate with the Construction Manager in scheduling and performing the Contractor's Work to avoid conflict, delay in or interference with the Work of other Contractors or the construction or operations of the Owner's own forces. The Owner shall have the right, without penalty, to direct the Contractor to delay, postpone or reschedule any portion of the Work that may interfere with or disrupt the operations of the Owner.

§ 3.10.3 The Contractor shall ~~participate with other Contractors, the Construction Manager, and the Owner in reviewing and coordinating all schedules for incorporation into the Project schedule that is prepared by the Construction Manager. The Contractor shall make revisions to the construction schedule and submittal schedule as deemed necessary by the Construction Manager to conform to the Project schedule.~~
conform to the most recent Project Schedule.

§ 3.10.4 ~~The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner, Construction Manager, and Architect, and incorporated into the approved Project schedule.~~In the event the Owner determines that the performance of the Work has not progressed to the level of completion required of the Contract Documents or that the Contractor has failed to maintain its construction schedule or the Project Schedule, the Owner shall have the right to order the Contractor to take corrective measures necessary to expedite the progress of construction including without limitations, additional shifts, overtime, additional manpower or equipment as well as other similar measures (hereinafter referred to collectively as "extraordinary measures"). Such extraordinary measures shall continue until the progress of Work complies with milestone and critical path dates set forth in the Contract Documents and the Project Schedule. The Contractor shall not be entitled to an adjustment in Contract Sum or Contract Time in connection with extraordinary measures required by the Owner.

§ 3.10.5 The Contractor shall prepare a submittal schedule, promptly after being awarded the Contract and thereafter update it as necessary to maintain a current submittal schedule, and shall submit the schedule(s) for the Construction Manager's and Architect's approval. The Architect and Construction Manager's approval shall not unreasonably be delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Construction Manager and Architect reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, 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.

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§ 3.10.6 The Contractor shall participate with other Contractors, the Construction Manager and Owner in reviewing and coordinating all schedules for incorporation into the Project Schedule that is prepared by the Construction Manager. The Contractor shall revise the construction schedule and submittal schedule as deemed necessary by the Construction Manager to conform to the Project Schedule and the Contract Documents.

§ 3.10.7 The Contractor shall perform the Work in general accordance with the most recent construction schedules submitted to the Owner, Construction Manager and Architect and incorporated into the approved Project Schedule. The Contractor shall monitor the progress of the Work for conformance with the requirements of its construction schedule and Project Schedule and shall promptly advise the Owner of any delays or potential delays affecting the critical path.

§ 3.10.8 If the Contractor fails to maintain the approved construction schedule or Project Schedule and meet all critical path dates for the Work, the Owner may request a recovery plan from the Contractor and reserves the right to withhold payment until such time as the Contractor submits a recovery plan. The recovery plan must show how the Work may plausibly be brought on schedule, including, as necessary, acceleration of the Work by means of overtime, additional crews, additional shifts, additional equipment or re-sequencing of the Work to achieve completion of the remaining critical path dates in the construction schedule or Project Schedule. The Contractor shall submit as part of its recovery plan: (i) a "resource loaded" schedule showing the Contractor's plan to deploy manpower per trade, per work area, per day, together with essential materials and equipment, and other resources necessary to timely accomplish the Work; and (ii) a two-week "look ahead" schedule identifying tasks to be accomplished within the coming two week period, the work areas and categories of work, and necessary manpower resources, together with other data necessary to demonstrate to the Owner the viability of the Contractor's recovery plan ("2 Week Plans"). The Contractor shall continue to submit 2 Week Plans until either the Contractor demonstrates that the Project Schedule has recovered from the unexcused delay, or the Owner notifies the Contractor in writing that further 2 Week Plans are no longer required. The cost of preparing and performing the recovery plan shall be borne solely by the Contractor. No approval or consent by the Owner of any plan for resequencing or acceleration of the Work submitted by Contractor shall constitute a waiver by Owner of any damages or losses which the Owner may suffer by reason of such resequencing or the failure of Contractor to meet the Substantial Completion Date or the final completion date.

§ 3.10.9 The Contractor specifically represents and warrants to the Owner that that the Contract Sum and the Contract Time contemplate compliance with all current, and reasonable foreseeable future, federal, state and local "Stay at Home," "Social Distancing" and related orders, regulations and guidance related to limiting the spread of COVID-19 disease (the "COVID Requirements"). Accordingly, the Contractor hereby waives any claim for an increase in the Contract Sum or an extension of the Contract Time on account of the COVID Requirements. The Contractor shall promptly notify the Owner of any COVID Requirements that would impact the Project.

§ 3.10.10 Due to the ongoing COVID-19 pandemic and the resulting uncertainty with regard to, among other things, (a) what restrictions, if any, will be applicable to construction activities due to federal, state or local orders, laws, regulations or rules related to the COVID-19 pandemic (including, without limitation, social distancing, PPE, cleaning and disinfection requirements) and (b) the duration of any restrictions imposed on construction activities, the Owner may modify the schedule set forth in the Contract Documents and the Project Schedule. Similarly, restrictions, if any, that will be or are applicable to construction activities due to federal, state or local orders, laws, regulations or rules related to the COVID-19 pandemic (including, without limitation, social distancing, PPE, cleaning and disinfection requirements) may cause the Owner to have the Work or the Project commence later than the date specified in the Contract Documents. The Contractor acknowledges and agrees that there should be no additional compensation paid for schedule modifications caused directly or indirectly by the COVID-19 pandemic. The Contractor further acknowledges and agrees that its sole remedy for any schedule modifications or delays caused directly or indirectly by the COVID-19 pandemic shall be an extension of the Contract Time, if warranted. The Contractor further acknowledges and agrees that it shall have on file and provide a copy to the Owner of its written COVID-19 business reopening plan, and it shall comply in all respects with such plan for the duration of the Project. The Contractor, not the Owner, shall be responsible for compliance with its COVID-19 business reopening plan and all safety requirements associated with COVID-19 protections for workers and the general public.

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~~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~~

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~~similar required submittals. These shall be in electronic form or paper copy, available to the Construction Manager, Architect, and Owner, and delivered to the Construction Manager for submittal to the Owner upon completion of the Work as a record of the Work as constructed.~~ **§ 3.11.1** The Contractor shall maintain at the site for the Owner one copy of the Drawings, Specifications, Addenda, Change Orders and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and one copy of approved Shop Drawings, Product Data, Samples and similar required submittals. These documents shall be available to the Architect and delivered to the Construction Manager for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

§ 3.11.2 The Contractor shall maintain at the site, and shall make available to the Owner, Construction Manager and Architect, one record copy of the Drawings (the "Record Drawings") in good order. The Record Drawings shall be prepared and updated during the prosecution of the Contractor's Work. The prints for Record Drawing use will be a set of black line prints provided by the Architect to the Contractor at the start of construction. The Contractor shall maintain said set in good condition and shall use colored pencils to mark up said set with "record information" in a legible manner to show: (i) deviations from the Drawings made during construction; (ii) details in the Work not previously shown; (iii) changes to existing conditions or existing conditions found to differ from those shown on any existing drawings; (iv) the actual installed position of equipment, piping, conduits, light switches, electric fixtures, circuiting, ducts, dampers, access panels, control valves, drains, openings, and stub-outs, etc.; (v) architectural and structural changes in the design; and (vi) such other information as either the Owner or Architect may reasonably request. At the completion of the work, the Contractor shall transfer all information on record drawings to reproducible drawings with new information clouded and noted. Such drawings shall be stamped with the Contractor's name and "AS-BUILT" in the lower righthand corner. The colored record drawing and the as-built reproducible drawing shall be forwarded to the Construction Manager for delivery to the Owner. Final payment and any retainage shall not be due and owing to Contractor until the Record and As-Built drawings receive the approval from the Architect and the Owner (and all other closeout requirements are met).

§ 3.11.3 The Contractor shall maintain all approved permit drawings in a manner so as to make them accessible to government inspectors and other authorized agencies having jurisdiction over the Project. All approved drawings shall be wrapped, marked and delivered to the Owner within 60 days of final completion of the Contractor's Work.
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§ 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. Each submittal shall bear written confirmation that the Contractor has satisfied its obligations under the Contract Documents with respect to the Contractor's review and approval of the submittal. The Contractor shall comply with the provisions and procedures for Shop Drawings, Product Data, and Samples set forth in Specifications Section 01 33 00, "Submittal Procedures."

§ 3.12.2 Product Data are illustrations, standard schedules, performance charts, instructions, brochures, diagrams, operating and maintenance procedures, and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

...

§ 3.12.4 Shop Drawings, Product Data, Samples, and similar submittals are not Contract Documents. Their purpose is to (1) demonstrate how the Contractor proposes to conform to the information given and the design concept expressed in the Contract ~~Documents~~ Documents, and (2) show a system or product's ability to meet applicable criteria for those portions of the Work for which the Contract Documents require submittals. Review by the Architect and Construction Manager is subject to the limitations of Sections 4.2.10 through 4.2.12. Informational submittals upon which the Construction Manager and Architect are not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Construction Manager or Architect without action.

§ 3.12.4.1 Shop drawings and product submittals for all site improvement, architectural, structural, mechanical, electrical and signal work shall be submitted to the Architect for its review. Refer to Contract (General, Supplementary and other conditions) Section on "SUBMITTALS" for more complete information.

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§ 3.12.4.2 The Contractor represents and warrants that all shop drawings shall be prepared by a person or entity possessing expertise and experience in the trade for which the shop drawing has been prepared and, if required by the Contract Documents or law, by a licensed professional engineer.

§ 3.12.5 The Contractor shall review for compliance with the Contract Documents, approve, and submit to the Architect, with copies to the Construction Manager, Shop Drawings, Product Data, Samples, and similar submittals required by the Contract Documents, in accordance with the Project submittal schedule approved by the Construction Manager and Architect or, in the absence of an approved Project submittal schedule, with reasonable promptness and in such sequence as to cause no delay in the Work or in the activities of other Contractors, Separate Contractors, or the Owner's own forces. The Contractor shall cooperate with the Construction Manager in the coordination of the Contractor's Shop Drawings, Product Data, Samples, and similar submittals with related documents submitted by other Contractors.

§ 3.12.5.1 No extension of time will be granted to the Contractor because of failure to have shop drawings, product data, and samples submitted in ample time to allow for review by the Architect or its consultants.

...

§ 3.12.7 The Contractor shall perform no portion of the Work for which the Contract Documents require submittal and review of Shop Drawings, Product Data, Samples, or similar submittals, until the respective submittal has been reviewed and approved by the Architect. Resubmission of rejected documents shall be performed within 10 calendar days, or sooner if required by the progress of construction. No claim for delay or cost shall be accepted as a result of rejected submittal documents. If the Architect is required to review the Contractor's submittal more than twice, the Contractor shall bear the cost and expense associated with such additional review as set forth in the Project Manual.

§ 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,~~ Samples or similar ~~submittals,~~ submittals unless the Contractor has specifically ~~notified~~ informed the Construction Manager and Architect in writing 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,~~ Samples or similar ~~submittals,~~ 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,~~ Samples or similar submittals, to revisions other than those requested by the Construction Manager and Architect on previous submittals. In the absence of such written notice, the Architect's approval of a resubmission shall not apply to such revisions. Resubmission of rejected documents shall be performed within ten (10) calendar days. No claim for delay or cost shall be accepted as a result of rejected documents.

§ 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,~~ sequences and procedures. The Contractor shall not be required to provide professional services in violation of applicable law.

§ 3.12.10.1 If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall be entitled to rely upon the adequacy and accuracy of the performance and design criteria provided in the Contract Documents. The Contractor shall cause such services or certifications to be provided by an appropriately licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings, and other submittals prepared by such professional. Shop Drawings, and other submittals related to the Work, designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The ~~Owner, the Architect, and the Construction Manager~~ 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

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criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review and approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. ~~The Construction Manager shall review submittals for sequencing, constructability, and coordination impacts on other Contractors.~~

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§ 3.12.11 The Architect's review of the Contractor's submittals will be limited to examination of an initial submittal and one resubmittal. The Owner is entitled to obtain reimbursement from the Contractor for amounts paid to the Architect for evaluation of additional resubmittals.

§ 3.13.1 The Owner shall not be liable to the Contractor, subcontractors of any tier, suppliers, their employees or anyone else with respect to the condition of the Project site. The Owner shall have the right to refuse admittance to the site to any agent or employee of the Contractor, its subcontractors of any tier, or its suppliers whose presence the Owner deems hostile to the Owner's interests. The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public ~~authorities,~~ authorities and the Contract Documents and shall not unreasonably encumber the site with materials or equipment. The use of the Owner's assets and property are extremely limited. The Contractor shall fully comprehend the intent of the Contract Documents pertaining to site and building limitations including, without limitation, Division 1 Specifications sections, the phased construction plan, and the site safety and logistics plan(s).

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§ 3.13.3 The Contractor shall perform and shall ensure that all Subcontractors and suppliers perform all Work in a manner that permits reasonable access to the Project site and to all adjacent premises. The Contractor shall not, and shall not permit any Subcontractor or supplier to, conduct the Work in a manner that disturbs or that could be reasonably anticipated to disturb operations and persons located in or on portions of the site not affected by the Work. The occupied portion of any of the Owner's buildings shall always comply with the minimum requirements necessary to maintain a certificate of occupancy.

§ 3.13.4 Construction Rules and Regulations. The following rules and regulations shall be observed and enforced by all Contractors in connection with all phases of the Work:

.1 In accordance with New York State law, smoking is prohibited anywhere on school property. Violators will be subject to arrest and/or fine of $1,000 per occurrence. No alcoholic beverages or controlled substances are permitted on school property, and persons under the influence of alcoholic beverages or controlled substances may not enter in or remain on school property.

.2 In accordance with the United States Gun-Free School Zones Act of 1994, no firearms are permitted within 1,000 feet of any school building, with certain limited exceptions as set forth therein. In addition to such limitations, no firearms shall be brought on school property without the Owner's express prior consent.

.3 Appropriate protective gear (hard hats, safety shoes, goggles, etc.) are to be worn as required by OSHA standards, the New York State Department of Labor, and prudent practice. Shirts are to be worn at all times. No short pants are permitted.

.4 Any person who uses inappropriate language, or who is disruptive to the school environment, will be banned from the site.

.5 The Contractor's personnel shall not converse with school employees, students and or local residents.

.6 All persons on the Project site will comply with all reasonable instructions regarding conduct and safety which are given by the Architect, the Construction Manager or the Owner's school administrators.

.7 All construction materials shall be stored in a safe and secure manner. No deliveries will be allowed during school bus drop off or pick up hours as determined by the Owner. All deliveries shall be scheduled and coordinated with the Construction Manager and the Owner's security department. Unexpected or uncoordinated deliveries may be turned away by the Owner or the Construction Manager at the discretion or necessity of the Owner. The Owner's enforcement of this provision shall not be construed by the Contractor or Subcontractor as the basis for a claim of delay in time or monetary damages alleged to have been incurred as a result of refusal of delivery.

.8 Use of the existing building facilities during construction is prohibited, specifically including toilet rooms, telephones and water fountains.

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.9 The Contractor's schedule shall allow for blackout dates during which no noisy Work will be allowed, as determined by the Construction Manager. The Contractor may consult the Owner's school calendar for all test and examination dates, but these dates are subject to change.

.10 To gain access to the Work, entrances and parking areas will be designated by the Owner for the Contractor's use. Any vehicles or trucks in non-designated areas may be towed at the Contractor's expense. Gates shall always be locked unless a worker is in attendance to prevent unauthorized entry.

.11 Should it become necessary to obtain access to the existing building during construction hours for measurements or other non-disruptive work, the Contractor shall be escorted by the Construction Manager.

.12 All persons must wear photo identification badges at all times while working at the site. Identification badges must be provided by the Contractor for its personnel, including subcontractors, consultants, visitors and others.

.13 No asbestos containing products are to be used anywhere on this Project.

.14 No lead containing products are to be used anywhere on this Project.

.15 Asbestos manifests showing the locations of all known asbestos bearing materials are available in each building, and should be consulted prior to the commencement of any work, including but not limited to demolition.

.16 Demolition is to occur only when the building is unoccupied. Dust partitions and negative air are to be installed prior to commencing demolition. The Contractor must obtain Construction Manager approval on dust partitions and negative air prior to commencing demolition work. Debris shall be removed by using an enclosed chute or similar sealed system.

.17 (a) Prior to the commencement of Work, the Contractor must submit construction plans, which show the location of dust particles, exhaust & fresh air fans and describe in detail the operation procedures during demolition and construction which may generate dust.

(b) All entrances to classrooms shall be sealed with at least 6 mil. polyethylene sheeting to prevent dust created by demolition and construction work from entering the classrooms. Entrances and egress to the work zone shall be covered with a triple flap 6 mil. polyethylene doorway to allow access to the area without the release of dust. The Contractor is, additionally, responsible for all debris and dust infiltrating adjacent and undisturbed areas of the building.

(c) Shut down and lock out all electrical and HVAC in the work area. Cut, cap, and seal all duct work where it enters the work area from another space. All duct work and conduit within the space shall be removed during demolition work.

(d) The Contractor shall install dust protection barriers and poly sheeting. There shall be no or minimum damage to adjacent surfaces. The Contractor is responsible to repair any damage to existing surfaces.

.18 Painting or other chemical applications shall be done in the Owner's existing building only when it is unoccupied. Storage of chemicals and painting shall be outside the Owner's existing or new structures, and shall follow manufacturer's storage guidelines.

.19 Oxygen or other gas containers shall be properly stored and secured per OSHA requirements, to the satisfaction of the Construction Manager. Failure to do so will result in a $250 back-charge, per occurrence.

.20 The Contractor is responsible for cleaning its own materials and debris. Failure to maintain a clean work site daily will result in others performing the work at the Owner's request, and the Contractor will be backcharged for the cleaning cost plus construction administration fees. This may be done without the typical 3-day notice to the Contractor.

.21 The Contractor must send a qualified representative, knowledgeable in the Project and authorized to make decisions on behalf of the Contractor, to every Project meeting.

.22 The Contractor shall cooperate with the Owner's school principal and custodial staff; however, if any additional work is requested the Contractor shall not proceed unless written approval is received from the Owner. The Contractor will not be compensated for any additional work performed without the Owner's prior written approval.

.23 Deliveries sent to the Project site will not be signed for or unloaded by the Owner. They will be directed to the construction site and if no employee is on site, the delivery will be rejected, at the Contractor's expense.

.24 The General Construction Contractor shall be responsible for managing dust and dirt. On the exterior, site shall be watered down frequently to prevent dust clouds from rising. Streets shall be maintained clean per the Construction Manager's request.

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.25 All hot tar roofing shall be installed after school hours or on weekends/holidays only. Kettles shall not be lit until all students have left the Owner's building.

.26 The Contractor shall submit a weekly work schedule indicating workdays, work hours and manpower allocation.

.27 No storage of materials will be permitted within the Owner's buildings at any time during construction. The Contractor must provide exterior storage containers when required. The Contractor shall be responsible for securing appropriate space for its material with the Construction Manager prior to delivery. Final location of storage containers shall be determined by the Owner and/or Construction Manager. If insufficient space is available on the site, the Contractor shall provide local off-site storage, storage containers, etc. at its own cost and expense. Should any of the material stored on-site obstruct the progress of any portion of the Work or the Project, this material shall be removed by the Contractor without reimbursement of cost, from place to place or from the premises, as the Construction Manager may direct.

.28 The General Construction Contractor shall be responsible for maintaining all appropriate site safety signage.

.29 The Contractor shall be responsible for protecting the Owner's property. All existing shrubs, trees, lawn fixtures, sculptures and miscellaneous equipment shall be protected at all times. Any removals or relocation of said objects, if allowed shall be as directed by the Owner in writing.

.30 The General Construction Contractor shall provide and service portable lavatories for the duration of construction as provided in the Contract Documents. Lavatories shall be serviced by the General Construction Contractor on a regular basis to maintain sanitary conditions.

.31 The General Construction Contractor shall protect all existing roofs during construction and shall be responsible for any damage to roofs during construction. The General Construction Contractor shall make all repairs to any damaged areas, as required by the manufacturer of the roof system.

.32 The General Construction Contractor shall be responsible for providing weather-proof protection over all rough openings, including windows.

.33 The Contractor shall be responsible for conducting pre-construction walk-throughs and videotaping existing conditions. The Contractor shall schedule a representative of both the Owner and the Construction Manager to be present at this taping. In the absence of this record, the Contractor shall be responsible for paying the costs associated with any and all repairs in an area where the Contractor is working or has worked, as may be deemed necessary by the Owner or the Construction Manager.

.34 Manufacturers Material Safety Data Sheets (MSDS) shall be available at the site for all products used in the Project.

.35 No weapons are permitted on the Owner's property by law.

.36 Neither the Contractor nor any person on its behalf shall, in any manner, engage in discrimination, intimidation or harassment of any person on the Project site.

.37 Proper attire is required for personal safety and clothing must not sexually explicit or contain messages of a vulgar nature, disrespectful of ethnic or religious groups or any group covered under the Dignity for All Students Act, or which promote the use of tobacco, alcohol or drugs.

.38 Only materials and equipment that are to be used directly in the Work shall be brought to and stored on the Project site by the Contractor. After equipment is no longer required for the Work, it shall be promptly removed from the Project site. Protection of construction materials and equipment stored at the Project site from weather, theft, damage, and all other adversity is solely the responsibility of the Contractor.

.39 The Contractor will ensure that the Work, at all times, is performed in a manner that affords reasonable access, both vehicular and pedestrian, to the site of the Work and all adjacent areas. The Work will be performed in such a manner that public areas adjacent to the site of the Work will be free from all debris, building materials and equipment likely to cause hazardous conditions. Without limitation of any other provision of the Contract Documents, the Contractor will use its best efforts to minimize any interference with the occupancy or beneficial use of (1) any areas and buildings adjacent to the site of the Work; or (2) the Owner's building in the event of partial occupancy, as more specifically described in Section 9.9.

.40 The Contractor is required to protect its own Work and work areas, preconstruction, during construction and post construction.

.41 During exterior renovation work, overhead protection shall be provided for any sidewalks or areas immediately beneath the work site or such areas shall be fenced off and provided with warning signs to prevent entry.

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.42 The Contractor shall exert utmost care and diligence when working in or near any existing buildings or site work. The absence of protection around such items shall not excuse the Contractor from its liability to provide protection. Any damage to existing buildings, sitework or facilities due to the actions or inactions of the Contractor shall be repaired by and charged to the Contractor.

.43 The Contractor shall be responsible for the removal and replacement of existing ceiling tiles and grid in areas of the existing building where its Work is required and new ceilings are not scheduled for installation. In the event that the existing ceilings are damaged and cannot be replaced to the satisfaction of the Owner, the responsible contractor shall be liable for the costs of replacing in kind, the existing ceilings with new tile and grid.

.44 The General Construction Contractor shall provide necessary and required security measures to adequately safeguard the construction site from vandalism and intrusion of unauthorized persons. The General Construction Contractor shall submit its means and methods of security to the Construction Manager for review and comment. The Project site must be secured 24 hours a day, 7 days a week including holidays. The General Construction Contractor's failure to secure the site as required by this paragraph will result in the Owner engaging the services of such necessary personnel so as to provide such security. No notice will be given the General Construction Contractor of the Owner's intention to engage such security services and all costs and expenses associated with the Owner's security of the site in this regard will be back charged to the General Construction Contractor. While the Owner may have security guards patrolling the project areas, the function of such security guards is not for the purpose of specifically guarding the Contractor's property or operations of work.

.45 The Contractor and any entity for which the Contractor is responsible shall not erect any sign on the Project site without the written consent of the Owner, which may be withheld in the sole discretion of the Owner.

.46 Without limitation of any other provision of the Contract Documents, the Contractor will comply with all reasonable rules and regulations promulgated by the Owner or Construction Manager in connection with the use and occupancy of the Project site and the buildings, as amended from time to time by the Owner or the Construction Manager.

§ 3.13.5 Only materials and equipment that are to be used directly in the Work shall be brought to and stored on the Project site by the Contractor. After equipment is no longer required for the Work, it shall be promptly removed from the Project site. Protection of construction materials and equipment stored at the Project site from weather, theft, damage, and all other adversity is solely the responsibility of the Contractor.

§ 3.13.6 The Contractor shall ensure that the Work, at all times, is performed in a manner that affords reasonable access, both vehicular and pedestrian, to the site of the Work and all adjacent areas. The Work will be performed in such a manner that public areas adjacent to the site of the Work will be free from all debris, building materials and equipment likely to cause hazardous conditions. Without limitation of any other provision of the Contract Documents, the Contractor shall use its best efforts to minimize any interference with the occupancy or beneficial use of (1) any areas and buildings adjacent to the site of the Work; or (2) the building in the event of partial occupancy, as more specifically described in Paragraph 9.9.

§ 3.13.7 The Contractor shall not permit any workers to use any existing facilities at the Project site, including without limitation, lavatories and toilets. To gain access to the Work, entrances and parking areas will be designated by the Owner for the Contractor's use. Without limitation of any other provision of the Contract Documents, the Contractor will comply with all reasonable rules and regulations promulgated by the Owner in connection with the use and occupancy of the Project site and the Owner's building(s), as amended from time to time by the Owner.

§ 3.13.8 Construction areas that are under the control of the Contractor and therefore not occupied by the Owner's staff or students shall be separated from occupied areas. Provisions shall be made to prevent the passage of dust and contaminants into occupied parts of the Owner's building(s). Periodic inspection and repairs of the containment barriers must be made to prevent exposure to dust or contaminants. Gypsum board must be used in exit ways or other areas that require fire rated separation. 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.

§ 3.13.9 Prior to starting Work, the Contractor shall submit a written report to the Owner, Construction Manager and Architect identifying existing damage to roads, walks, lawns, buildings and other property to be affected by this Contract. Failure to submit the report shall render the Contractor responsible for existing damage. The Contractor may

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request and schedule an inspection with the Owner, Construction Manager and Architect prior to submittal of the report. The Contractor shall obtain the consent of adjoining property owners regarding temporary easements of any other manner of physical encroachment.

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§ 3.14.3 The word "new" used herein shall mean Work which has been or is to be installed under the terms of the Contract for this Project. The word "existing" used herein shall mean existing conditions previous to the award of a Contract for this Project. In order to eliminate cutting and patching as much as possible, the Contractor shall, during the progress of its Work, provide and set proper sleeves, inserts, and other fixtures as required for its new Work and shall give proper and detailed instructions to others where the 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. The Contractor shall refer to the Specifications for proper cutting and patching requirements. Any costs caused by defective or ill-timed Work of the Contractor shall be borne by the Contractor. Cutting and patching of any Work shall be made in such a manner as to not breach any provisions of any guaranty or warranty on existing work left in place or any guaranty or warranty required for the Contractor's new Work. Patching of work shall match existing adjacent surfaces and patchwork shall be disguised completely to hide any trace of patching. All new Work on existing roofs must be provided by a company specializing in performing the Work and approved by the existing roofing material manufacturer. It shall be the responsibility of the Contractor performing the cutting and patching to maintain any existing roofing warranty.

§ 3.14.4 Only trades persons skilled and experienced in cutting and patching shall perform such work.

§ 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. On a daily basis, the Contractor shall clean the areas in which it has performed work and shall remove all waste, materials, rubbish, its tools, construction equipment, machinery and surplus materials. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, ~~machinery,~~ machinery and surplus materials from and about the Project. The Contractor shall completely clean the site of the Work, removing and disposing of all construction-related debris and rubbish, and cleaning all Work-related stains, spots, marks, dirt, mortar smears, plaster smears, paint smears, caulking smears, and other foreign materials from exposed surfaces inside and outside the Owner's buildings and within the Project limit lines.

§ 3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner, or Construction Manager with the Owner's approval, may do so and the Owner shall be entitled to reimbursement from the Contractor. At its option, the Owner may deduct the cost of clean-up pursuant to this Section 3.15.2 from any payments otherwise due to the Contractor pursuant to this Contract.

...

The Contractor shall provide the Owner, Construction Manager, and Architect with access to the Work in preparation and progress wherever located. Federal, state, and local agencies with jurisdiction over the Project shall at all times have access to the Work wherever it is in preparation or progress. The Contractor shall provide for such access so that such agencies may perform their functions. The Contactor shall also allow access for all required tests and inspections.

...

§ 3.18.1 To the fullest extent permitted by law, the Contractor ~~shall~~ shall, and cause its Subcontractors to, defend, indemnify and hold harmless the Owner, Construction Manager, Architect, ~~Construction Manager's and Architect's consultants, and~~ and their consultants, officers, directors, board members, agents and employees of any of them (collectively, "Indemnitees," individually, "Indemnitee") from and against all losses, damages, liabilities, actions, causes of action, claims, demands, fines, penalties, judgments, costs (including but not limited to attorneys' fees and expenses incurred in connection therewith and in the enforcement of this indemnification), charges, expenses and demands of whatever kind in connection with or arising from or out of (a) any negligent, willful or wrongful act or omission resulting in bodily injury (including death), personal injury or property damage (including loss of use) by the Contractor, its Subcontractors, Suppliers, their respective officers, employees, servants, agents, suppliers, invitees, successors and assigns (collectively, "Contractor Parties," and individually, "Contractor Party"), (b) performance of or

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failure to perform the Work or any breach of this Contract or infringement of any patent right by any Contractor Party, or (c) any statutorily imposed liability for injury to employees or failure to comply with any laws or regulations affecting the Work, regardless of whether or not such claim, damage, loss or expense is caused in part by a party indemnified hereunder. Nothing contained herein shall be construed to obligate the Contractor to indemnify, defend, and hold an Indemnitee harmless for claims caused solely by the Indemnitee's negligent acts or omissions.

The Contractor agrees to include the following indemnity provision in each and every contract it enters into with a Subcontractor, and to require that Subcontractor to include such provision in each contract it enters into with any lower tier Sub-subcontractor: "To the fullest extent permitted by law, sub-contractor shall defend, indemnify and hold harmless the Contractor, Owner, Owner's Consultants, Construction Manager's and Architect's consultants, and each of their respective representatives, board members, employees, directors, officers, and agents, from and against any and all claims, suits, actions, damages, losses, fines, penalties, costs, charges and expenses, including but not limited to attorneys' ~~fees,~~ fees and the costs of any proceeding, arising out of or resulting from ~~performance of the Work, provided that such claim, damage, loss,~~ any performance of or failure to perform the Work, acts or omissions of the Subcontractor, its lower-tier Sub-subcontractors, and others for whom the Subcontractor is responsible, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or economic losses or damages, damage to or destruction of property, and for environmental damage, or to injury to or destruction of tangible property ~~(other than the Work itself),~~ and nuisance, 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~~ acts or omissions or a breach of contract of the a Subcontractor, a Sub-Subcontractor to Subcontractor, and any person or entity directly or indirectly employed by them or any person or entity for whose acts they may be liable, regardless of whether or not such claim, damage, ~~loss,~~ 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.~~hereunder."

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§ 3.18.3 The Contractor's defense and indemnity obligations under this Section 3.18 shall specifically include all claims and judgments that may be made against the Indemnitees under the Labor Law of the State of New York, and similar laws of other state or governmental bodies having jurisdiction; and further, against claims and judgments arising from violation of public ordinances and requirements of governing execution of the Work.

§ 3.18.4 Claims by Governmental Authorities. To the fullest extent permitted by law, the Contractor shall defend, indemnify, and hold harmless the Indemnitees from and against claims, damages, losses, and expenses arising out of any claims made against the Indemnitees under the laws of federal, state, or other governmental bodies having jurisdiction over the Work, including but not limited to claims arising from violation of public ordinances and other requirements of governing authorities, due to the Contractor's method of execution of the Work or implementation of any of the Contractor's other obligations under the Contract Documents.

§ 3.18.5 Liens and Security Interests. To the fullest extent permitted by law, the Contractor shall defend, indemnify, and hold harmless the Indemnitees from and against any actions, law suits, or other proceedings brought against Indemnitees as a result of liens or security interests of any type arising from the Work and filed against the Work, the site of any of the Work, the Project site and any improvements thereon, payments due the Contractor, or any portion of the property of any of the Indemnitees.

§ 3.18.6 Intellectual Property. The Contractor shall defend, indemnify, and hold harmless the Indemnitees from and against any claim or demand for patent fees, royalties, or otherwise on account of any invention, machine, article, process, copyright, or arrangement that may be used by the Contractor in performing the Work, other than as to any of the foregoing expressly called for in the Contract Documents to be so used. In the event of any injunction or legal action regarding such claim or demand that results in stopping the Work in whole or part, the Owner shall have the right to direct the Contractor to change the manner of performance of the Work to avoid such stoppage, all cost and expense occasioned thereby to be borne solely by the Contractor.

§ 3.18.7 The Contractor shall further indemnify and hold harmless the Indemnitees from and against any costs and expenses (including reasonable attorneys' fees) incurred by any of the Indemnitees in enforcing any of the Contractor's defense, indemnity, and hold harmless obligations under this Section 3.18 or as may otherwise be provided elsewhere in the Contract.

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§ 3.18.8 Subject to Section 3.18.9, all obligations of the Contractor under this Section 3.18 to defend the Indemnitees are obligations to provide full defenses at the sole cost and expense of the Contractor, regardless of any alleged culpability on the part of any Indemnitee or any ultimate determination of relative shares of liability of any Indemnitee or limitation of the Contractor's indemnity obligations in light of such determination.

§ 3.18.9 To the extent any defense, indemnity, or hold harmless obligations under this Section 3.18 are made void or otherwise impaired by any law controlling their construction (including but not limited to laws limiting such obligations to the extent of the portion of damages caused by an indemnitor), such obligations shall be deemed to conform to the greatest rights to defense and indemnity permitted by such law (including but not limited to New York State General Obligations Law Section 5-322.1).

§ 3.18.10 All provisions of this Section 3.18 shall survive termination of the Agreement or final completion. No obligations under this Section 3.18 shall be construed to negate, abridge, or reduce other rights or obligations to defense and indemnity, including but not limited to common law indemnity, which would otherwise exist as to a party or person described in this Section 3.18.

§ 3.19 Existing Features and Underground Data

§ 3.19.1 The location of existing features shown on plans is intended for general information only. The Contractor, alone, is responsible for accurate determination of the location of all structures, and shall not be entitled to any increase in the Contract Sum or Contract Time due to difficulties or distances encountered in the Work, which should have been foreseeable thereby.

§ 3.19.2 The locations, depths and data as to underground conditions have been obtained from records, surface indications and data furnished by others. Information furnished is solely for the convenience of the Contractor without any warranty, expressed or implied as to its accuracy or completeness. The Contractor shall make no claim against the Owner, Construction Manager or Architect with respect to the accuracy or completeness of such information if it is erroneous, or if the conditions found at the time of construction are different from those as indicated.

§ 3.20 Construction Stresses

§ 3.20.1 The Contractor shall be solely responsible for the conditions which develop during construction and in the event any structure is dislocated, over strained, or damaged so as to affect its usefulness, the Contractor shall be solely responsible. The Contractor shall, at its own expense, take whatever steps necessary to strengthen, relocate, or rebuild the structure to meet all applicable requirements.

§ 3.20.2 The Contractor is responsible for restoration or repair of utilities, private property, buildings, pavement, walkways, roads, or other property damaged by its activities under this Agreement.

§ 3.21 Training and Instructions

§ 3.21.1 Upon Substantial Completion of the Work, the Contractor shall orient and instruct personnel of the Owner designated by it in the operation and maintenance of all equipment furnished by the Contractor and shall turn over all pertinent literature and operational manuals relating to the equipment. The format for organizing, binding, and delivering such manuals shall be as described in the Specifications.

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§ 4.1.1.1 Architect's Consultants: All firms listed on the title sheet of the Specifications, except for the Owner and Construction Manager, are Consultants employed by the Architect, and are agents of the Architect and will make observation of their respective branches of the Work. All changes in the Work must be processed through the Architect. Consultants shall not order extra Work or make changes in the Work.

§ 4.1.3 ~~Duties, responsibilities, and limitations of authority of the Construction Manager and Architect as set forth in the Contract Documents shall not be restricted, modified, or extended without written consent of the Owner, Construction Manager, Architect, and Contractor. Consent shall not be unreasonably withheld.~~The Architect is the interpreter of the technical requirements of the Drawings and Specifications with regard to questions the Contractor may have concerning its obligations under either. The Architect shall render such interpretations with such promptness as necessary to maintain progress of the Work.

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§ 4.2.1 The Construction Manager and Architect will provide administration of the Contract as described in the Contract Documents and will be the Owner's representatives during construction until the date the Architect issues the final Certificate for ~~Payment.~~ Payment and during the correction period described in Article 12. The Construction Manager and Architect ~~will~~ have the authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

...

§ 4.2.4 The Construction Manager will schedule and coordinate the activities of the Contractor and other Multiple Prime Contractors in accordance with the latest approved Project ~~schedule.~~Schedule. The Contractor shall participate with other Contractors and the Construction Manager, the Architect and Owner in reviewing their construction schedules when directed to do so. The Contractor shall make any revisions to the construction schedule deemed necessary by the Owner or Construction Manager. The approved construction schedules shall be integrated into the Project Schedule and constitute the schedules to be used by the Contractor, other Contractors, the Architect, the Construction Manager and the Owner until subsequently revised.

§ 4.2.4.1 The Contractor shall assume full responsibility for the execution of its Work in the allotted duration times set forth in the Project Schedule.

§ 4.2.5 The Construction Manager, except to the extent required by Section 4.2.4, and Architect will not have control over, or 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, except as provided in Section 3.3.1, and neither will be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. Neither the Construction Manager nor the Architect will have control over or charge ~~of,~~ of or be responsible for acts or omissions ~~of,~~ of the Contractor, Subcontractors, or their agents or employees, or of any other persons or entities performing portions of the Work.

§ 4.2.6 ~~Communications.~~ ~~The Owner shall communicate with the Contractor and the Construction Manager's consultants through the Construction Manager~~ **Communications Facilitating Contract Administration.** Except as otherwise provided in the Contract Documents or when direct communications have been specially authorized, the Owner and Contractor shall endeavor to communicate with each other through the Construction Manager, and shall contemporaneously provide the same communications to the Architect about matters arising out of or relating to the Contract Documents. ~~The Owner and Construction Manager shall include the Architect in all communications that relate to or affect the Architect's services or professional responsibilities. The Owner shall promptly notify the Architect of the substance of any direct communications between the Owner and the Construction Manager otherwise relating to the Project.~~ Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and material suppliers shall be through the Contractor. Communications by and with other Multiple Prime Contractors shall be through the Construction ~~Manager.~~ Manager and shall be contemporaneously provided to the Architect if those communications are about matters arising out of or related to the Contract Documents. Communications by and with the Owner's own forces ~~and Separate Contractors~~ shall be through the Owner.~~The Contract Documents may specify other communication protocols.~~

§ 4.2.7 The Construction Manager and Architect will review and certify all Applications for Payment by the Contractor, in accordance with the provisions of Article 9. The Construction Manager will assemble each of the Contractor's Applications for Payment with similar applications from other Prime Contractors into a Project Application and Certificate for Payment, all of which will be submitted to the Architect with the Construction Manager's recommendations as to certifications in whole or part by the Architect.

§ 4.2.8 The Architect and Construction Manager have authority to reject Work that does not conform to the Contract ~~Documents,~~ Documents and will notify each other about the rejection. The Construction Manager shall determine in general whether the Work of the Contractor is being performed in accordance with the requirements of the Contract Documents and notify the Owner, Contractor and Architect of defects and deficiencies in the Work. Whenever the Construction Manager considers it necessary or advisable, the Construction Manager will have authority to require

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additional inspection or testing of the Work in accordance with Sections ~~13.4.2 and 13.4.3,~~ 13.5.2 and 13.5.3, upon written authorization of the Owner, whether or not ~~the~~ such Work is fabricated, installed or completed. The foregoing authority of the Construction Manager will be subject to the provisions of Sections 4.2.18 through 4.2.20 inclusive, with respect to interpretations and decisions of the Architect. However, neither the Architect's nor the Construction Manager's authority to act under this Section 4.2.8 nor a decision made by either of them in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect or the Construction Manager to the Contractor, Subcontractors, material and equipment suppliers, their agents or employees, or other persons performing any of the Work.

§ 4.2.9 ~~Utilizing the submittal schedule provided by the Contractor, the Construction Manager shall prepare, and revise as necessary, a Project submittal schedule incorporating information from other Contractors, the Owner, Owner's consultants, Owner's Separate Contractors and vendors, governmental agencies, and participants in the Project under the management of the Construction Manager. The Project submittal schedule and any revisions shall be submitted to the Architect for approval.~~The Construction Manager will receive and promptly transmit to the Architect all submittals from the Contractor such as Shop Drawings, Product Data and Samples. The Construction Manager's actions will be taken in accordance with the Project submittal schedule approved by the Architect or, in the absence of an approved Project submittal schedule, with reasonable promptness while allowing sufficient time to permit adequate review by the Architect.

§ 4.2.10 The ~~Construction Manager will receive and promptly review for conformance with the submittal requirements of the Contract Documents, all submittals from the Contractor such as Shop Drawings, Product Data, and Samples. Where there are other Contractors, the Construction Manager will also check and coordinate the information contained within each submittal received from the Contractor and other Contractors, and transmit to the Architect those recommended for approval. By submitting Shop Drawings, Product Data, Samples, and similar submittals, the Construction Manager represents to the Owner and Architect that the Construction Manager has reviewed and recommended them for approval. The Construction Manager's actions~~ 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 ~~Project~~ submittal schedule approved by the Architect or, in the absence of an approved ~~Project~~ submittal schedule, with reasonable promptness while allowing sufficient time ~~to permit adequate review by the Architect.~~in the Architect's professional judgment to permit adequate review. Upon the Architect's completed review, the Architect shall transmit its submittal review to the Construction Manager.

§ 4.2.11 ~~The Architect will review and approve, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data, and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. Upon the Architect's completed review, the Architect shall transmit its submittal review to the Construction Manager.~~Review of the Contractor's submittals by the Architect is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The 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, unless otherwise specifically stated by the Architect, 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.

§ 4.2.11.1 The Architect's review of Contractor's submittals shall be limited to an initial submittal and one (1) resubmittal. If the Architect is required to review additional submittals because the initial submittal and resubmittal failed to conform to the information given and the design concept expressed in the Contract Documents, the amount of compensation paid to the Architect by the Owner for additional services shall be deducted from the payments to the Contractor.

§ 4.2.11.2 The review will not be considered complete until an "ACTION" stamp or other written notice to that effect has been received by the Contractor.

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§ 4.2.12 ~~Review of the Contractor's submittals by the Construction Manager and Architect is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Construction Manager and Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5, and 3.12. The Construction Manager and Architect's review shall not constitute approval of safety precautions or of any construction means, methods, techniques, sequences, or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.~~The Construction Manager will prepare Change Orders and Construction Change Directives.

§ 4.2.13 The Construction Manager ~~will prepare Change Orders and Construction Change Directives.~~and the Architect will take appropriate action on Change Orders or Construction Change Directives in accordance with Article 7 and the Architect will have authority to order minor changes in the Work as provided in Section 7.4. The Architect, in consultation with the Construction Manager, will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

§ 4.2.14 ~~The Construction Manager and the Architect will take appropriate action on Change Orders or Construction Change Directives in accordance with Article 7, and the Architect will have authority to order minor changes in the Work as provided in Section 7.4. The Architect, in consultation with the Construction Manager, will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.~~Utilizing the documents provided by the Contractor, the Construction Manager will maintain at the site for the Owner one copy of all Contract Documents, approved Shop Drawings, Product Data, Samples and similar required submittals, in good order and marked currently to record all changes and selections made during construction. These will be available to the Architect and the Contractor, and will be delivered to the Owner upon completion of the Project.

§ 4.2.15 ~~Utilizing the documents provided by the Contractor, the Construction Manager will maintain at the site for the Owner one copy of all Contract Documents, approved Shop Drawings, Product Data, Samples, and similar required submittals, in good order and marked currently to record all changes and selections made during construction. These will be available to the Architect and the Contractor, and will be delivered to the Owner upon completion of the Project.~~The Construction Manager will assist the Architect in conducting inspections to determine the dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion in conjunction with the Architect pursuant to Section 9.8; and receive and forward to the Owner written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10. The Construction Manager will forward to the Architect a final Application and Certificate for Payment or final Project Application and Project Certificate for Payment upon the Contractor's compliance with the requirements of the Contract Documents.

§ 4.2.16 ~~The Construction Manager will assist the Architect in conducting inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion in conjunction with the Architect pursuant to Section 9.8; and receive and forward to the Owner written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10. The Construction Manager will forward to the Architect a final Application and Certificate for Payment or final Project Application and Project Certificate for Payment upon the Contractor's compliance with the requirements of~~ 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 duties, responsibilities and limitations of authority of such project representatives shall be as set forth in an exhibit to be incorporated in the Contract Documents.

§ 4.2.17 ~~If the Owner and Architect agree, the Architect will provide one or more Project representatives to assist in carrying out the Architect's responsibilities at the site. The Owner shall notify the Construction Manager of any change in the duties, responsibilities and limitations of authority of the Project representatives.~~The Architect will interpret and decide matters concerning performance under, and requirements of the Contract Documents on written request of the Construction Manager, Owner or Contractor through the Construction Manager. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness.

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

§ 4.2.18.1 If Work is described or indicated in a manner which makes it impossible to carry out the requirements of the Contract Documents, or should discrepancies appear among the Contract Documents, the Contractor shall request interpretation before proceeding with the Work. If the Contractor fails to make such a request, no excuse will be entertained for failure to carry out the Work of the Contract Documents. Should a conflict occur in or between Contract Documents, the Contractor is deemed to have included in the Contract Sum the more expensive manner of doing the Work.

§ 4.2.19 ~~Interpretations and decisions of the Architect will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either, and will not be liable for results of interpretations or decisions so rendered in good faith.~~The Architect's decisions, after consultation with the Owner, on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.

§ 4.2.20 The ~~Architect's decisions on matters relating to aesthetic effect will be final if consistent with the intent expressed in the Contract Documents.~~Construction Manager will receive and review requests for information from the Contractor, and forward each request for information to the Architect, with the Construction Manager's recommendation. The Architect will review and respond in writing to the Construction Manager to requests for information about the Contract Documents. The Construction Manager's recommendation and the Architect's response to each request will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

~~**§ 4.2.21** The Construction Manager will receive and review requests for information from the Contractor, and forward each request for information to the Architect, with the Construction Manager's recommendation. The Architect will review and respond in writing, through the Construction Manager, to requests for information about the Contract Documents. The Construction Manager's recommendation and the Architect's response to each request will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information.~~

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§ 5.2.1 Unless otherwise stated in the Contract ~~Documents, the Contractor, as soon as practicable~~ Documents or the bidding requirements, the Contractor, within ten (10) days after award of the Contract, shall ~~notify the Construction Manager,~~ furnish in writing to the Construction Manager for review by the Owner, Construction Manager and ~~Architect, of the persons or entities proposed for each principal portion of the Work, including~~ Architect the names of persons or entities (including those who are to furnish materials or equipment fabricated to a special ~~design. Within 14 days of receipt of the information, the Construction Manager may notify the Contractor~~ design) proposed for each principal portion of the Work. The Construction Manager may reply within 14 days to the Contractor in writing stating (1) whether the Owner, the Construction Manager or the Architect ~~(1)~~ has reasonable objection to any such proposed person or entity or, (2) that the Construction Manager, Architect or Owner requires additional time for review. Failure of the Construction ~~Manager to provide notice~~ Manager, Owner, or Architect to reply within the 14-day period shall constitute notice of no reasonable objection.

§ 5.2.1.1 In no case shall payments be made on the Contract until a complete list of Subcontractors has been submitted by the Contractor to the Construction Manager for review by the Owner, Construction Manager, and Architect. Such list shall not be considered complete if the Owner, Construction Manager or Architect has any reasonable objection to any name listed thereon. Such list shall be submitted and resubmitted if necessary until it is considered complete.

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§ 5.2.1.2 Subcontractors will not be acceptable unless, when requested by the Owner, Architect or Construction Manager, evidence is furnished by the Contractor that the proposed Subcontractor has satisfactorily completed similar subcontracts as contemplated under this Contract, and has the necessary experience, personnel, equipment, plant and financial ability to complete the proposed subcontract in accordance with the intent of the Contract Documents and the Project Schedule. As verification of financial ability, the Owner reserves the right to request and receive up to five (5) years of financial statements, bank references, bond/insurance company references and all other information required to assess financial ability.

...

§ 5.2.3 If the Owner, Construction Manager or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner, Construction Manager ~~or Architect has no reasonable objection. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.~~and Architect have no objection.

...

§ 5.2.5 The Maintenance of the Project Schedule is critical. The Contractor shall award subcontracts to entities capable of performing in a manner that will maintain the Project Schedule and require its subcontractors to complete their work in accordance with the Project Schedule.

§ 5.2.6 Upon written request from or on behalf of the Owner, the Contractor shall provide to the Owner executed, unredacted copies of all subcontracts, purchase orders or other agreements relating to the Work.

~~By appropriate written agreement, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work, that the Contractor, by these Contract Documents, assumes toward the Owner, Construction Manager and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner, Construction Manager and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies, and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.~~§ 5.3.1 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 responsibility for safety of the Subcontractor's Work, which the Contractor, by these Documents, assumes toward the Owner, Construction Manager and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner, Construction Manager and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors. Each subcontract shall contain provision for execution of lien waivers in form and substance acceptable to the Owner as a condition of payment by the Contractor. The

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Contractor shall require each Subcontractor to (1) inspect the Project site, including all relevant surfaces and job conditions, before beginning the Work and (2) accept or cite necessary corrections in the Project site, including surfaces or job conditions, before beginning the Work.

§ 5.3.2 The Contractor shall promptly notify the Owner and Architect of any material defaults by any Subcontractor or whether it has terminated its agreement with any of its Subcontractors for any reason.

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.1 assignment is effective only after termination of the Contract by the Owner ~~for cause pursuant to Section 14.2~~ pursuant to Article 14 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor; and

...

§ 5.4.2 Upon such assignment, if the Work has been suspended for more than ~~30 days,~~ 60 days, through no fault of the Subcontractor, 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.~~

...

§ 6.1.1 The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, ~~and with Separate Contractors retained under Conditions of the Contract substantially similar to those of this Contract, including those provisions of the Conditions of the Contract~~ which include persons or entities under separate contracts not administered by the Construction Manager, and to award other contracts in connection with other portions of the Project or other construction or operations on the site under Conditions of the Contract identical or substantially similar to these including those portions related to insurance and waiver of subrogation.

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§ 6.1.4 The Contractor accepts assignment of, and liability for, all purchase orders and other agreements for procurement of materials and equipment that are identified as part of the Contract Documents. The Contractor shall be responsible for such pre-purchased items, if any, as if the Contractor were the original purchaser. The Contract Sum includes, without limitation, all costs and expenses in connection with delivery, storage, insurance, installation and testing of items covered in any assigned purchase orders or agreements. All warranty and correction of the Work obligations under the Contract Documents shall also apply to any pre-purchased items, unless the Contract Documents specifically provide otherwise.

§ 6.2.1 The Contractor ~~shall afford the Owner's own forces, Separate Contractors, Construction Manager and other Contractors~~ recognizes and acknowledges that the Project is governed by and subject to the provisions of New York State General Municipal Law §101, et seq., governing the award of contracts on public improvement projects. As such, the Contractor recognizes and acknowledges that other Contractors or Separate Contractors will be performing work on the project in conjunction with it. As such, the Contractor shall afford the Owner's own forces and other Contractors or 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.

§ 6.2.1.1 The Contractor shall not commit or permit any act which will interfere with the performance of the work of any other Contractor or Separate Contractor performing work on the Project. If the Contractor sustains any damage through any act or omission of Separate or other Contractors having a contract with the Owner for the performance of work upon the site or of work which may be necessary to be performed for the proper execution of the work to be performed hereunder, or through any act or omission of a subcontractor of such Separate or other Contractor, the Contractor shall promptly notify the Owner and the Construction Manager of such damage

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§ 6.2.1.2 The Contractor agrees to defend and indemnify Owner, Architect, Construction Manager, Consultants and Sub-consultants, from all claims made against any of them arising out of the Contractor's acts or omissions or the acts or omissions of any Subcontractor of the Contractor which have caused damage to the Owner, Architect, Construction Manager, Separate Contractor or other Contractor on the Project. The Owner's right to indemnification hereunder shall in no way be diminished, waived or discharged, or by the exercise of any other remedy provided for by the contract or by law. Further, the Owner shall withhold from the Contractor's Contract Sum an amount sufficient to cover such damage and all expenses and costs associated with the damage sustained.

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§ 6.2.2.1 The Contractor shall promptly correct discrepancies or defects in its Work identified by Separate Contractors as affecting proper execution and results of the work of the Separate Contractors.

§ 6.2.3 The Contractor shall reimburse the Owner for costs the Owner incurs, including costs that are payable to a Separate Contractors or to other Contractors, because of the Contractor's delays, improperly timed activities or defective construction. ~~The Owner shall be responsible to the Contractor for costs the Contractor incurs because of delays, improperly timed activities, damage to the Work or defective construction by the Owner's own forces, Separate Contractors, or other Contractors.~~

§ 6.2.4 The Contractor shall promptly remedy damage that the Contractor wrongfully causes to completed or partially completed construction, or to property of the Owner, Separate Contractors, or other Contractors as provided in Section ~~10.2.5.~~10.2.5 or elsewhere in the Contract Documents.

...

§ 6.2.6 Should the Contractor or its Subcontractors cause damage to the work or property of any Separate Contractor or other Multiple Prime Contractor, the Contractor shall, upon due notice, promptly attempt to settle by agreement or otherwise resolve the dispute with the Separate Contractor or other Multiple Prime Contractor. If such separate trade contractor or other Multiple Prime Contractor sues or makes any other claim against the Owner, Construction Manager, or Architect on account of any damage alleged to have been caused by the Contractor or its Subcontractors, the Contractor shall defend, indemnify, and hold harmless the Owner, Construction Manager, and Architect against such claim or proceedings at the Contractor's own expense. The Owner's right to indemnification hereunder shall in no way be diminished, waived or discharged, or by the exercise of any other remedy provided for by the Contract Documents or by law. Further, the Owner shall be entitled to withhold from the Contractor's Contract Sum an amount sufficient to cover such damage and all expenses and costs associated with the damage sustained.

§ 6.2.7 When the Work of the Contractor or its Subcontractors overlap or dovetail with that of other Contractors, materials shall be delivered and operations conducted to carry on the Work continuously, in an efficient, workmanlike manner.

§ 6.2.8 In case of interference between the operations of the Contractor and other Contractors, the Construction Manager will be the sole judge of the rights of each contractor and shall have the authority to decide in what manner the Work may proceed, and in all cases its decision shall be final. Any decision as to the method and times of conducting the Work or the use of space as required in this paragraph shall not be basis of any claim for delay or damages by the Contractor.

§ 6.2.9 The Contractor, including its Subcontractors, shall keep itself informed of the progress of other Contractors and shall notify the Architect or the Construction Manager immediately in writing of lack of progress on the part of other Contractors where such delay will interfere with its own operations. Failure of the Contractor to keep informed of the work progressing on the Project and failure to give notice of lack of progress by others shall be construed as acceptance by the Contractor of the status of the work as being satisfactory for proper coordination with the Contractor's Work.

§ 6.2.10 Delays or oversights on the part of the Contractor or its Subcontractors in getting any or all of the Work done in the proper way, thereby causing cutting, removing and replacing Work already in place, shall not be the basis for a claim for extra compensation or additional time.

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§ 6.2.11 The Contractor shall promptly correct discrepancies or defects in its Work which have been identified by Separate Contractor(s) or other Contractor(s) as affecting proper execution and results of the work of such other Contractor(s).

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§ 7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, only by Change Order, Construction Change Directive or field order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents. The Owner may in its sole discretion reduce the scope of the Contractor's Contract with or without any specific reasons therefor.

§ 7.1.2 A Change Order shall be based upon agreement among the Owner, Construction Manager, Architect and ~~Contractor. A~~ Contractor; a Construction Change Directive requires agreement by the Owner, Construction Manager and Architect and may or may not be agreed to by the ~~Contractor. An~~ Contractor; a field order for a minor change in the Work may be issued by the Architect alone.

§ 7.1.2.1 Field orders are an interpretation of the Drawings or Specifications which order minor changes in the Contractor's work which will not result in an increase or decrease in the Contract Sum. From time to time, the Architect may issue field orders to the Contractor. The work included in such field order shall be performed by the Contractor at no additional cost to the Owner and shall not form the basis for a claim for an extension of the Contract Time. Hence, the Contractor shall perform the work included in field orders so as to cause no delay to its Work and/or the work of other Contractors or Separate Contractors engaged by the Owner in connection with the Project. All field orders shall be given to the Contractor and the Construction Manager by the Architect in writing.

§ 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,~~ Documents, and the Contractor shall proceed promptly, unless otherwise provided in the Change Order, Construction Change ~~Directive, or~~ Directive or field order for a minor change in the Work. Additional work performed without authorization of a Change Order will not entitle the Contractor to an increase in the Contract Sum or an extension of the Contract Time. No course of conduct or prior dealings between the parties, nor express or implied acceptance of alterations or additions to the Work, and no claim that the Owner has been unjustly enriched by any alteration or addition to the Work, whether or not there is, in fact, any unjust enrichment of the Owner, shall be the basis for any claim to an increase in any amounts due under the Contract Documents or a change in any time period provided for in the Contract Documents. **No amount shall be payable by the Owner to the Contractor for performance of work without a written and fully executed Change Order.**

§ 7.1.4 Costs for changes in the Work shall not be allowed in excess of usual rentals charged in the area where the Project is located for similar equipment of like size and condition, including costs of necessary supplies and repairs for operating equipment on site in connection with other work unless its use incurs actual and additional costs to Contractor. If equipment not on Site is required for change in work only, cost of transporting equipment to and from Site will be allowed.

§ 7.1.5 When the Owner or Architect (in association with the Construction Manager) request that the Contractor perform work which is not included in the Contract Drawings or Specifications and which will result in additional cost to the Owner, the Architect shall request that the Contractor submit its proposal for performing such additional work. The Contractor shall submit its proposal to the Construction Manager and Architect for review. The Contractor's proposal shall include a complete itemization of the costs associated with performing its work including labor and materials. All proposals for any work that a Contractor, its Subcontractor(s) or Sub-subcontractor(s) perform in connection with additional work shall be properly itemized and supported by sufficient substantiating data, including but not limited to material descriptions, material quantities, material unit prices, labor trade listings, labor hour quantities, labor trade rates, equipment descriptions and equipment rates with a percentage allowance for overhead and profit as set forth in Section 7.3.11.

§ 7.1.6 Overtime, when specifically authorized by the Owner in writing, and not as a corrective measure by the Contractor to expedite the progress of construction as ordered by the Owner based on its determination that the performance of the Work has not progressed to the level of completion required by the approved Schedule, shall be

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paid for by the Owner on the basis of premium payment only, plus the cost of insurance and taxes based on the premium payment period. Overhead and profit will not be paid by the Owner for overtime.

§ 7.1.7 Costs to which overhead and profit is to be applied shall be determined in accordance with Section 7.3.4. The allowable overhead and profit mark-up shall include, but not be limited to, the following:

.1 home office expense;
.2 field office expense;
.3 supervision;
.4 project management & estimation; and
.5 small tools & equipment.

§ 7.1.8 Unit prices shall be submitted in the Bid Form for various items as set forth therein, and are subject to approval and acceptance by the Owner. The Owner reserves the right to reject any unit price which is unreasonable or unbalanced, as compared with prevailing costs, or as compared with the unit prices submitted by other bidders for the Project. Approved unit prices quoted shall include all profit, overhead, bonds, insurance, labor, materials, equipment, tools, applicable taxes necessary to complete the work item and shall apply to all work added or work deducted.
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~~A Change Order is a written instrument prepared by the Construction Manager and signed by the Owner, Construction Manager, Architect, and Contractor, stating their agreement upon all of the following:~~**§ 7.2.1** A Change Order is a written instrument prepared by the Construction Manager and signed by the Owner, Construction Manager, Architect, and Contractor, stating their agreement upon all of the following:

...

.3 The extent of the adjustment, if any, in the Contract Time.

§ 7.2.1.4 Changes in the Work involving additional Work or deletion of Work effecting an addition to or subtraction from the Contract Sum shall not be made until the Contractor submits to the Architect and Construction Manager the cost of the added or deleted Work with a complete and detailed listing of all Subcontractors involved, all materials, labor, overhead and profit and an appropriate Change Order has been issued. If requested, the Contractor shall submit detailed quotations for Subcontractors and material suppliers. Changes in the Work when not involving additions or deletions from the Contract Sum shall not be made until the Architect has issued an appropriate Change Order. All Change Orders must have the approval of the Owner, Construction Manager and Architect in writing.

§ 7.2.2 Methods used in determining adjustments to the Contract Sum may include those listed in Section 7.3.3.

§ 7.2.3 Agreement on any Change Order shall constitute a final settlement of all Claims and other matters related to the change in Work that is the subject of the Change Order, including, but not limited to, all direct and indirect costs associated with such change (including, without limitation, all costs of associated delay, interference, acceleration, inefficiency, overhead, as well as costs of material, labor and supervision), and any and all adjustments to the Contract Sum and the Contract Time. Payment of a Change Order shall constitute accord and satisfaction of all Claims of the Contractor in connection with the change or changes to the Contract addressed by the Change Order and it is understood and agreed that a signed Change Order shall be the complete and fully integrated agreement for all related costs and there are no oral or written understandings, reservations, representations or agreements, directly or indirectly, connected with the Change Order and not affirmatively stated on the signed Change Order. In the event a Change Order increases the Contract Sum, the Contractor shall include the Work covered by such Change Orders in Applications for Payments as if such Work were originally part of the Contract Documents.

§ 7.2.4 Upon the Contractor's completion of the Change Order work, and prior to payment being made to the Contractor for such work, the Contractor shall provide the Owner with the following information:

.1 Certified payrolls itemizing the labor actually utilized in connection with the Change Order work; and
.2 Copies of invoices from its Subcontractors supplying work in connection with the Change Order work.

§ 7.2.5 Additional work performed without authorization of a Change Order will not entitle the Contractor to an increase in the Contract Sum or an extension of the Contract Time, except at provided in Section 7.3, and except in the case of an emergency as provided in Section 10.4.

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§ 7.3.2 A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order. In the event the Contractor and the Owner cannot agree on the sum by which the Contract Sum or the amount of time by which the Contract Time is to be increased or reduced based upon changes to the scope of the Work as described in Article 7, the Architect or Construction Manager shall issue a Construction Change Directive reflecting the addition to or reduction of the scope of the Contractor's Contract.

§ 7.3.2.1 If the Owner and the Contractor cannot agree that the requested Work properly forms the basis for a Change Order or on the sum by which the Contract is to be increased or reduced based upon changes to the scope of Work, the Architect or Construction Manager shall issue a Construction Change Directive signed by the Owner, Construction Manager and Architect reflecting the addition to, or removal of, the scope of Work and the Contractor shall (a) in the case of additional work to be performed by the Contractor, perform such additional work in an expeditious manner so as not to delay the Work of the Contractor or other Contractors working at the site an keep records of its performance of such additional work, and (b) in the case of work to be removed from the scope of the Contractor's Work, refrain from taking any steps in connection with the work associated with the deduction of the Contractor's Work. The Construction Change Directive shall include: (a) a description of the work being added or removed from the Contractor's scope of Work; (b) the amount the Owner has determined to be the cost associated with the additional work (as those costs are identified and limited in Section 7.3.4) or removal of the scope of the Contractor's Contract until the Owner and the Contractor agree upon the increase or decrease in the Contractor's Contract Sum, or until a claim filed by the Contractor has been determined; and (c) the extent to which the Contract Time will be adjusted as a result of the change in the scope of Work. Any claims must be filed in accordance with the requirements set forth in Article 15 of these General Conditions. Failure to timely file any claim in accordance with requirements set forth therein shall constitute a waiver of such claim.

§ 7.3.3 If the Construction Change Directive provides for a method for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

.2 Unit prices stated in the Contract Documents or subsequently agreed ~~upon;~~upon (unit prices shall be deemed to include all costs and expenses for the Contractor's changed Work, including costs of general conditions, insurance/bonds and overhead and profit attributable to the change);

.3 Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage ~~fee;~~ fee subject to the limitations of Section 7.3.11; or

.4 As provided in Section ~~7.3.4.~~7.3.4 subject to the limitations of Section 7.3.11.

§ 7.3.4 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Construction Manager shall determine the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit as set forth in ~~the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount.~~ Section 7.3.11. In such case, and also under Section ~~7.3.3.3,~~ 7.3.11, the Contractor shall keep and present, in such form as the Construction Manager may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.4 shall be limited to the following:

.1 ~~Costs of labor, including applicable payroll taxes,~~ Actual costs of labor, including social security, old age and unemployment insurance, fringe benefits required by agreement or custom, ~~workers' compensation insurance, and other employee costs approved by the Construction Manager and Architect;~~and workers compensation insurance;

.2 ~~Costs~~ Actual costs of materials, supplies, and equipment, including cost of transportation, whether incorporated or consumed;

.3 ~~Rental~~ Actual rental costs of machinery and equipment, exclusive of hand tools, ~~whether rented from the Contractor or others;~~rented from third parties; and

.4 ~~Costs~~ Actual 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.~~use or similar taxes related to the additional work.

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§ 7.3.6 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Construction Manager of the Contractor's agreement or disagreement with (1) the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum ~~or Contract Time.~~or Contract Time or (2) the amount of the increase or decrease in the Contract Sum and Contract Time as provided in Section 7.3.2.1. Any claims must be filed in accordance with the requirements set forth in Article 15 of these General Conditions. Failure to timely file any claim in accordance with requirements set forth therein shall constitute a waiver of such claim.

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§ 7.3.8 ~~The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Construction Manager and Architect.~~ When the Owner or Architect request that portions of the Contractor's Work originally included in the Drawings or Specifications be deleted and which will result in a reduction of the Contract Sum, the Architect shall request that the Contractor submit its proposal for deleting the scope of such Work from the Contract. The Contractor's proposal shall include a complete itemization of the costs associated with deducting such Work including labor, materials, overhead and profit. The Contractor shall not be entitled to retain its overhead or profit for such work nor shall any of its Subcontractors which were to perform the work being deducted from the Contractor's scope of Work. Additionally, the Contractor shall reflect the reduced cost of premiums on bonds which are to be supplied herein as a result of such change. 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.
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§ 7.3.11 The limit for the combined overhead and profit included in the total cost to the Owner shall be based on the following schedule:

- **.1** For the Contractor, for Work performed by the Contractor's own forces, fifteen percent (15%) of the direct cost for labor and materials.
- **.2** For the Contractor, for Work performed by the Contractor's Subcontractor, maximum of five percent (5%) of the amount due the Subcontractor for the Contractor's overhead and profit. For the Subcontractor, for Work performed by the Subcontractor's own forces, ten percent (10%) of the direct cost for labor and materials. The total combined overhead and profit for a change order shall be limited to 15% of the direct cost regardless if the Work is performed by the Contractor or the Subcontractor.
- **.3** The markup on any part of the Work a Subcontractor subcontracts will be limited to one overhead and profit figure, in addition to the Contractor's overhead and profit markup. The Subcontractor and Sub-subcontractor may divide the overhead and profit amount as they agree upon.
- **.4** Cost to which overhead and profit is to be applied shall be determined in accordance with Section 7.3.7.
- **.5** In order to facilitate checking of quotations for extras and credits, all proposals, except those so minor that their propriety can be seen by inspection, shall be accompanied by a complete itemization of costs including labor, materials, and subcontracts. Labor and material shall be itemized in the manner prescribed above. Where major cost items are subcontracts, they shall be itemized also.
- **.6** Overhead and profit mark-up shall include, but not be limited to, the following:
  - **.1** home office expense;
  - **.2** field office expense;
  - **.3** supervision;
  - **.4** project management & estimation;
  - **.5** small tools & equipment;
  - **.6** research & layout;
  - **.7** inspections & permits;
  - **.8** material handing;
  - **.9** record drawings: and
  - **.10** safety and cleanup

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§ 8.1.2 The date of commencement of the Work is the date established in the Agreement. The date shall not be postponed or extended by the failure to act of the Contractor or persons or entities for whom the Contractor is responsible to act.

§ 8.1.3 The date of Substantial Completion is the date certified by the Architect in accordance with Section 9.8. The date of final completion is the date certified by the Architect and Owner in accordance with Section 9.10. Unless otherwise agreed in writing by the Owner, the Contractor agrees that Final Completion shall occur not more than 30 calendar days after the date of Substantial Completion.
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§ 8.1.5 Work remaining to be completed after Substantial Completion, shall be limited to items which can ordinarily be completed within a thirty (30) day period (one month) before final payment is made.

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§ 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.~~Owner and the Owner's approval of such insurance. The date of commencement of the Work shall not be changed by the effective date of such insurance. The Work can not start until the required insurance and bonds are provided and the Contract has been executed.

§ 8.2.3 The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion and final completion within the Contract Time. The Contractor agrees that the Work shall be prosecuted regularly, diligently and uninterruptedly at such rate of progress as will ensure full completion thereof within the Contract Time specified and, further, to provide such protections as may be necessary. It is expressly understood and agreed by the Contractor that the time for the substantial and final completion of the Work is a reasonable time for its completion, taking into consideration, among other things, the average climatic range and usual weather conditions prevailing in the Project's locality.

§ 8.2.4 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 (including the equitable value of the changes), or any disputes or disagreements as to the Work or extra work.

§ 8.2.5 If the Contractor does not achieve the completion date and milestone date for each work item in the Contract, a milestone or critical path date reflected on the Project Schedule, or the date of Substantial Completion for the Work or any part thereof, the Contractor shall be responsible for all direct and consequential damages to Owner arising from any delay of the Contractor, its Sub-Contractors, Sub-subcontractors, and suppliers, in performing or completing the Work in accordance with the time requirements of the Contract, by way of example but not as a limitation: (i) additional architectural and construction management fees related to extended services; (ii) additional project management costs; (iii) financing costs (including delayed or lost State Building Aid); (vi) temporary storage and dislocation costs; and (v) costs related to the disruption or relocation of the Owner's personnel, academic and other departments, including equipment and machinery, affected by the Owner's inability to timely occupy the Project facilities. The Owner shall have the right to deduct the amount of the foregoing damages from any payment then due or thereafter becoming due from the Owner to the Contractor. If the Contract Sum is exhausted, the Contractor shall pay such amounts to the Owner on demand.

§ 8.2.6 In the event the Contractor fails to complete all Work under this Contract by said scheduled dates, the Contractor will not be permitted to perform any work during normal school hours without the express written authorization of the Owner. Such Work shall only be performed after school hours, Saturdays, Sundays, holidays or periods when school is unoccupied at no additional cost of any kind to the Owner. In addition to damages incurred by the Owner in connection with the Contractor's delay, the Contractor shall be liable for all costs incurred by the Owner to provide staff, Architect and Construction Manager personnel as required to make facility accessible by Contractor and perform inspections during such off hours.

§ 8.2.7 The Contractor understands that in order to meet the requirements of the Project schedule, including intermittent milestone and critical path dates set forth in the Contract Documents, it may be required to work its

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personnel and equipment overtime on regular work days and on Saturdays and holidays, the cost of which is included in the Contract Sum. If the Owner specifically approves in writing reimbursement for overtime, the Contractor shall be paid by the Owner on the basis of the premium payment.

§ 8.2.8 The Owner shall have the right at any time to modify the Project Schedule; to suspend, delay or accelerate, in whole or in part, the commencement or execution of the Work or any potion thereof or to vary the sequence thereof; and to prescribe the time, order and priority of the various portions of the Work, and all other matters relating to the scheduling of the Work. The Contractor shall not be entitled to additional compensation for any such decisions made by the Owner.

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§ 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~~ as a result of: Acts of God (such as tornado, flood, hurricane, pandemics [see exception below], epidemics, etc. making performance temporarily impossible); the negligent acts or omissions of the Owner, Architect, Construction Manager, ~~or an employee of any of them, or of the Owner's own forces, Separate Contractors, or other Contractors; (2) by changes ordered in the Work; (3) by labor disputes, fire, unusual delay in deliveries, unavoidable casualties, adverse weather conditions documented in accordance with Section 15.1.6.2, or other causes beyond the Contractor's control; (4) by delay authorized by the Owner pending mediation and binding dispute resolution; or (5) by other causes that the Contractor asserts and the Architect, based on the recommendation of the Construction Manager, determines justify delay, then the Contract Time shall be extended for such reasonable time as the Architect may determine.~~other Contractors, or their agents or employees; strikes, lockouts or other labor disturbances (not arising from the labor practices of Contractor or its Subcontractors, Suppliers, or Sub-subcontractors to comply with their obligations arising under the Contract); unusually adverse weather conditions; freight embargoes (provided that delays by the Contractor, its Subcontractors, Sub-subcontractors or Suppliers do not constitute an excusable cause of delay); changes in the work to be performed by the Contractor (not caused or resulting from the failure of the Contractor or its Subcontractors, Suppliers or Sub-subcontractors); or changes to laws or regulations after the effective date of the Contract, provided the Contractor has used all reasonable efforts to mitigate the foregoing causes; then the Contractor shall be entitled to a day for day extension of the Contract Time for the established delay to the critical path of the Work subject to the provisions of this Article 8 and Article 15. All other delays of the Project, including but not limited to, Architect review and/or approval of shop drawings or other submittals, requests for information, clarifications, samples, and change orders; Owner schedule; Architect certification of payment; payment by Owner of Contractor's Application for Payment; coordination among the Multiple Prime Contractors; unavailability of materials and/or equipment; surveying/testing; closeout, etc. are deemed to be foreseeable and contemplated and, therefore, shall not form the basis for a claim for an extension of time or additional compensation by the Contractor. Conditions caused by the COVID-19 pandemic or epidemic, or any variants of the disease, shall not form the basis of an excuse under this section. No additional time or compensation shall be provided to the Contractor for COVID-19 or any variant.

§ 8.3.1.1 The Contractor further acknowledges and agrees that adjustments in the Contract Time will be permitted for a delay only to the extent such delay (1) is not caused or could not have been anticipated by the Contractor, (2) could not be limited or avoided by the Contractor's timely notice to the Owner of the delay or reasonable likelihood that a delay will occur, and (3) is of a duration of more than one (1) day.

§ 8.3.1.2 The Contractor's inability to secure sufficient personnel for the performance of the Work shall not constitute a basis for an extension of time. The Contractor shall not be entitled to an extension of time if the Architect or Construction Manager stops the Work due to the existence of or reasonable suspicion of a deficiency in the Work.

§ 8.3.1.3 An extension of the Contract Time, if requested by the Contractor, shall only be considered after the Contractor has made reasonable effort to recover the lost time. An extension, or extensions, of time may be granted subject to the provisions of this Article 8, but only after written application therefore by the Contractor. An extension of time shall be only for the number of days of delay which 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 Construction Manager or Architect.

§ 8.3.1.4 All requests for additional time shall be made in writing, delivered to the Construction Manager within five (5) days from the time when the circumstance with potential for delay becomes reasonably known to the Contractor, supported by documentation which demonstrates to the Architect and Construction Manager's satisfaction that the

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critical path of the Work has been significantly altered by the delays to the activities in question, and that the Project schedule cannot be maintained by re-ordering other activities within the Project at no cost. This request shall also contain, at a minimum, the following information: (1) date of start of delay; (2) specific cause of delay; (3) effect of delay on construction progress; and (4) date of termination of delay. Upon receipt of the Contractor's request for an extension of time, the Owner will ascertain the facts and extent of the delay, and may, in its sole discretion, extend the time for completion of the Contractor's Work when in its judgment such an extension is justified. The Owner's determination will be final and binding in any litigation commenced by the Contractor against the Owner which arises out of the Owner's denial of an extension of time to the Contractor. Any approval of an extension of the Contractor's time to complete its Work shall be memorialized by written change order, signed by the Owner, Contractor, Architect and Construction Manager. When the Owner determines that the Contractor will be granted an extension of time, such extension shall be computed in accordance with the following: for each day of delay in the completion of its Work, the Contractor shall be allowed one day of additional time to complete its Contract. The Contractor shall not be entitled to receive a separate extension of time for each one of several causes of delay operating concurrently; rather, only the actual period of delay as determined by the Owner or its Architect may be allowed.

§ 8.3.1.5 Failure of the Contractor to give written notice as required by Section 8.3.1.4 or to strictly comply with the requirements of Article 8 shall be deemed conclusively to be a waiver and release of such claim, and such notice shall be a condition precedent to the Contractor's right to make a claim for any claim arising out of, under or in connection with the Contractor or the performance of the Work.

§ 8.3.2 ~~Claims relating to time shall be made in accordance with applicable provisions of Article 15.~~Notwithstanding anything to the contrary in the Contract Documents, an extension in the Contract Time, to the extent permitted and justified under Section 8.3.1, shall be the sole remedy of the Contractor for, and the Contractor waives its right to any claim for damages to the extent arising from, any (1) delay in the commencement, prosecution, or completion of the Work; (2) hindrance or obstruction in the performance of the Work; (3) loss of productivity or acceleration; or (4) other claims for disruption, interference, inefficiencies, impedance, hindrance, acceleration, resequencing, schedule impacts, lack of timeliness by the Owner or its consultants, and lack of coordination, errors or omissions in the design of the Project, cumulative impact of multiple change orders, delay and other impacts (collective referred to herein as "Delay(s)"). In no event shall the Contractor be entitled to any compensation or recovery of any damages in connection with any Delay, including, but not limited to, delay costs, loss of productivity or efficiency, lost profits, extended jobsite general conditions and home office overhead, consequential damages, lost opportunity costs, impact damages, or other similar remuneration. The Owner's exercise of any of its rights or remedies under the Contract Documents (including, but not limited to, ordering changes in the Work, or directing suspension, rescheduling or correction of the Work), regardless of the extent or frequency of the Owner's exercise of such rights or remedies, shall not be construed as interference, hindrance or obstruction with the Contractor's performance of the Work and shall not entitle the Contractor to any additional compensation. The Contractor shall include a no-damages-for-delay clause in all subcontracts for the performance of the Work.

§ 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.~~Delays that affect the scheduled completion of the Work and are attributable to interference between Multiple Prime Contractors, Separate Contractors, Subcontractors, suppliers, utility companies or municipalities, shall be compensated solely by the granting of an extension of time to the Contractor by the Owner to complete the Work without charges to the Owner. The parties acknowledge that the Contract Time takes into account the time necessary for review of shop drawings, design errors or omissions, coordination amongst Contractors, change orders, delays incurred by seasonal limitations and other administrative processing by all parties involved and are not compensatory. The Contractor agrees that it has included in its Bid prices the additional cost of doing work under this Contract caused by interference of other Prime Contractors, Separate Contractors, Subcontractors, etc. and the other non-compensatory Delays described above.

§ 8.3.4 When the Contract Time has been extended, as provided under Section 8.3, such extension of time shall not be considered as justifying extra compensation to the Contractor for administrative costs, home office, estimating, extended general conditions or other similar impact costs. The Contractor acknowledges that in agreeing to the Contract Sum it assessed the potential impact of the limitations in Section 8.3.2 on its ability to recover additional compensation in connection with a Work delay, interference, impact or hindrance and agrees that those limitations shall apply regardless of the accuracy of the Contractor's assessment or actual costs incurred by the Contractor.

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§ 8.3.5 If the Contractor submits a progress report indicating, or otherwise expresses an intention to achieve, completion of the Work prior to any completion date required by the Contract Documents or expiration of the Contract Time, no liability of the Owner to the Contractor for any failure of the Contractor to so complete the Work shall be created or implied.

§ 8.3.6 The intent of the Contract is for Work to follow a logical sequence. The Contractor, however, may be required by the Owner, Construction Manager or Architect to temporarily omit or leave out any section of Work or perform Work out of sequence. Out of sequence work and come back time to these areas shall be performed at no additional cost to the Owner.

§ 8.3.7 Claims relating to Contract Time shall be made in accordance with applicable provisions of Article 15.

§ 8.4 LIQUIDATED DAMAGES

§ 8.4.1 Contractor realizes that time is of the essence on this Contract and the Construction Schedule shall be submitted per Sections included herein. In the event the Contractor fails to submit a Construction Schedule by said date, the sum per calendar day of ($300) THREE HUNDRED DOLLARS will be subtracted from the Contract Sum due the Contractor in the form of a change order.

§ 8.4.2 Contractor realizes that time is of the essence on this Contract and the completion date for any work or the date of Substantial Completion shall be no later than the date indicated in these Contract Documents. The Contractor understands that the substantial disruption of the School District's educational process will occur if the project is not completed by the dates outlined in Division 1 of the specifications. In the event that the Contractor fails to complete any work or substantially complete the work under the Contract by said schedule, the sum per calendar day of ($1,000) FIVE HUNDRED DOLLARS will be deducted from the Contract Sum due the Contractor in the form of a change order, except in cases where a delay is due to unforeseeable causes beyond the control and without the fault or negligence of the Contractor, including acts of God, or of the Public enemy, acts of the government, in either sovereign or contractual capacity, fires, floods, epidemics, (except COVID-19 or its variants) quarantine restrictions (except from COVID-19 or its variants), freight embargos, or delays of Subcontractors or suppliers due to such causes. Delays in acquisition of materials other than by reason of freight embargoes will not constitute a delay excusable under this provisions unless approved by the Owner in writing.

Within five (5) calendar days from the occurrence of any such delay, the Contractor shall notify the Owner in writing the cause of delay. The Owner will ascertain the facts and extent of the delay, and extend the time for completing the Work when in his judgment the findings of fact justify such an extension. Owner's findings of fact will be final and binding on any litigation.

The said sum per calendar day shall constitute the Liquidated Damages incurred by the Owner for each day of the delay beyond the agreed upon dates. Such Liquidated Damages shall be in addition to any other damages (other than by reason of delay) Owner may incur as a result of Contractor's breach of Contract.

In the event the Contractor fails to complete all work under this Contract by said scheduled dates, the Contractor will not be permitted to perform any work during the normal school hours. Such work shall only be performed after school hours, Saturdays, Sundays, holidays or periods when school is unoccupied at no additional cost of any kind to the Owner. In addition to Liquidated Damages, the Contractor shall be liable for all additional costs incurred by the Owner to provide staff, Architect, and Owner's Representative personnel as required to make facility accessible by Contractor and perform inspections during such off hours. In the event that the completion dates are not met, inspections will be performed once each week unless, the Owner or the Architect determine, at their sole discretion, that additional inspections are needed.

All costs incurred by the Owner, Owner's Representative, Architect, Architect's consultants, for the cost of additional inspections, at the rate of ($800) EIGHT HUNDRED DOLLARS per inspection or more due to time requirements, will be subtracted from payment due the Contractor. If the amount due the Contractor for payment is insufficient, any deficiency shall be paid by the Contractor to the Owner. Additionally, a cost of $750 per day for extended Construction Management time will be charged to the Contractor causing the delay.

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§ 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. Notwithstanding anything to the contrary contained in the Contract Documents, the Owner may withhold or offset any payment to the Contractor if and for so long as the Contractor fails to perform any of its obligations under any of the Contract Documents; provided, however, that any such holdbacks shall be limited to an amount sufficient in the reasonable opinion of the Owner to cure any default or failure of performance by the Contractor.

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~~Where the Contract is based on a stipulated sum or Guaranteed Maximum Price, the Contractor shall submit a schedule of values to the Construction Manager, before the first Application for Payment, allocating the entire Contract Sum to the various portions of the Work. The schedule of values shall be prepared in the form, and supported by the data to substantiate its accuracy, required by the Construction Manager and the Architect. This schedule, unless objected to by the Construction Manager or Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment. The Construction Manager shall forward to the Architect the Contractor's schedule of values. Any changes to the schedule of values shall be submitted to the Construction Manager and supported by such data to substantiate its accuracy as the Construction Manager and the Architect may require, and unless objected to by the Construction Manager or the Architect, shall be used as a basis for reviewing the Contractor's subsequent Applications for Payment.~~**§ 9.2.1** Within 30 days of Contract Award, the Contractor shall submit to the Construction Manager a schedule of values allocated to various portions of the Work for each building, prepared in the currently authorized form of AIA Document G703 – Continuation Sheet and supported by such data to substantiate its accuracy as the Construction Manager and Architect may require. This schedule, unless objected to by the Construction Manager or Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment. The schedule of values shall state the names of all Subcontractors, Sub-subcontractors and material suppliers and the amounts to become due to each breakdown by specification section. The schedule of values shall contain, along with individual work items, separate line items for (1) mobilization, bonds, insurance, etc., (2) value of administrative close out submittals, (3) Allowance(s) if required elsewhere in the Project Manual, (4) separate subtotals by building, and (5) buildings further separated between "Additions/New Construction" and "Renovations/Reconstruction" as applicable. At the direction of the Architect, it shall include quantities, if applicable. The total for all items shall aggregate the Contract Sum.

§ 9.2.2 Any schedule of values that fails to include sufficient detail, is unbalanced or exhibits "front loading" of the value of the Contractor's Work will be rejected. Furthermore, if the schedule of values has been approved by the Construction Manager and the Architect and is subsequently used, but later is found by the Construction Manager or Architect to be improper for any reason, sufficient funds shall be withheld from the Contractor's future applications for payment to ensure an adequate reserve (exclusive of normal retainage) to complete the Contractor's Work.

§ 9.2.3 The schedule of values shall be drafted so as to reflect multiple construction sites, multiple locations within each site, additions versus renovations of work, and the like so as to satisfy any New York State Education Department requirements for the Project.

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§ 9.3.1 ~~At least fifteen days before the date established for each progress payment,~~ In accordance with Article 5 of the Agreement and the Payment Procedures in the Specifications, the Contractor shall submit to the ~~Construction Manager~~ 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~~ notarized and reflecting retainage as provided elsewhere in the Contract Documents. Applications for Payment will be in the currently authorized form of AIA Document G732 - 2019, "Application and Certificate for Payment," accompanied by AIA Document G703-1992, "Continuation Sheet," and must include (add and/or deduct) adjustments to the Contract Sum resulting from Work performed under approved Change Orders (specified under Article 7) and shall be shown separately on the application for previous and current periods. Each Application and Certificate of Payment shall be accompanied by two (2) copies of the Pay Application Lien Waiver and Release in the form set forth in the Payment Procedures in the Specifications. Each Application for Payment shall be prepared in such form and supported by such data to substantiate the Contractor's right to payments as the Owner, Construction Manager or Architect ~~require, such as copies of requisitions, and releases of waivers of lien from Subcontractors and suppliers, and shall reflect retainage if provided for in the Contract Documents.~~may require such as copies of requisitions from Subcontractor and material suppliers.

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Each Application for Payment forwarded to the Owner by the Construction Manager or Architect shall be subject to audit and approval by the Owner in accordance with the Owner's normal audit.

§ 9.3.1.1 ~~As provided in Section 7.3.9, such applications may include requests for payment on account of changes in the Work that have been properly authorized by Construction Change Directives, or by interim determinations of the Construction Manager and Architect, but not yet included in Change Orders.~~The Construction Manager and Architect shall review the application for payment submitted by the Contractor and shall advise the Contractor of any adjustments to be made thereto. The Construction Manager and/or the Architect may make such adjustments under the circumstances set forth in Section 9.5.1. If any such adjustments are made by the Architect or Construction Manager, the Contractor shall submit an original itemized revised application with all documentation required by Section 9.3.1.

§ 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.~~As provided in Section 7.3.9, such applications may include requests for payment on account of changes in the Work that have been properly authorized by Construction Change Directives, or by interim determinations of the Construction Manager and Architect, but not yet included in Change Orders.

§ 9.3.1.3 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 material supplier unless such Work has been performed by others whom the Contractor intends to pay.

§ 9.3.1.4 Until Substantial Completion, the Owner shall pay ninety-five percent (95%) of the amount due the Contractor on account of progress payments, less an amount necessary to satisfy any claims, liens, or judgments against Contractor, which have not been suitably discharged. In accordance with Section 9.8.5, the Owner shall pay the entire amount retained from previous progress payments less two (2) times the amount required to complete items identified in a list prepared in accordance with Section 9.8.2 and the amount required to satisfy any outstanding claims, liens, or judgments against the Contractor.

§ 9.3.1.5 The Contractor and its Subcontractors are required to submit certified payroll information to the Owner in accordance with New York State Law.

§ 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 Project site for subsequent incorporation in the Work. If approved in advance in writing 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~~ interest. The costs of applicable insurance, storage, and transportation ~~to the site, for such materials and equipment stored off the site.~~to the site for such materials and equipment stored off the site shall not increase the Contract Sum.

§ 9.3.2.1 Payment may be made for materials and equipment delivered and suitably stored on-site for future incorporation in the Work, subject to the following conditions:

.1 Request for payment shall be considered for material or equipment, which is in short or critical supply, which has been specially fabricated for the Project or, at the discretion of the Construction Manager and Architect, for other materials or equipment.

.2 A request for payment of material stored on-site must be made by the Contractor ten (10) days prior to actual, monthly cut-off date for Payment Applications.

.3 Procedures required by the Owner shall include, but not necessarily limited to, submission by the Contractor to the Construction Manager and Architect of bills of sale and bills of lading for such materials and equipment, provisions of opportunity for the Construction Manager's and Architect's visual verification that such materials and equipment are in fact in storage; and, if stored off-site, submission by the Contractor of verification that such materials and equipment are stored in a bonded warehouse.

.4 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, but the care and protection of such materials and equipment shall remain the responsibility of the Contractor until incorporation into the Work and accepted by the Owner at substantial

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completion, including maintaining insurance coverage on a replacement cost basis without voluntary deductible.

§ 9.3.2.2 Payment may be made for materials and equipment delivered and suitably stored off-site for future incorporation in the Work, subject to the following conditions:

.1 The Contractor shall submit: a written validation by the Owner, Construction Manager or Architect that such materials are stored safely off site, in the quantities and condition stated by the Contractor; a copy of an invoice for the material and equipment; a bill of sale or equivalent indication of the quantity and value of the material or equipment; a written statement indicating the location and method of storage; and property insurance certificate or rider covering the specific material or equipment, which shall name the Owner as an additional insured party.

.2 The Contractor shall submit a verification that such materials and equipment are stored in a bonded warehouse.

.3 A request for payment of material stored off-site must be made by the Contractor 10 days prior to actual, monthly cut-off date for Payment Applications.

.4 All such materials and equipment upon which partial payments have been made shall become the property of the Owner, but the care and protection of such materials and equipment shall remain the responsibility of the contractor until incorporation into the Work and accepted by the Owner at substantial completion, including maintaining insurance coverage on a replacement cost basis without voluntary deductible.

§ 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,~~ information and belief, be free and clear of liens, claims, security ~~interests, or encumbrances,~~ interests or encumbrances in favor of the Contractor, Subcontractors, material suppliers, or other persons or entities ~~that~~ making a claim by reason of having provided labor, materials and equipment relating to the Work.

§ 9.3.4 The Contractor further expressly undertakes to defend the Indemnitees (as defined previously in Section 3.18), at the Contractor's sole expense, against any actions, lawsuits or proceedings brought against Indemnitees as a result of liens filed against the Owner, the Work, the site of any of the Work, the Project site and any improvements thereon, payments due the Contractor or any portion of the property of any of the Indemnities (referred to collectively as liens in this Section 9.3.4). The Contractor hereby agrees to defend, indemnify, and hold Indemnitees harmless against any such liens or claims of lien and agrees to pay any judgment or lien resulting from any such actions, lawsuits, or proceedings.

§ 9.3.5 The Owner shall release any payments withheld due to a lien or a claim of lien if the Contractor obtains security acceptable to the Owner or a lien bond which is: (1) issued by a surety acceptable to the Owner, (2) in form and substance satisfactory to the Owner, and (3) in an amount not less than One Hundred Fifty percent (150%) of such lien claim. By posting a lien bond or other acceptable security, however, the Contractor shall not be relieved of any responsibilities or obligations under this Section 9.3, including, without limitation, the duty to defend and indemnify the Indemnities in an action on the lien, lien discharge bond or underlying debt. The cost of any premiums incurred in connection with such bonds and security shall be the responsibility of the Contractor and shall not be part of, or cause any adjustment to, the Contract Sum.

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§ 9.4.1 ~~Where there is only one Contractor, the~~ The Construction Manager will, within seven (7) days after the Construction Manager's receipt of the Contractor's Application for Payment, review the Application, certify the amount the Construction Manager determines is due the Contractor, and forward the Contractor's Application and Certificate for Payment to the Architect. Within seven (7) days after the Architect receives the Contractor's Application for Payment from the Construction Manager, the Architect will either ~~(1)~~ issue to the Owner a Certificate ~~for Payment, in the full amount of the Application~~ for Payment, with a copy to the Construction ~~Manager; or (2) issue to the Owner a Certificate for Payment for~~ Manager, for such amount as the Architect determines is properly due, ~~and~~ or notify the Construction Manager and Owner in writing of the Architect's reasons for withholding certification in ~~part as provided in Section 9.5.1; or (3) withhold certification of the entire Application for Payment, and notify the Construction Manager and Owner of the Architect's reason for withholding certification in whole~~ whole or in part as

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provided in Section 9.5.1. The Construction Manager will promptly forward to the Contractor the Architect's notice of withholding certification.

§ 9.4.2 Where there is more than one Contractor performing portions of the Project, the Construction Manager will, within seven (7) days after the Construction Manager receives all of the Contractors' Applications for Payment: (1) review the Applications and certify the amount the Construction Manager determines is due each of the Contractors; (2) prepare a Summary of Contractors' Applications for Payment by combining information from each Contractor's application with information from similar applications for progress payments from the other Contractors; (3) prepare a Project Application and Certificate for Payment; (4) certify the amount the Construction Manager determines is due all Contractors; and (5) forward the Summary of Contractors' Applications for Payment and Project Application and Certificate for Payment to the Architect.

§ 9.4.2.1 Within seven (7) days after the Architect receives the Project Application and Project Certificate for Payment and the Summary of Contractors' Applications for Payment from the Construction Manager, the Architect will either (1) issue to the Owner a Project Certificate for Payment, with a copy to the Construction Manager; or (2) issue to the Owner a Project Certificate for Payment for such amount as the Architect determines is properly due, and notify the Construction Manager and Owner of the Architect's reasons for withholding certification in part as provided in Section 9.5.1; or (3) withhold certification of the entire Project Application for Payment, and notify the Construction Manager and Owner of the Architect's reason for withholding certification in whole as provided in Section 9.5.1. The Construction Manager will promptly forward the Architect's notice of withholding certification to the Contractors.

§ 9.4.3 The Construction Manager's certification of an Application for Payment ~~or, in the case of more than one Contractor, a Project Application and Certificate for Payment,~~ shall be based upon the Construction Manager's evaluation of the Work and the ~~data in the Application or Applications~~ information provided as part of the Application for Payment. The Construction Manager's certification will constitute a representation that, to the best of the Construction Manager's knowledge, ~~information,~~ information and belief, the Work has progressed to the point ~~indicated,~~ indicated and the quality of the Work is in accordance with the Contract ~~Documents, and that the Contractor is, or Contractors are, entitled to payment in~~ Documents. The certification will also constitute a recommendation to the Architect and Owner that the Contractor be paid the amount certified.

§ 9.4.4 The Architect's issuance of a Certificate for Payment ~~or, in the case of more than one Contractor, Project Application and Certificate for Payment,~~ shall be based upon the Architect's evaluation of the Work, the recommendation of the Construction Manager, and ~~data in the Application for Payment or Project~~ information provided as part of the Application for Payment. The Architect's certification will constitute a representation that, to the best of the Architect's knowledge, ~~information,~~ information and belief, the Work has progressed to the point indicated, that the quality of the Work is in accordance with the Contract Documents, and that the Contractor ~~is, or Contractors are,~~ is entitled to payment in the amount certified.

§ 9.4.5 The representations made pursuant to Sections 9.4.3 and 9.4.4 are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to ~~completion,~~ completion and to specific qualifications expressed by the Construction Manager or Architect.

§ 9.4.6 The issuance of a separate Certificate for Payment or a Project Certificate for Payment will not be a representation that the Construction Manager or Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the ~~Work;~~ Work, (2) reviewed the Contractor's construction means, methods, techniques, ~~sequences, or procedures;~~ sequences or procedures, (3) reviewed copies of requisitions received from Subcontractors and material suppliers and other data requested by the Owner to substantiate the Contractor's right to ~~payment;~~ 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.

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§ 9.5.1 The Construction Manager or Architect may withhold a Certificate for Payment ~~or Project Certificate for Payment~~ in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Construction Manager's or Architect's opinion the representations to the Owner required by Section ~~9.4.3 and 9.4.4~~ 9.4.4 and 9.4.5 cannot be made. If the Construction Manager or Architect is unable to certify payment in the amount of the Application, the Construction Manager will notify the Contractor and Owner as provided in Section ~~9.4.1 and 9.4.2.~~ 9.4.1. If the

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Contractor, Construction Manager and Architect cannot agree on a revised amount, the Architect will promptly issue ~~a Certificate for Payment or~~ a ~~Project~~ Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Construction Manager or Architect may also withhold a Certificate for Payment or, because of subsequently discovered ~~evidence,~~ evidence or subsequent observations, may nullify the whole or a part of a ~~Certificate for Payment or Project~~ Certificate for Payment previously issued, to such extent as may be necessary in the Construction Manager's or Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from the acts and omissions described in Section 3.3.2 because of

...

.2 third party claims filed or reasonable evidence indicating probable filing of such ~~claims,~~ claims unless security acceptable to the Owner is provided by the Contractor;

...

.5 damage to the ~~Owner~~ Owner, another Prime Contractor or a Separate ~~Contractor or other~~ Contractor;
.6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; ~~or~~
.7 ~~repeated~~ failure to carry out the Work in accordance with the Contract ~~Documents.~~Documents;
.8 receipt by the Owner of a notice of withholding from the New York State Department of Labor or other administrative agencies having jurisdiction over the Project;
.9 failure to comply with applicable federal, state or local statutes, regulations, and/or laws, including, without limitation, laws and regulations applicable to the provision of certified payrolls;
.10 failure of the Contractor to provide executed performance and payment bonds and a current certificate of insurance and endorsements;
.11 reasonable evidence that the Work has not progressed as indicated on the Application for Payment;
.12 damages caused to the Owner, Construction Manager, the Architect or another Contractor as a result the Contractor's performance of its Work;
.13 the Architect's and/or the Construction Manager's discovery or observation of work which has been previously paid for by the Owner which is defective and/or incomplete;
.14 The amount requested exceeds the percent completion of Work on the site; or
.15 breach of this Agreement.

Notwithstanding the extent to which the Construction Manager and/or Architect certify an Application for Payment, the Owner shall have the right to withhold payment, in whole or in part, should the Owner determine that any of the grounds for withholding certification set forth in this Section 9.5.1 do in fact exist. If the Owner withholds payment, in whole or in part, the Owner shall promptly provide to the Contractor, Architect and Construction Manager a written explanation of the reason(s) for which payment is withheld and shall promptly pay, in accordance with the Contract Documents, all amounts which are not in dispute.

§ 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~~ If the Contractor disputes any determination by the Owner, Construction Manager or Architect with regard to any Certificate for Payment or in the event of a bona fide dispute between the Contractor and Owner, the Contractor nevertheless shall expeditiously continue to prosecute the Work and may submit a Claim in accordance with Article 15.

§ 9.5.3 When the above reasons for withholding certification or the Owner's withholding of payment are removed, certification will be made for amounts previously withheld.

§ 9.5.4 If the Architect or Construction Manager withholds certification for payment under Section 9.5.1, or if the Owner otherwise deems it necessary to protect its interests or the interests of the Project, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor ~~or supplier~~ or material or equipment suppliers to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Construction ~~Manager,~~ Manager and both will reflect such payment on the next Certificate for Payment.

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§ 9.5.5 Notwithstanding anything above to the contrary, the Owner has the right to withhold payment to the Contractor to protect itself against damages incurred or which may be incurred as a result of the Contractor's breach or negligence, including, but not limited to, the items set forth in Section 9.5.1. With respect to any liens, claims, or other circumstances for which the Owner is entitled to withhold payments pursuant to decisions by the Architect pursuant to Section 9.5.1, the Owner shall be entitled to withhold a sum equal to twice the stated amounts of such liens or claims, or, where there is no stated amount, twice the amount determined by the Architect to be necessary to protect the interests of the Owner. The Owner will release payments withheld due to liens provided that the Contractor obtains a discharge of record of such lien, by bonding or otherwise. By posting a lien discharge bond, however, the Contractor shall not be relieved of any responsibilities or obligations under the Agreement, including, without limitation, the duty to defend, indemnify, and hold harmless the Indemnitees (as defined previously in Section 3.18). The cost of any premiums or other expenses incurred in connection with such bonds or other means of discharge of record shall be the sole responsibility of the Contractor and shall not be part of, or cause any adjustment to, the Contract Sum.

§ 9.5.6 If the Owner is entitled to reimbursement or payment from the Contractor under or pursuant to the Contract, including but not limited to these General Conditions, such payment shall be made promptly upon demand by the Owner. Notwithstanding anything contained herein to the contrary, if the Contractor fails to promptly make any payment due the Owner, or the Owner incurs any costs and expenses to cure any default of the Contractor or to correct defective work, the Owner shall have an absolute right to offset such amount against the Contract Sum and may, in the Owner's sole discretion, elect either to: (1) deduct an amount equal to that which the Owner is entitled from any payment then or thereafter due the Contractor from the Owner, or (2) issue a written notice to the Contractor reducing the Contract Sum by an amount equal to that which the Owner is entitled.

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§ 9.6.1 After the Architect has issued a Certificate for ~~Payment or Project Certificate for~~ Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents unless such requisition is not in accordance with the terms of the Contract Documents, and shall so notify the Construction Manager and Architect.

§ 9.6.2 Payments received by the Contractor for Work properly performed by Subcontractors and suppliers shall be held in trust by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contracts with the Contractor for which payment was made by the Owner. The Contractor shall strictly comply with any common law, statutory, or decisional law trust fund requirements in the State of New York (including, without limitation, the requirements of New York Lien Law Article 3-A), and hereby agrees that the Owner has the same rights as any beneficiary of such trusts to examine the books and records of the Contractor to determine such compliance, from time to time at the Owner's sole discretion. The Contractor shall promptly pay each Subcontractor, ~~no later than seven days after~~ upon receipt of payment from the Owner, ~~the amount to which the~~ out of the amount paid to the Contractor on account of such Subcontractor's portion of the Work, the amount to which said Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of ~~the~~ such 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.~~similar manner.

§ 9.6.2.1 Within seven (7) days of receipt of a payment from the Owner, the Contractor shall pay each of its Subcontractors and suppliers for work performed and materials furnished by them as reflected in the payment from the Owner, less an amount necessary to satisfy any outstanding claims, liens, or judgments and less a retained amount of not more than 5%, except that the Contractor may retain not more than 10% provided that prior to entering into a Subcontract with the Contractor, the Subcontractor is unable or unwilling to provide a performance bond and labor and material payment bond both in the full amount of the subcontract at the request of the Contractor. The Contractor shall not retain portions of the proceeds owed any Subcontractor or supplier from the Owner's payment to the Contractor for the "contract balance." Similar provisions apply to the Subcontractor and/or supplier paying each of its Subcontractors and suppliers. Nothing in this Section shall create in the Owner any obligation to pay, or to ensure that the Contractor pays, any Subcontractor or supplier, or any relationship in contract or otherwise, implied or expressed, between any Subcontractor or supplier and the Owner. The Contractor agrees that it shall comply with the payment requirements of Section 106-b(2) of the New York General Municipal Law, as amended, and that to the extent there is any conflict between that statutory section and the provisions of this Section 9.6.2.1, the provisions of the statute shall prevail.

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§ 9.6.4 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and material and equipment suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven (7) days, the Owner shall have the right to contact Subcontractors ~~and suppliers~~ to ascertain whether they have been properly paid. Neither the ~~Owner,~~ Owner nor Construction Manager nor Architect shall have an obligation to ~~pay,~~ pay or to see to the payment of money ~~to,~~ to a Subcontractor ~~or supplier,~~ except as may otherwise be required by law.

§ 9.6.5 The Contractor's payments to its suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

...

§ 9.6.7 ~~Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments~~ Payments received by the Contractor for Work properly performed by Subcontractors ~~or provided by~~ and 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, shall create any fiduciary liability or tort liability on the part of the Contractor for breach of ~~trust, or~~ trust or shall 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.~~

~~If the Construction Manager and Architect do not issue a Certificate for Payment or a Project Certificate for Payment, through no fault of the Contractor, within fourteen days after the Construction Manager's receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven days after the date established in the Contract Documents, the amount certified by the Construction Manager and Architect or awarded by binding dispute resolution, then the Contractor may, upon seven additional days' notice to the Owner, Construction Manager and Architect, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided for in the Contract Documents.~~**§ 9.7.1** If, through no fault of the Contractor, the Construction Manager and Architect do not issue a Certificate for Payment within 20 days of the Construction Manager's receipt of the Contractor's Application for Payment or if, through no fault of the Contractor, the Owner does not pay the Contractor the amount certified by the Construction Manager and Architect, subject to the Owner's right to withhold payment under the terms of the Contract Documents, within 30 days of the date established for such payment in the Contract Documents, then the Contractor may, upon seven (7) additional days' written notice and opportunity to cure to the Owner, Construction Manager and Architect, stop the Work until payment of the amount owing has been received. To the extent it is determined that payment to the Contractor was improperly held through no fault of the Contractor and the Contractor elected to stop its Work consistent with the procedure set forth in this Section, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shut-down, delay and start-up as provided for in the Contract Documents. However, if the Contractor stops its Work and it is determined that the Owner had the right to withhold payment under the terms of the Contract Documents, then the Contractor shall be responsible to the Owner for all costs and damages (including attorneys' fees) arising from such stoppage of Work and the Contractor shall not be entitled to any adjustment in the Contract Sum or the Contract Time. This Section shall not apply: (a) to the extent that the Contractor owes to the Owner any amount pursuant to the provisions of this Contract, or (b) to the extent the Owner is required to expend amounts to purchase additional insurance on behalf of the Contractor to meet the insurance requirements of this Agreement.

§ 9.7.2 If the Owner is entitled to payment from the Contractor under or pursuant to the Contract Documents, such payment shall be made promptly upon demand by the Owner. Notwithstanding anything contained in the Contract

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Documents to the contrary, if the Contractor fails to promptly make any payment due the Owner, or the Owner incurs any costs or expenses to cure any default of the Contractor or to correct defective work, the Owner shall have an absolute right to offset such amount against the Contract Sum and may, in the Owner's sole discretion, elect either to (1) deduct an amount equal to that which the Owner is entitled from any payment then or thereafter due the Contractor from the Owner, or (2) issue a written notice to the Contractor reducing the Contract Sum by an amount equal to that which the Owner is entitled.

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§ 9.8.1 ~~Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is~~ The date of Substantial Completion of the Project or a designated portion thereof is the date when construction is sufficiently complete in accordance with the Contract Documents so the Owner can occupy or utilize ~~the Work for its intended use.~~the entire Project (or such portion thereof as Owner earlier elects to occupy or utilize) for the use for which it is intended. Minor items of completion or correction ("Punch List Work") may be performed after Substantial Completion, provided that such items can and shall be performed at such times and in such manner that such Work does not unreasonably interfere with the Owner's occupancy and use of the Project. Substantial Completion shall not be deemed to exist until (a) the Owner receives a Certificate of Occupancy for the Project (or such portion as elected by Owner) if such Certificate of Occupancy is required, and any other permits, approvals, licenses and any other documents from governmental authorities having jurisdiction therefore necessary for the beneficial occupancy of the Project and (b) the Contractor, Construction Manager, Architect and Owner have agreed upon a schedule for final completion and to provide the Owner with all as-built drawings, operating manuals, warranties and other required closeout documents. Warranties called for by the Agreement or by the Drawings and Specifications shall commence on the date of Substantial Completion of the Project or designated portion thereof, or any later date that the parties agree. This date shall be established by a Certificate of Substantial Completion signed by the Owner, Contractor, Architect and Construction Manager.

§ 9.8.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall notify the Construction Manager, and the Contractor and Construction Manager shall jointly prepare and submit to the Architect a comprehensive list ~~of items to be completed or corrected prior to final payment.~~ which shall identify all non-conforming, defective and incomplete Work and establish the date of commencement of warranties in connection with any such Work. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

§ 9.8.3 Upon receipt of the list, the Architect, assisted by the Construction Manager, will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect's inspection discloses any item, whether or not included on the list, which is not sufficiently complete in accordance with the requirements of 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 Construction Manager or Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect, assisted by the Construction Manager, to determine Substantial Completion. If the Architect and the Construction Manager are required to perform additional substantial completion inspections because the Work fails to be substantially complete, the amount of compensation paid to the Architect and the Construction Manager by the Owner for additional services shall be deducted from the final payment to the Contractor.

§ 9.8.4 When the Architect, assisted by the Construction Manager, determines that the Work ~~of all of the Contractors,~~ or designated portion ~~thereof,~~ thereof is substantially complete, the Construction Manager will prepare, and the Construction Manager and Architect shall ~~execute,~~ execute a Certificate of Substantial Completion that shall establish the date of Substantial ~~Completion;~~ Completion, shall establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and ~~insurance; and~~ insurance, and shall fix the time within which the Contractor shall finish all ~~items on the list accompanying the Certificate.~~ Punch List Work, which timeframe shall not exceed 30 days. 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~~ such Certificate. Upon such ~~acceptance,~~ acceptance and consent

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of ~~surety~~ surety, if any, the Owner shall make payment of retainage applying to ~~the~~ such Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

§ 9.8.5.1 In conformance with New York General Municipal Law Section 106-b(1)(a), upon proper execution of Certificate of Substantial Completion of Work, the Contractor shall submit a requisition for payment of the remaining amount of the Contract Sum. Upon certification of payment by the Architect, the Owner will approve and promptly pay the remaining amount of the Contract Sum less two times value of any remaining items to be completed or corrected and less an amount necessary to satisfy any claims, liens or judgments against Contractor which have not been suitably discharged. Such payment shall be made under terms and conditions governing final payment except that the Owner's making of such payment shall not constitute the Owner's waiver of any objection to all or any portion of the Work performed by the Contractor or any claims the Owner may then have against the Contractor.

§ 9.8.5.2 Neither the requisition for payment stipulated in Section 9.8.5.1 nor any portion of retained percentage shall become due until the Contractor submits to the Construction Manager:

.1 an affidavit that all payrolls, bills for materials and equipment, and other indebtedness connected with the work for which the Owner or the Owner's property might in any way be responsible, have been paid or otherwise satisfied, the form of which will be the currently authorized AIA Document G706, "Contractor's Affidavit of Payment of Debts and Claims";

.2 consent of all sureties, if any, to such payment, the form of which will be the currently authorized AIA Document G707A, "Consent of Surety to Reduction in or Partial Release of Retainage," but which will not be required if the amount withheld under Section 9.8.3.1 exceeds the amount of retainage; and

.3 if required by the Owner, other data establishing payment or satisfaction of all such obligations, such as receipts, releases, and waivers of liens arising out of contract to such extent and in such form as may be designated by the Owner.

§ 9.8.5.3 As the Punch List Work is satisfactorily completed or corrected, the Contractor may submit a requisition for payment of these items. The Contractor shall submit with each such requisition for payment affidavits, consents of surety, and other data as described in Section 9.8.5.2 covering work for which payment is requested. Upon certification of such requisitions by the Architect and Construction Manager, the Owner will approve and promptly pay the requisition less an amount two times that which is necessary to satisfy any claims, liens or judgments against the Contractor which have not been suitably discharged.

§ 9.8.5.4 Where the Project includes heating, air conditioning, electrical, communication, data or other systems which 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 Contractor shall provide complete start up and commissioning of the systems with a detailed check list as recommended by the equipment or system manufacturer. The retained amount shall approximate five percent (5%) of the cost of the systems as determined by the cost breakdown submitted. The guaranty/warranty period for such systems will not commence until after such Architect approval.

§ 9.8.5.5 The Contractor shall complete the Punch List Work for the Project no later than 30 days after Substantial Completion of the Project. The Contractor shall be fully liable to the Owner for all damages suffered by the Owner as a result of delay in achieving final completion of the Work, including without limitation, additional architectural and construction management fees related to extended services.

§ 9.8.6 If the Architect or the Construction Manager is required to inspect the Work more than two (2) times prior to certifying the Work as being substantially complete on account of the discovery of one or more items that are not sufficiently complete, the Contractor shall be liable to the Owner for the amount of any costs, additional fees or compensation due from or paid by the Owner to the Architect and/or the Construction Manager for the additional inspections.

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§ 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 as required under Section 11.3.1.5 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,

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retainage if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor and Construction Manager shall jointly prepare and submit a list to the Architect as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect after consultation with the Construction Manager.

...

§ 9.9.4 The Contractor shall cooperate with the Owner in order to make portions of the Project available as soon as possible.

§ 9.9.4.1 The Project site and buildings, whether work of the Contractor is partially or fully completed or not, are property of the Owner who shall have certain rights and privileges in connection with use of same.

§ 9.9.4.2 Should there be, in the opinion of the Architect or Construction Manager, unwarranted delay on part of any Contractor in completion of incomplete or defective work or other Contract requirements, and the Architect so certifies, the Owner may have full or partial use and occupancy of any or all portions of buildings as required for moving in or installing furniture, fixtures, supplies, or equipment and for general cleaning and maintenance work. In such event, the Contractor whose unfinished work is done subsequent to installation of furniture, fixtures, equipment, etc., shall be responsible for the prevention of any damage to such installation. Such use or occupancy by the Owner shall in no instance constitute acceptance of any of the Work.

§ 9.10.1 Upon completion of the Work, the Contractor shall forward to the Construction Manager a written notice that the Work is ready for final inspection and ~~acceptance,~~ acceptance and shall also forward to the Construction Manager a final Contractor's Application for Payment. Upon receipt, the Construction Manager ~~shall perform an inspection to confirm~~ will evaluate the completion of Work of the ~~Contractor. The Construction Manager shall make recommendations to the Architect when the Work of all of the Contractors is ready for final inspection, and shall then forward the Contractors' notices and Application for Payment or Project Application for Payment, to the Architect,~~ Contractor and then forward the notice and Application, with the Construction Manager's recommendations, to the Architect who will promptly make such inspection. When the ~~Architect~~ Architect, finds the Work acceptable under the Contract Documents and the Contract fully performed, the Construction Manager and Architect will promptly issue a final Certificate for Payment or Project Certificate for Payment stating that to the best of their knowledge, information and belief, and on the basis of their on-site visits and inspections, the Work has been completed in accordance with the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Construction Manager's and Architect's final Certificate for Payment or Project Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

§ 9.10.1.1 If the Work is not accepted by the Owner after final inspection and additional time is required to complete items identified during the final inspection, the date starting the one-year correction period described in Article 12.2 shall be set by the Architect at his discretion, but not later than the date of the final Certificate for Payment.

§9.10.1.2 If the Architect and the Construction Manager are required to provide additional services, extend the duration of services to the Owner, and/or perform additional final inspections because the Work fails to comply with the requirements of the Contract Documents, or the Contractor did not complete the Work in accordance with the construction schedule or Project schedule, the amount of compensation paid to the Architect and the Construction Manager by the Owner for additional services shall be deducted from the final payment due to the Contractor.

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect through the Construction Manager (1) all closeout documents required by the Contract Documents, including, without limitation, as-built drawings, attic stock, maintenance manual, operating instructions and other documents required to be delivered under the Contract in connection with the Work in the form required by the Owner, (2) 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)~~ (3) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in ~~effect, (3)~~ effect and will not be canceled or allowed to

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expire until at least 30 days' prior written notice has been given to the Owner, (4) a written statement that the Contractor knows of no substantial reason that the insurance will not be renewable to cover the period required by the Contract Documents, ~~(4)~~ (5) consent of surety, if any, to final ~~payment (5) documentation of any special warranties, such as manufacturers' warranties or specific Subcontractor warranties, and~~ payment, (6), if required by the Owner, other data establishing payment or satisfaction of obligations, such as ~~receipts and~~ receipts, releases and waivers of liens, claims, security ~~interests,~~ interests or encumbrances arising out of the Contract, to the extent and in such form as may be designated ~~by the Owner.~~ by the Owner, and (7) all warranties and guarantees required by the Contract Documents. 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~~ lien. If such lien 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,~~ such lien, including all costs and reasonable attorneys' fees.

§ 9.10.2.1 In addition to the submittals required in Section 9.10.2 above, the Contractor shall submit separate final release or waivers of lien for each Subcontractor, material supplier, or others with lien rights against the Project, and shall submit a list of such parties.

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§ 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.~~by the Owner shall not constitute a waiver of claims, causes of action, damages or complaints by the Owner.

§ 9.10.5 Acceptance of final payment by the Contractor, a ~~Subcontractor, or a supplier,~~ Subcontractor or material supplier shall constitute a waiver of claims by that payee except those previously made in writing in accordance with Article 15 and identified by that payee in writing as unsettled at the time of the final Application for Payment.

§ 9.10.6 At any time a lien is filed against the Project funds, the Owner may demand that the Contractor discharge said lien, through bonding or otherwise, and the Contractor must obtain the discharge of said lien within seven (7) days of such demand at the Contractor's sole cost and expense, and at no cost to the Owner. If any lien or other encumbrance required to be removed at the Contractor's sole cost and expense pursuant to this Section is not discharged of record as aforesaid, the Owner shall have the right to take such action as the Owner shall deem appropriate (which shall include the right to cause such lien or other encumbrance to be canceled and discharged of record), and in such event, all costs and expenses incurred by the Owner in connection therewith (including, without limitation, premiums for any bond furnished in connection therewith, and reasonable attorneys' fees,
court costs and disbursements), shall be paid by the Contractor to the Owner on demand or, at the option of the Owner, deducted from any payment then due or thereafter becoming due from the Owner to the Contractor in accordance with the provisions of these General Conditions.

§ 9.10.7 Existing warranties shall not deprive the Owner of any cause of action, right, or remedy otherwise available for breach of any of the provisions of the Contract Documents. The periods referred to above shall not be construed as limitations on the time in which the Owner may pursue any such action, right or remedy.

§ 9.10.8 The Contractor shall achieve final completion of all Work, including, without limitation, correction of punch-list items, preparation and delivery of all manuals, presentation of training and completion of final paper submissions not later than 30 days following the date of Substantial Completion. In the event the Contractor shall fail to achieve final completion of the Work within such a period of time, the Contractor and the Contractor's surety, if any, shall be liable for and shall reimburse the Owner for any and all fees paid to the Architect and Construction Manager and other expenses made necessary by the Contractor's failure. Additional fees and expenses shall be charged by the Owner against any Final Payment due or which may become due to the Contractor, and the Contractor shall promptly pay or refund the Owner the excess, if any, upon the Owner's written request.

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The Contractor shall be responsible for initiating, implementing, directing, controlling, maintaining, and supervising all safety precautions and programs in connection with the performance of the Contract. The Contractor shall submit

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the Contractor's safety program to the Construction Manager for review and coordination with the safety programs of other Contractors. The Construction Manager's responsibilities for review and coordination of safety programs shall not extend to direct control over or charge of the acts or omissions of the Contractors, Subcontractors, agents or employees of the Contractors or Subcontractors, or any other persons performing portions of the Work and not directly employed by the Construction Manager. The Contractor's safety precautions and programs shall include specific steps designed to minimize the risk of contracting or spread of COVID-19, including provision of all appropriate personal protective equipment, social distancing, avoiding stacking of trades, and other reasonable precautions.

...

§ 10.2.1 The Contractor shall take ~~reasonable~~ necessary precautions for safety of, and shall provide reasonable protection to prevent damage, injury, infection or exposure to COVID-19, or loss to

...

.3 the Owner's real and personal property and other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, ~~structures,~~ structures and utilities not designated for removal, ~~relocation,~~ relocation or replacement in the course of construction;~~and~~

.4 construction or operations by the Owner, Separate Contractors, or other ~~Contractors.~~Contractors; and

.5 the existing buildings and premises in the vicinity of or affected by the Contractor's operations.

.6 the contractor agrees, in order that the work will be completed with the greatest degree of safety, to conform to the requirements of the NYS SED rescue regulations (excerpt of the constructors responsibilities section 155.5) and the Occupational Safety and Health Act of 1970 (OSHA) as amended and the Construction Safety Act of 1969 as amended, including all standard and regulations that have been since or shall be promulgated by the governmental authorities which administer such acts, and shall indemnify and hold harmless the owner, Construction Manager, the Architect, and all.

§ 10.2.1.6 Safe access to and egress from any building under construction as part of this Contract, or any existing building in which Work is being done under this Contract, shall be maintained and remain unencumbered by the Contractor in accordance with all applicable codes, rules and regulations of authorities having jurisdiction on the Work. The Contractor and its Subcontractors shall cooperate in maintaining this condition. Roadways, paths, walks, exits, service drives and other areas shall remain unobstructed and shall be maintained in a safe and satisfactory condition, for all persons using the building and premises. Materials shall not be stored promiscuously about the site or in the building, but shall be carefully stored in areas which will not interfere with pedestrian traffic or with access to and egress from adjacent properties and use of the building. The Contractor shall provide and maintain such temporary Work as may be required for the protection of its finished Work where liable to injury. The Contractor will be responsible for all of its Work, materials and equipment that may be damaged or stolen during the duration of the Contract and until the Work is accepted by the Owner. The Contractor shall make good any such damage or loss without expense to the Owner. The Contractor shall not permit unnecessary hazards to be created nor permit them to continue if they are discovered. The Contractor's storage and staging areas shall be only in locations assigned or approved by the Owner and Architect and may be required to be relocated by the Contractor as building occupancy or use changes during the course of the Work. This relocation will be done by the Contractor at no additional cost to the Owner.

§ 10.2.2 The Contractor shall comply with, and give notices required ~~by~~ by, applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities, bearing on safety of persons or property or their protection from damage, injury, or loss.

§ 10.2.2.1 The Contractor acknowledges that the Labor Law of the State of New York, and regulations adopted thereunder, place upon both the Owner and the Contractor certain duties and that liability for failure to comply therewith is imposed on both the Owner and the Contractor regardless of their respective fault. The Contractor hereby agrees that, as between the Owner and the Contractor, the Contractor is solely responsible for compliance with all such laws and regulations imposed for the protection of persons performing the Contract. The Contractor shall indemnify and hold harmless the Owner of and from any and all liability for violation of such laws and regulations and shall defend any claims or actions which may be brought against the Owner as the result thereof. In the event that the Contractor shall fail or refuse to defend any such action, the Contractor shall be liable to the Owner for all costs of the

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Owner in defending such claim or action and all costs of the Owner, including attorney's fee, in recovering such defense costs from the Contractor.

§ 10.2.2.2 All laborers, workers, and mechanics employed in the performance of the Work of this Project shall be certified as having successfully completed a course in construction safety and health approved by the United States Department of Labor's Occupational Safety and Health Administration that is at least 10 hours in duration. The Contractor and its Subcontractors shall conduct their operation in accordance with the Safety Guides for Construction as issued by State Education Department, and the Contractor's safety program.

§ 10.2.2.3 All safety equipment including hard hats, weather protective gear and PPE required for the Contractor to perform its Work are to be supplied by the Contractor or its Subcontractors. Within the designated construction areas, the Contractor's employees, superintendents, or other agents, and its Subcontractors, employees, superintendents, or other agents are required to wear hard hats and other required or essential safety equipment. Each person seen without a hard hat, or otherwise failing to comply with this requirement, will be ordered to leave the Project. No prior warnings will be given by the Owner, Construction Manager or Architect. The Contractor and its Subcontractors shall be solely responsible for making up and paying for any loss of production or required progress resulting from the removal of personnel from the Project as set forth herein including any costs incurred by the Owner in connection with the work of other contractors.

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§ 10.2.5 The Contractor shall promptly remedy damage and loss ~~(other than damage or loss insured under property insurance required by the Contract Documents)~~ to property referred to in Sections 10.2.1.2, 10.2.1.3 and 10.2.1.4 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2, 10.2.1.3 and ~~10.2.1.4. The Contractor may make a Claim for the cost to remedy the damage or loss to the extent such damage or loss is~~ 10.2.1.4, except damage or loss attributable to acts or omissions of the Owner, Construction Manager or Architect or anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section ~~3.18.~~3.18, and shall not be limited by such damage or loss being insured under property insurance required by the Contract Documents.

§ 10.2.6 The Contractor shall schedule weekly safety meetings and each of its Subcontractors must be properly represented at such meetings. The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner, Construction Manager and Architect.

§ 10.2.7 The Contractor shall not load or permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition. The Contractor shall not load any part of the Work with materials, equipment, shores, bracing, or other items which in any way could cause damage to the Work or to other Work or could endanger persons in or about the Work.

§ 10.2.8 ~~Injury or Damage to Person or Property~~If, during the construction, public or private property is damaged or destroyed as a consequence of its Work, the Contractor shall, at its own expense, restore such property to a condition equal to that existing before such damage or injury was done, by repairing, rebuilding or replacing it, or otherwise making good such damage or destruction in an acceptable manner.

§ 10.2.9 The Contractor shall be responsible for all breakage of glass, which has been furnished and installed as part of Contract and existing glass that is broken due to operations under the Contract for Work. No matter by whom or what cause glass was broken, the Contractor shall replace all broken glass before completion and acceptance of the Contractor's Work. The Contractor may claim damages, if applicable.

§ 10.2.10 In addition to all requirements set forth herein, the Contractor and its Subcontractors shall fully comply with the provisions of the federal Occupational Safety and Health Act of 1970, as amended, and with any rules and regulations pursuant to the Act. This requirement shall apply continuously and not be limited to normal working hours.

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§ 10.2.11 The Contractor shall also be responsible, at the Contractor's sole cost and expense, for all measures necessary to protect any property adjacent to the Project and improvements therein. Any damage to such property or improvements shall be promptly repaired by the Contractor at its sole expense.

§ 10.2.12 The Contractor shall immediately contact the Construction Manager and, within 24 hours, report, in writing, to the Owner, Architect and Construction Manager, all accidents arising out of or in connection with the Work which cause death, personal injury, or property damage, giving full details and statements of any witnesses. In addition, if death, serious personal injuries, or serious property damages are caused, the accident shall be reported immediately by telephone or messenger to the Owner, Construction Manager, and Architect.

§ 10.2.13 The Contractor shall be solely responsible for any conditions that develop during construction and in the event any structure is dislocated, over strained, or damaged so as to affect is usefulness, the Contractor shall be solely responsible. The Contractor shall take whatever steps necessary to strengthen, relocate or rebuild the structure to meet requirements at the sole expense of the Contractor.

§ 10.2.14 The Contractor is responsible for restoration or repair of utilities, private property, buildings, pavement, walkways, roads, etc. damaged by its activities under this Agreement to the satisfaction of the Owner, Construction Manager and Architect.

§ 10.2.15 From the commencement to the final completion of the Work, the Contractor shall keep the Work and the Owner's building(s) free from accumulation of water no matter the source or cause of water infiltration.

§ 10.2.16 During construction, the Contractor shall be responsible for maintaining a watertight structure. This responsibility shall include additions/alterations of existing buildings. The Contractor shall be responsible for temporary roofing, tarps and other protection at roofs, cavity walls, etc. Should the Contractor fail to provide adequate protection causing flooding, damage or other disturbance to the existing building(s), the Contractor shall be responsible for all costs associated with clean up, remediation and repairs. Inasmuch as flooding and water damage have safety implications to the general public, clean up, remediation and repairs may be made by the Owner without prior notice to the Contractor. Administration costs incurred by the Owner, Construction Manager and Architect will also be back charged to the Contractor. The Contractor, by entering into this Contract, agrees to be liable for these costs.

§ 10.2.17 Injury or Damage to Person or Property
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§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents ~~regarding hazardous materials or substances.~~ and all applicable laws, rules and regulations regarding hazardous materials. 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~~ 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~~ report the condition to the Owner, Construction Manager and Architect ~~of the condition.~~ in writing. The Owner shall arrange for the material to be tested and if the test reveals that the material is a hazardous material or substance which has not been rendered harmless, the Owner shall pay for the test; otherwise, the Contractor shall bear the cost of the test and the Contract Sum shall be reduced by the amount of that cost. The Contractor shall comply with the reasonable instructions of the Owner after the test is conducted. This Section shall not apply in the case of asbestos which is to be removed and disposed of as part of the Work of the Contract.

§ 10.3.2 Upon receipt of the Contractor's written notice, the Owner shall obtain the services of a licensed laboratory to verify ~~the~~ a presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. ~~Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor, Construction Manager and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of the material or substance or who are to perform the task of removal or safe containment of the material or substance. The Contractor, the Construction Manager and the Architect will promptly reply to the Owner in writing stating whether or not any of them has reasonable objection to the persons or entities proposed by the Owner. If the Contractor, Construction Manager or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the~~

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~~Contractor, the Construction Manager and the Architect have no reasonable objection.~~ When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased ~~by~~ in the amount of the Contractor's reasonable additional costs of ~~shutdown, delay,~~ shut-down, delay and start-up.

§ 10.3.3 To the fullest extent permitted by law, but only to the extent of available insurance proceeds, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Construction Manager, Architect, their consultants, ~~and agents~~ and employees of any of them from and against claims, damages, ~~losses,~~ 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~~ the person seeking indemnification: (1) did not bring such material onto the Project site; (2) timely provided notice of the condition and stopped Work in the affected area as required by Section 10.3.1; and (3) has a claim, damage, loss or expense that is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work ~~itself), except~~ itself). The Owner shall have no indemnity obligation to the extent that such damage, ~~loss,~~ loss or expense is due to the fault or negligence of the party seeking ~~indemnity.~~ indemnity or the fault or negligence of a third party for whom the Owner is not responsible.

§ 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~~ indemnify the Owner for the cost and expense the Owner incurs (1) for remediation of ~~hazardous materials or substances~~ a material or substance 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 or fault 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 (that was not brought to the site by the Contractor or those for whom the Contractor is responsible) 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.

§ 10.3.7 The Contractor shall notify the Owner of any storage, use, or discovery of hazardous material on the Project site which the Contractor knows or reasonably should know could cause bodily injury or death and of any injury or death attributable to any such hazardous material.

§ 10.3.8 The Contractor shall take all reasonable precautions and measures to prevent any contamination by or spread or disturbance of hazardous or potentially hazardous substances or materials stored, used, or discovered on the Project site.

§ 10.3.9 For the avoidance of any doubt, COVID-19 shall not be considered a Hazardous Material for purposes of this Article 10.3.

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~~In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury, or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7.~~ **§ 10.4.1** The Contractor shall provide at the site, such equipment and medical facilities as are necessary to supply first-aid service to anyone at the Work.

§ 10.4.2 The Contractor must promptly report in writing to the Construction Manager all emergencies whatsoever arising out of, or in connection with the performance of the Work, whether on, or adjacent to the site, which caused death, personal injury or property damages, giving full details and statements of witnesses. In addition, if death, injury, or damages are caused, the emergency shall be reported immediately to the Construction Manager, Owner, and Architect.

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§ 10.4.3 In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7.

§ 10.4.4 All fire and emergency access, including roads, rights-of-way, corridors, doors, and stairs, and all existing fire and smoke detection systems shall be maintained at all times in accordance with fire safety laws. If the Work requires the temporary obstruction of any fire and emergency access or existing fire and smoke detection systems, the Construction Manager shall be notified at least 72 hours in advance.

...

§ 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, Construction Manager and Construction Manager's consultants, and the Architect and Architect's consultants, shall be named as additional insureds under the Contractor's commercial general liability policy or as otherwise described in the Contract Documents.~~agrees to secure and maintain, at Contractor's own expense, all insurance coverage required in this Article 11 from one or more insurance companies licensed and admitted to write such insurance in New York State. Insurers must carry an A.M. Best Financial Strength rating of A- or higher. The Contractor's insurance must include the following, without limitation, and must be written with limits no less than specified in Section 11.1.2:

.1 claims under workers' compensation, disability benefit, and other similar employee benefit acts applicable to the Work to be performed, including, without limitation, claims by the employees of private entities performing Work at the site that are exempt from workers' compensation insurance coverage requirements on account of number of employees or occupation, which entities must maintain voluntary compensation coverage at the same limits specified for mandatory coverage for the duration of the Project;

.2 claims for damages because of bodily injury, occupational sickness or disease, or death of the Contractor's employees;

.3 claims for damages because of bodily injury, sickness, disease, or death of any person other than the Contractor's employees;

.4 claims for damages insured by usual personal injury liability coverage sustained (1) by a person as a result of an offense directly or indirectly related to employment of such person by the Contractor, or (2) by another person;

.5 claims for damages, other than to the Work itself, because of injury to or destruction of tangible property, including resulting loss of use resulting;

.6 claims for damages because of bodily injury, death of a person, or property damage arising out of ownership, maintenance, or use of a motor vehicle; and

.7 claims involving contractual liability applicable to the Contractor's obligations under Section 3.18.

.8 A fully completed New York Construction Certificate of Liability Insurance Addendum (Acord 855 2014/15) must be included with the certificates of insurance. For any "yes" answers on Items G through L on this Form – additional details must be provided in writing. No exclusions, restrictions and/or modifications to coverages will be accepted.

.9 Where the Contract or Subcontract involves asbestos, the insurance required by section 11.1 shall specifically include the words asbestos abatement work and shall specify any limitations on completed operation time. If there is a limitation it will be at the owner's discretion to accept or reject that limitation.

.10 Insurance must remain in effect at least until final payment and all items thereafter when the contractor may be correcting, removing or replacing defective work in accordance with this document, and

.11 Liability insurance shall include all major divisions of coverage and be on a comprehensive basis including:

.1 Premises operations without exclusion of x,c, and u coverage;

.2 Independent Contractors Protective;

.3 Products and completed operation;

.4 Personal Injury Liability;

.5 Owned, non-owned and owned motor vehicles

.7 Broad form property damage including completed operations

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§ 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.~~Coverages, whether written on an occurrence or claims-made basis, must be maintained without interruption from the date of commencement of the Work until the date of final payment and termination of any coverage required to be maintained after final payment. Claims-made coverage will only be allowed when the Contractor demonstrates that occurrence-based coverage is not available for a specific type of required coverage. The insurance required by Section 11.1.1 must be written for not less than the following limits, or greater limits as may be required by law, and include the following terms:

.1 Commercial General Liability. Occurrence-based Commercial General Liability coverage to include bodily injury, personal injury, and property damage applicable to ongoing operations, products & completed operations, and contractual liability, all with a per-project aggregate endorsement. No XCU exclusion is allowed for explosion, collapse, and underground operations. Products and Completed Operations coverage must be maintained in force for a minimum of two (2) years following Final Completion of the Project. Minimum limits are:

$2,000,000 General Aggregate
$2,000,000 Products and Completed Operations Aggregate
$1,000,000 Personal and Advertising Injury
$1,000,000 Each Occurrence
$1,000,000 Personal and Advertising Injury
$ 100,000 Fire Damage (any one fire)
$ 10,000 Medical Expense (any one person)

.2 Automobile Liability. Bodily Injury and Property Damage coverage for the Contractor as the owner or lessee of automobiles, trucks, trailers, self-propelled Contractor's equipment, and all other owned and non-owned vehicles registered for use on the public highway and/or used in operations relating to the Contractor's Work, with a minimum Combined Single Limit of $1,000,000. If any such vehicles are to be used to transport hazardous materials, the Contractor shall also provide pollution liability broadened coverage evidenced by ISO Form CA 99 48.

.3 Excess Liability and/or Umbrella Liability. Minimum limits are:

$5,000,000 each Occurrence and $5,000,000 for general construction and no work at elevation (1 story – 10 feet) or Project values less than or equal to $1,000,000.
$10,000,000 each Occurrence and $10,000,000 Aggregate for high risk construction, work at elevation (>1 story or 10 feet) or Project values greater than $1,000,000.

Umbrella/Excess coverage shall be on a follow-form basis.

.4 Workers' Compensation

.1 Workers' Compensation Requirements. To comply with the New York State Workers' Compensation Law, the Contractor must (1) be legally exempt from obtaining workers' compensation insurance coverage, or (2) obtain such coverage from insurance carriers, or (3) be self-insured or participate in an authorized group self-insurance plan. Minimum limitations are:

Bodily Injury by Accident: $500,000 Each Accident
Bodily Injury by Disease: $500,000 Each Employee
Bodily Injury by Disease: $500,000 Policy Limit

.2 Workers' Compensation Coverage Evidence. To demonstrate compliance with the New York State Workers' Compensation Law, the Contractor must provide **one** of the following forms to the Owner:

.1 Either CE-200, "Affidavit For New York Entities And Any Out Of State Entities With No Employees, That New York State Workers' Compensation And/Or Disability Benefits Insurance Coverage Is Not Required"; **or** CE-200, "Affidavit That An Out-Of-State Or Foreign Employer Working In New York State Does Not Require Specific New York State Workers' Compensation And/Or Disability Benefits Insurance Coverage" (either affidavit must be stamped as received by the New York State Workers' Compensation Board); **or**

.2 Either C-105-2, "Certificate of NYS Workers' Compensation Insurance Coverage" (for employers insured for workers' compensation through a private insurance carrier – the Contractor's insurance carrier must send this form to the Owner),**or** U-26.3, "New York State Insurance Fund Certificate of

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Workers' Compensation Coverage" (for employers insured for workers' compensation through the State Insurance Fund); **or**

.3 **Either** SI-12, "Certificate of Workers' Compensation Self-Insurance," **or** GSI-105-2, "Certificate of Participation in Workers' Compensation Group Self-Insurance (for employers participating in group self-insurance for workers' compensation – the Contractor's Group Self-Insurance Administrator must send this form to the Owner).

.5 **Employer's Liability/Disability**

.1 **Disability Benefits Requirements.** To comply with the New York State Disability Benefits Law, the Contractor must (1) be legally exempt from obtaining disability benefits insurance coverage, (2) obtain such coverage from insurance carriers, or (3) be self-insured.

.2 **Disability Benefits Coverage Evidence.** To demonstrate compliance with the New York State Disability Benefits Law, the Contractor must provide **one** of the following forms to the Owner:

.1 **Either** CE-200, "Affidavit For New York Entities And Any Out Of State Entities With No Employees, That New York State Workers' Compensation And/Or Disability Benefits Insurance Coverage Is Not Required" **or** CE-200, "Affidavit That An Out-Of-State Or Foreign Employer Working In New York State Does Not Require Specific New York State Workers' Compensation And/Or Disability Benefits Insurance Coverage" (either affidavit must be stamped as received by the New York State Workers' Compensation Board); **or**

.2 **Either** DB-120.1, "Certificate of Disability Benefits," **or** DB-820/829, "Certificate/Cancellation of Insurance" (the Contractor's insurance carrier must send either form to the Owner); **or**

.3 DB-155 (3/04), "Certificate of Disability Benefits Self-Insurance."

.6 **Hazardous Materials.** If the Contractor's Work involves handling or disturbance of asbestos or other hazardous materials, the Contractor shall provide bodily injury and property damage liability insurance applicable to such operations, covering both ongoing operations and products & completed operations. Products and Completed Operations coverage must be maintained in force for a minimum of two (2) years following Final Completion of the Project. Coverage must be for limits not less than:

.1 If covered by the Contractor's umbrella/excess liability policy:

$2,000,000 General Aggregate
$2,000,000 Each Occurrence or Incident:

.2 If not covered by the Contractor's umbrella/excess liability policy:

$6,000,000 General Aggregate
$6,000,000 Each Occurrence or Incident:

.7 **Owner's Protective Liability Policy.** The XCU exclusion must be deleted, and the Named Insureds will be "Nanuet Union Free School District." Minimum limits are:

$2,000,000 Each Occurrence
$4,000,000 Aggregate

§ 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.~~Certificates of insurance acceptable to the Owner, together with copies of all insurance policies procured by the Contractor pursuant to this Article 11, including, without limitation, terms, conditions, declarations, riders, and endorsements, must be submitted to the Construction Manager for transmittal to the Owner, with copies to the Architect, prior to commencement of the Work. If any of the foregoing insurance coverages are required to remain in force after final payment, an additional certificate evidencing continuation of such coverage must be submitted with the final Application for Payment as required by Section 9.10.2.2. Information concerning reduction of coverage must be furnished by the Contractor with reasonable promptness. In addition to the Certificates of Insurance and accompanying documents, the Contractor shall provide to the Certificate Holders, on a timely basis, copies of any subsequently issued endorsements that amend any coverages or limits. In addition:

.1 "Certificate Holders" are the Nanuet Union Free School District, 101 Church Street, Nanuet, NY,10954

.2 Coverages reflected in certificates of insurance and underlying policies must comply with all requirements of this Article 11.

.3 All insurance documents must be executed with *authorized* signatures.

.4 All required liability policies must be endorsed to provide that any Notice of Cancellation or Notice of Non-Renewal given to the First Named Insured must also be given to the Additional Insureds identified in Section 11.1.4. **Copies of such endorsements must be furnished to the Certificate Holders.**

.5 Failure of the Owner to object to the Contractor's failure to furnish a certificate or other evidence of required insurance coverages, or to object to any defect in such certificate or other evidence, or to demand receipt of

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such certificate or other evidence, is not a waiver of the Contractor's obligation to furnish the required insurance coverages. Furthermore, nothing contained in this Article 11 imposes on the Owner a duty or obligation to review any certificates or other evidence of insurance coverages or to issue any formal approval or acceptance of such evidence, the duty and obligation of the Contractor being to provide insurance meeting the requirements of this Article 11 regardless of any review or lack of review by the Owner of the Contractor's evidence of insurance.

.6 The Contractor's liability to and indemnification of the Owner is not relieved or diminished by the Contractor securing insurance coverage in accordance with this Article 11. Any acknowledgement of receipt of, or lack of objection by the Owner to, the Contractor's evidence of required insurance coverage is not acceptance in any way of any deficiencies in the Contractor's insurance coverage.

§ 11.1.4 ~~Notice of Cancellation or Expiration of Contractor's Required Insurance.~~ ~~Within three (3) business days of the date the Contractor becomes aware of an impending or actual cancellation or expiration of any insurance required by the Contract Documents, the Contractor shall provide notice directly to the Owner, and separately to the Construction Manager, of such impending or actual cancellation or expiration. Upon receipt of notice from the Contractor, the Owner shall, unless the lapse in coverage arises from an act or omission of the Owner, have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by the Contractor. The furnishing of notice by the Contractor shall not relieve the Contractor of any contractual obligation to provide any required coverage.~~

Additional Insureds

§ 11.1.4.1 Policies of insurance required under Sections 11.1.2.1 (Commercial General Liability), 11.1.2.2 (Automobile Liability), 11.1.2.3 (Excess Liability and/or Umbrella Liability), and 11.1.2.6 (Hazardous Materials – if applicable) must also apply to the following as Additional Insureds on a primary and non-contributory basis, with the following designation, unaltered:

Nanuet Union Free School District and their respective employees, interim administrators, authorized volunteers, committee members, student teachers, auxiliary instructors, members of the Board of Education, and consultants (the "District Indemnitees"); KSQ Architects, PC and its consultants ("Designers"), and Jacobs ("Construction Manager"), during both ongoing and complete operations. The additional insured coverage provided shall not preclude coverage in favor of the any District Indemnitees, Designers, or Construction Manager, based on its lack of privity with Contractor or other third party additional insured. Further, such coverage shall not exclude or deny coverage to District Indemnitees, Designers, or the Construction Manager on the basis that the named insured Contractor's Work or operations are not performed directly for the District Indemnitees, Designers, or Construction Manager or other third party additional insured.

§ 11.1.4.2 Coverage Evidence. Additional Insured coverage must be effected through the use of **either** ISO Form CG 20 10 11 85 **or** Forms CG 20 10 04 13 **and** CG 20 37 04 13 **together**. Form CG 20 10 04 13 alone is not acceptable. Certificates of Insurance must clearly state how coverage is effected in the Excess/Umbrella Liability layer. Certificates of Insurance must show the form numbers used to effect all of the Additional Insured coverages. A copy of the actual policy language or endorsement that effects this coverage in each policy must be provided to the Owner and Construction Manager with the Certificate of Insurance. In the event Contractor is unable to procure such coverage specifically naming the "District Indemnitees," "Designers," "Construction Manager," or any other third party as an additional insured as required above, Contractor shall notify the Owner and Construction Manager prior to commencing Work and shall not proceed with any Work until authorized by the Owner to do so.

§ 11.1.4.3 No Reliance on "Following Form." The Contractor acknowledges that "Following Form" wording generally does not meet the primary and non-contributory coverage requirement for Additional Insureds, and that the coverage primacy aspect of Additional Insured coverage is typically addressed in the "Other Insurance" provisions of a policy's "Conditions" section, and often requires an amending endorsement to effect coverage on a primary and non-contributory basis. The Contractor therefore must provide such endorsements to the Owner, or other documentation acceptable to the Owner evidencing that the primary and non-contributory coverage requirements are met as to all policies for which they are required under Section 11.4.1.1.

§ 11.1.5 Normal Expiration/Renewal. When any required insurance is to expire due to a normal expiration or renewal date, the Contractor shall supply the Owner, at least ten (10) days prior to either such date, in addition to Certificates of Insurance, with either (1) copies of all renewed insurance policies, including, without limitation, terms, conditions,

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declarations, riders, and endorsements evidencing continuation of all coverages in the same manner, limits of protection, and scopes of coverage as was provided by the previous policy, or (2) if acceptable to the Owner, all declaration pages, mandatory riders, and/or endorsements that clearly evidence the continuation of all coverages in the same manner, limits of protection, and scope of coverage as provided by the previous policy.

§ 11.1.6 Subcontractors. The Contractor shall cause each Subcontractor to (1) procure insurance during the life of its Subcontract or Sub-subcontract the same insurances as are required of the Contractor as per this Article 11, and (2) cause the issuers of those insurance policies to name the Additional Insureds as Additional Insureds under each Subcontractor's comprehensive general, automobile, excess/umbrella, and hazardous materials liability policies. The Additional Insured endorsement included in each such Subcontractor's policies must state that coverage is afforded to all Additional Insureds with respect to any and all claims arising out of operations performed by or on behalf of the Contractor. If the Additional Insureds have other insurance otherwise applicable to a loss, such other insurance will only apply, if at all, on an excess or contingent basis. The amount of each Subcontractor's insurers' liability under each such insurance policy will not be reduced by the existence of such other insurance.

§ 11.1.7 Owner Insurer Loss Payments. In the event the Owner's insurer(s) make(s) any payment toward any loss covered under any policy of insurance the Contractor is required to procure under this Article 11, the Owner's insurer(s) are subrogated to all of the Contractor's rights of recovery against any person or organization including, but not limited to, the Contractor's insurer(s), and the Contractor shall execute and deliver all instruments, papers, and whatever else is necessary to secure those rights. The Contractor shall do nothing after the payment of any damages to prejudice those rights.

§ 11.2 ~~Owner's Insurance~~Owner's Liability Insurance

The Owner shall purchase and maintain the Owner's usual liability insurance. The Owner may also, at its sole option, purchase and maintain other insurance for protection against claims that may arise from operations under the Contract Documents. The Contractor is not responsible for purchasing and maintaining such optional Owner's liability insurance unless specifically required in the Contract Documents. Neither the Owner's usual liability insurance nor any other insurance obtained by the Owner reduces or otherwise affects the Contractor's insurance requirements under Section 11.1.

~~**§ 11.2.1** The Owner shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Owner shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located.~~

~~**§ 11.2.2 Failure to Purchase Required Property Insurance.** If the Owner fails to purchase and maintain the required property insurance, with all of the coverages and in the amounts described in the Agreement or elsewhere in the Contract Documents, the Owner shall inform both the Contractor and the Construction Manager, separately and in writing, prior to commencement of the Work. Upon receipt of notice from the Owner, the Contractor may delay commencement of the Work and may obtain insurance that will protect the interests of the Contractor, Subcontractors, and Sub-Subcontractors in the Work. When the failure to provide coverage has been cured or resolved, the Contract Sum and Contract Time shall be equitably adjusted. In the event the Owner fails to procure coverage, the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent the loss to the Owner would have been covered by the insurance to have been procured by the Owner. The cost of the insurance shall be charged to the Owner by a Change Order. If the Owner does not provide written notice, and the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain the required insurance, the Owner shall reimburse the Contractor for all reasonable costs and damages attributable thereto.~~

~~**§ 11.2.3 Notice of Cancellation or Expiration of Owner's Required Property Insurance.** Within three (3) business days of the date the Owner becomes aware of an impending or actual cancellation or expiration of any property insurance required by the Contract Documents, the Owner shall provide notice directly to the Contractor, and separately to the Construction Manager, of such impending or actual cancellation or expiration. Unless the lapse in coverage arises from an act or omission of the Contractor: (1) the Contractor, upon receipt of notice from the Owner, shall have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by either the Owner or the Contractor; (2) the Contract Time and Contract Sum shall be equitably adjusted; and (3) the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent any loss to the Owner would have been covered by the insurance had it not expired or been cancelled. If the Contractor purchases replacement coverage, the cost of the insurance shall be charged to the Owner by an appropriate Change~~

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~~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~~Property Insurance

§ 11.3.1 ~~The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents, and employees, each of the other; (2) the Construction Manager and Construction Manager's consultants; (3) the Architect and Architect's consultants; (4) other Contractors and any of their subcontractors, sub-subcontractors, agents, and employees; and (5) Separate Contractors, if any, and any of their subcontractors, sub-subcontractors, agents, and employees, for damages caused by fire, or other causes of loss, to the extent those losses are covered by property insurance required by the Agreement or other property insurance applicable to the Project, except such rights as they have to proceeds of such insurance. The Owner or Contractor, as appropriate, shall require similar written waivers in favor of the individuals and entities identified above from the Construction Manager, Construction Manager's consultants, Architect, Architect's consultants, other Contractors, Separate Contractors, subcontractors, and sub-subcontractors. The policies of insurance purchased and maintained by each person or entity agreeing to waive claims pursuant to this Section 11.3.1 shall not prohibit this waiver of subrogation. This waiver of subrogation shall be effective as to a person or entity (1) even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, (2) even though that person or entity did not pay the insurance premium directly or indirectly, or (3) whether or not the person or entity had an insurable interest in the damaged property.~~Unless otherwise provided, the Owner shall purchase and maintain, in a company or companies lawfully authorized to do business in the State of New York, property insurance on a replacement cost basis. Such property insurance will be maintained, unless otherwise provided in the Contract Documents or otherwise agreed in writing by all persons and entities who are beneficiaries of such insurance, until final payment is made as provided in Section 9.10 or until no person or entity other than the Owner has an insurable interest in the property required by this Section 11.3 to be covered, whichever is later. This insurance will include interests of the Owner, Contractor, Subcontractors, and Sub-subcontractors in the Project.

§ 11.3.1.1 Property insurance will be on a builder's risk, "all-risk," or equivalent policy form and include, without limitation, insurance against the perils of fire (with extended coverage) and physical loss or damage including, without duplication of coverage, theft, vandalism, malicious mischief, collapse, earthquake, flood, windstorm, falsework, testing and startup, temporary buildings, and debris removal including demolition occasioned by enforcement of any applicable legal requirements, and will cover reasonable compensation for the Architect's, Contractor's, and Construction Manager's services and expenses required as a result of such insured loss. Coverage for other perils is not required unless otherwise provided in the Contract Documents. The form of policy for this coverage shall be Completed Value.

§ 11.3.1.1.1 Contractor is responsible for all tools, equipment, materials, Work, etc., until Substantial Completion and possession by Owner. The 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 of New York.

§ 11.3.1.2 The Contractor shall provide insurance coverage for portions of the Work stored off the site, in transit and stored on the site but not incorporated into the Work as full replacement cost basis without voluntary deductible. The Contractor shall provide Certificate copies to the Construction Manager showing the coverage for their materials in transit or stored off site.

§ 11.3.1.3 If the property insurance requires deductibles, the Owner shall pay costs not covered because of such deductibles.

§ 11.3.1.4 The property insurance will cover portions of the Work stored off the site, and also portions of the Work in transit. The insurance required by this Section 11.3 will not, however, cover machinery, tools, equipment, vehicles, shanties, tool houses, trailers, or other temporary or permanent structures owned or rented by the Contractor, a Subcontractor, or a Sub-subcontractor, or their employees, utilized in performance of the Work but not incorporated into the permanent improvements. The Contractor is solely responsible for all such items of its own and any under its control. The Contractor shall, at the Contractor's own expense, provide insurance coverage for all of the items described in this Section 11.3.1.4, which is subject to the provisions of Section 11.3.7.

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§ 11.3.1.5 Partial occupancy or use in accordance with Section 9.9 may not commence until the insurance company or companies providing property insurance consent to such partial occupancy or use by endorsement or otherwise. The Owner and the Contractor shall take reasonable steps to obtain consent of the insurance company or companies and shall, without mutual written consent, take no action with respect to partial occupancy or use that would cause cancellation, lapse, or reduction of insurance.

§ 11.3.1.6 The Owner shall not be responsible to or for the Contractor or Subcontractor against any loss by fire, lightning, extended coverage, all risk, theft or vandalism and malicious mischief, or any tools, equipment, vehicles, shanties, tool houses, trailers or other temporary or permanent structures wherever located and owned by the Contractor, Subcontractors, their employees or agents.

§ 11.3.1.7 The form of policy for the coverage required by 11.3.1 shall be Completed Value.

§ 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.~~**Boiler and Machinery Insurance.** The Owner, if applicable to the Work and at its sole option, may purchase and maintain boiler and machinery insurance or shall do so if required by law, which shall specifically cover such insured objects during installation and until final acceptance by the Owner. This insurance will include interests of the Owner, Construction Manager, Contractor, Subcontractors and Sub-subcontractors in the Work.

§ 11.3.3 Intentionally omitted.

§ 11.3.4 If the Contractor requests in writing that insurance for risks other than those described in this Section 11.3 or other special causes of loss be included in the property insurance policy, the Owner shall, if possible, include such insurance, and the cost for it will be charged to the Contractor by appropriate Change Order.

§ 11.3.5 Intentionally omitted.

§ 11.3.6 Upon the Contractor's request, the Owner will provide copies of each policy that includes insurance coverages required by this Section 11.3. Each policy shall contain all generally applicable conditions, definitions, exclusions and endorsements related to this Project.

§ 11.3.7 Waivers of Subrogation. The Owner and Contractor waive all rights against (1) each other and any of their respective subcontractors, sub-subcontractors, agents and employees, and (2) the Construction Manager, Construction Manager's consultants, Architect, Architect's consultants, separate contractors described in Article 6, if any, and any of their respective subcontractors, sub-subcontractors, agents, and employees, for damages caused by fire or other causes of loss to the extent of proceeds under property insurance obtained pursuant to this Section 11.3 or other property insurance applicable to the Work, except such rights as the Owner and Contractor may have to the proceeds of such insurance held by the Owner. The Owner or Contractor, as appropriate, shall require of the Construction Manager, Construction Manager's consultants, Architect, Architect's consultants, Owner's separate contractors described in Article 6, if any, and any of their respective subcontractors, sub-subcontractors, agents, and employees, by appropriate written agreements, similar waivers each in favor of other parties enumerated in this Section 11.3.7. The policies must provide such waivers of subrogation by endorsement or otherwise. A waiver of subrogation is effective as to a person or entity even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, did not pay the insurance premium directly or indirectly, and whether or not the person or entity has an insurable interest in the property damaged.

§ 11.3.8 A loss insured under the Owner's property insurance will be adjusted by the Owner and made payable to the Owner for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.3.10. The Contractor shall pay Subcontractors their just shares of insurance proceeds received by the Contractor, and by appropriate written agreements shall require Subcontractors to make payments to their Sub-subcontractors in similar manner.

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§ 11.3.9 If required in writing by a party in interest, the Owner shall, upon occurrence of an insured loss, give a bond for proper performance of the Owner's duties. The cost of the bond will be charged against proceeds received. The Owner shall deposit in a separate account proceeds so received, which the Owner shall distribute in accordance with such agreement as the parties in interest may reach, or as determined in accordance with the method of binding dispute resolution selected in the Agreement. If after such loss no other special agreement is made, and unless the Owner terminates the Contract for convenience, replacement of damaged property will be performed by the Contractor after notification of a Change in the Work in accordance with Article 7.

§ 11.3.10 The Owner will adjust and settle a loss with insurers unless one of the parties in interest objects in writing within five days after occurrence of loss to the Owner's exercise of this power; if such objection is made, the dispute will be resolved in the manner selected as the method of binding dispute resolution in the Agreement. Nothing in this Agreement calls for the name of any party other than the Owner as loss payee on the Owner's insurance and no draft or other instrument in payment of any loss will name any other party as a joint payee.

§ 11.3.11 The Contractor's Insurance Company shall acknowledge in writing to the Construction Manager that they have read and will comply with all requirements under Indemnification Section 3.18 of the General Conditions.

§ 11.4 ~~Loss of Use, Business Interruption, and Delay in Completion Insurance~~

~~The Owner, at the Owner's option, may purchase and maintain insurance that will protect the Owner against loss of use of the Owner's property, or the inability to conduct normal operations, due to fire or other causes of loss. The Owner waives all rights of action against the Contractor, Architect, and Construction Manager for loss of use of the Owner's property, due to fire or other hazards however caused.~~

Performance Bond and Payment Bond

§ 11.5 ~~Adjustment and Settlement of Insured Loss~~

§ 11.5.1 ~~A loss insured under the property insurance required by the Agreement shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.5.2. The Owner shall pay the Construction Manager, Architect and Contractor their just shares of insurance proceeds received by the Owner, and by appropriate agreements the Construction Manager, Architect and Contractor shall make payments to their consultants and Subcontractors in similar manner.~~

§ 11.5.2 ~~Prior to settlement of an insured loss, the Owner shall notify the Contractor of the terms of the proposed settlement as well as the proposed allocation of the insurance proceeds. The Contractor shall have 14 days from receipt of notice to object to the proposed settlement or allocation of the proceeds. If the Contractor does not object, the Owner shall settle the loss and the Contractor shall be bound by the settlement and allocation. Upon receipt, the Owner shall deposit the insurance proceeds in a separate account and make the appropriate distributions. Thereafter, if no other agreement is made or the Owner does not terminate the Contract for convenience, the Owner and Contractor shall execute a Change Order for reconstruction of the damaged or destroyed Work in the amount allocated for that purpose. If the Contractor timely objects to either the terms of the proposed settlement or the allocation of the proceeds, the Owner may proceed to settle the insured loss, and any dispute between the Owner and Contractor arising out of the settlement or allocation of the proceeds shall be resolved pursuant to Article 15. Pending resolution of any dispute, the Owner may issue a Construction Change Directive for the reconstruction of the damaged or destroyed Work.~~

§ 11.4.1 The Contractor shall furnish bonds covering faithful performance of the Contract and payment of obligations arising under it. Bonds must be obtained from a surety company or companies satisfactory to the Owner, licensed to do business in the State of New York, and listed in the latest issue of U.S. Treasury Circular 570. The amount of each bond will be equal to one hundred (100) percent of the Contract Sum. Each bond must be maintained throughout the duration of the Project, and subsequently to the extent the Contractor has ongoing performance and payment obligations following completion of the Project.

§ 11.4.1.1 No Performance or Payment Bond shall require, as a condition precedent to termination of a Contract or Contractor, that any notice be sent to or meeting be arranged or held with a Contractor (Principal) and/or surety, prior to such termination. Any such requirement(s) shall be void and unenforceable and the Owner shall have the right to reject any such bond(s) and/or ignore such condition. The exclusive method of termination of a Contract or Contractor is contained in the Contract Documents and a Contractor and surety expressly agreed to be bound thereby.

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§ 11.4.1.2 Rider including the following provisions shall be attached to each Performance Bond: "Surety agrees that it consents to and waives notice of any addition, alteration, omission, change or other modification of the Contract Documents. Such addition, alteration, change extension of time or other modification of the Contract Documents or a forbearance on the part of either the Owner or the Contractor to the other, shall not relieve the surety of its obligations hereunder and notice to the surety of such matters is hereby waived"

§ 11.4.2 Bonds must be prepared on the forms of AIA Documents A312-2010 - Performance Bond and A312-2010 - Payment Bond, without modifications other than (1) a mandatory statement in Section 16 of the Performance Bond that it is given as a statutory or other legally required bond and that Section 13 of the Performance Bond applies in full, without exception, (2) a mandatory statement in Section 16 of the Performance Bond that it includes performance by the Contractor of any correction and warranty obligations in the Contract Documents, including such performance after the dates of Substantial and Final Completion, and (3) a mandatory statement in Section 18 of the Payment Bond that it is given as a statutory or other legally required bond and that Section 14 of the Payment Bond applies in full, without exception. The cost of the bonds is included in and will not increase the Contract Sum.

.1 The Contractor shall deliver the required bonds to the Owner not later than 7 days following the date the Agreement is entered into and before commencing any of the Work.

.2 The Contractor shall require any attorney-in-fact who executes the required bonds on behalf of the surety to affix to the bonds a certified and current copy of their power of attorney authorizing him or her to sign the bond.

.3 The bonds must specifically name the Nanuet Union Free School District as Obligee.

§ 11.4.3 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.

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§ 12.1.2 If a portion of the Work has been covered ~~that~~ which the Construction Manager or Architect has not specifically requested to ~~examine~~ observe prior to its being covered, the Construction Manager or Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, ~~the Contractor shall be entitled to an equitable adjustment to the Contract Sum and Contract Time as may be appropriate.~~ costs of uncovering and replacement shall, by appropriate Change Order, be at the Owner's expense. 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.~~such costs and the cost of correction shall be at the Contractor's expense unless the condition was caused by the Owner or one of the other Contractors in which event the Owner shall be responsible for payment of such costs.

...

§ 12.2.1 ~~Before Substantial Completion~~Before or After Substantial Completion

The Owner, through its Architect or Construction Manager, shall have the authority to reject Work performed by the Contractor that does not conform to the requirements of the Drawings, Specifications, or both. The Contractor shall promptly correct Work rejected by the Construction Manager or Architect or failing to conform to the requirements of the Contract Documents, ~~discovered before Substantial Completion,~~ whether discovered before or after Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Construction Manager's and Architect's services and expenses made necessary thereby, shall be at the Contractor's expense.

...

§ 12.2.2.1 ~~In addition to the Contractor's obligations under Section 3.5, if, within one year~~ If, within two years after the date of Substantial Completion of the Work or ~~designated portion thereof,~~ a designated portion of the Work, or the date of acceptance of a portion of the Work that is subject to correction or completion after the date of Substantial Completion of the Work, whichever is later, 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

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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 obligation set forth hereunder shall survive acceptance by the Owner of the Work or termination of the Contract. The Owner shall give such notice promptly after discovery of the condition. ~~During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner, Construction Manager or Architect, the Owner may correct it in accordance with Section 2.5.~~

§ 12.2.2.2 The ~~one-year~~ two-year period for correction of the 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.~~Upon completion of any Work under or pursuant to this Section 12.2, the two-year period for correction of Work in connection with the Work requiring correction shall be renewed and recommence.

§ 12.2.2.4 The obligations shall cover any repair and replacement to any part of the Work or other property caused by the defective Work.

...

§ 12.2.3.1 If the Contractor fails to commence to correct, repair and make good any defects in its Work within a reasonable time, not to exceed ten (10) days from the date the Contractor received written notice from the Owner per Section 12.2.2.1, the Owner may correct it in accordance with Section 2.5 and the Contractor shall, upon demand, pay to the Owner all amounts which it expends for such corrective work.

§ 12.2.4 The Contractor shall bear the cost of correcting destroyed or damaged construction of the Owner, Multiple Prime Contractors or Separate Contractors, ~~or other Contractors,~~ whether completed or partially completed, caused by the Contractor's correction or removal of Work that is not in accordance with the requirements of the Contract Documents. The Contractor shall also replace or repair to satisfaction of Owner any and all damage done to the building or its contents in consequence of work performed in fulfilling any applicable warranty. This clause is general in nature and will not operate to waive stipulations of other clauses that specify warranty periods in excess of two (2) years.

§ 12.2.5 Nothing contained in this ~~Section 12.2~~ 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~~ two-year period for correction of Work as described in ~~Section 12.2.2~~ 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.

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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.~~ determined by the Owner, with the advice of the Construction Manager and Architect. Such adjustment shall be effected whether or not final payment has been made. For this Section to apply, the Owner must accept non-conforming Work in writing specifying the non-conforming Work being accepted. Notwithstanding any acceptance by the Owner, if the Owner discovers non-conforming Work that the Owner has not expressly accepted in writing, the Owner may demand that the Contractor correct such Work as per the provisions of Article 12 hereof.

...

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The Contract shall be governed by the law of the ~~place where the Project is located excluding that jurisdiction's choice of law rules. If the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4.~~State of New York, and the parties expressly agree that any claim, dispute, or other controversy of any nature arising out of the Contract or performance of the Work shall be commenced and maintained in New York State Supreme Court, Rockland County.

§ 13.1.2 The Contractor shall at all times observe and comply with all federal, state and local laws and all laws, ordinances and regulations of the Owner, in any manner affecting the Work and all such orders decreed as exist at present and those which may be enacted later, by bodies or tribunals having jurisdiction or authority over the Work, and the Contractor shall defend, indemnify and save harmless the Owner and its Board of Education, officers, agents, or servants against any claim or liability arising from, or based on, a violation of any such law, ordinances, regulation, order or decree, whether by himself or by his employee or agents. Historical lack of enforcement of any law, local or otherwise, shall not constitute a waiver of Contractor's responsibility for compliance with such law in a manner consistent with the Agreement unless and until the Contractor has received written consent for the waiver of such compliance from the Owner and the agency responsible for the enforcement of such law.

...

§ 13.3.2 ~~No action or failure to act by the Owner, Construction Manager, Architect, or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach thereunder, except as may be specifically agreed upon in writing.~~Neither the acceptance of all or any part of the work covered by the Contract; nor any payment therefore; nor any order or application for payment issued under the Contract or otherwise issued by the Owner, Architect, Construction Manager, or any board member, officer, agent or employee of the Owner; nor any permission or direction to continue with the performance of the Contract before or after its specified completion date; nor any performance by the Owner of any of the Contractor's duties or obligations; nor any aid lent to the Contractor by the Owner in its performance of such duties or obligations; nor any delay or omission by the Owner to exercise any right or remedy accruing to it under the terms of the Contract or existing at law or in equity or by statute or otherwise; nor any other thing done or omitted to be done by the Owner, its commissioners, officers, agents or employees; shall be deemed to be a release to the Contractor or its sureties from any obligations, liabilities or undertakings in connection with the Contract or the performance bond or a waiver of any provision of the Contract or of any rights or remedies to which the Owner may be entitled because of any breach thereof, excepting only a written instrument expressly providing for such release or waiver. No cancellation, rescission or annulment hereof, in whole or as to any part of the Contract, because of any breach hereof, shall be deemed a waiver of any money damages to which the Owner may be entitled because of such breach. No waiver by the Owner of any breach of the Contract shall be deemed to be a waiver of any other or any subsequent breach.

§ 13.3.3 The rights stated in these General Conditions and the Contract Documents are cumulative and not in limitation of any rights of the Owner at law or in equity.

§ 13.3.4 The Owner shall not be responsible for damages or for loss of anticipated profits on Work not performed on account of any termination of the Contractor by the Owner or by virtue of the Owner's exercise of its right to take over the Contractor's Work.

§ 13.3.5 The Owner shall not be liable to the Contractor for punitive damages on account of its termination of the Contractor or any other alleged breach of the Agreement and the Contractor hereby expressly waives its right to claim such damages against the Owner.

§ 13.3.6 The Contractor hereby expressly waives any rights it may have in law or in equity to lost bonding capacity as a result of any of the actions of the Owner, the Architect or the Construction Manager taken in connection with the Contractor's Work on the Project.

§ 13.3.7 The Contractor agrees that it waives the defense of privity of contract as between itself and each other Prime Contractor. In the event that an act or omission by a Prime Contractor or its Subcontractors of any tier causes impact, damage or loss in any form to the Contractor, then the Prime Contractor responsible in whole or in part for such impact, damage or loss agrees it is directly responsible and liable to the Contractor. The Contractor acknowledges and agrees that this waiver of the defense or privity of contract permits and requires it to commence an action or suit directly against the responsible Prime Contractor. The Owner, Architect and the Construction Manager shall not be

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parties to such suit. The Contractor waives and relinquishes any right and claim as against the Owner, to the extent such claim is caused, or contributed to, by a Prime Contractor or its Subcontractors of any tier.
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§ 13.4.1 Tests, ~~inspections,~~ 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,~~ rules and regulations or lawful orders of public authorities. Tests, inspections and approvals of portions of the Contractor's Work required by the Drawings or Specifications shall be made at an appropriate time. Unless otherwise provided, the Contractor shall ~~make arrangements~~ arrange for such tests, ~~inspections,~~ 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,~~ inspections and approvals. The Contractor shall give the Construction Manager and Architect timely notice of when and where tests and inspections are to be made so that the Construction Manager and Architect may be present for such procedures. The Owner shall bear costs of ~~tests, inspections,~~ (1) 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,~~ concluded, and (2) tests, inspections or approvals where building codes or applicable laws or regulations ~~so require.~~prohibit the Owner from delegating their cost to the Contractor.

§ 13.4.2 If the Construction Manager, Architect, ~~Owner,~~ Owner or public authorities having jurisdiction determine that portions of the Work require additional testing, ~~inspection,~~ inspection or approval not included under Section 13.4.1, the Construction Manager ~~and Architect will,~~ or Architect shall, upon written authorization from the Owner, instruct the Contractor to ~~make arrangements~~ arrange for such additional testing, ~~inspection, or approval,~~ inspection or approval by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Construction Manager and Architect of when and where tests and inspections are to be made so that the Construction Manager and Architect may be present for such procedures. Such costs, except as provided in Section 13.4.3, shall be at the Owner's expense.

§ 13.4.3 If such procedures for testing, ~~inspection,~~ 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,~~ failure including those of repeated procedures and compensation for the Construction Manager's and Architect's services and ~~expenses, shall be at the Contractor's expense.~~expenses shall be at the Contractor's expense, including the cost of retesting for verification of compliance if necessary until the Architect certifies that the Work in question does comply with the requirements of the Contract Documents, and none of such costs shall be included in computing the Contract Sum.

§ 13.4.4 Required certificates of testing, ~~inspection,~~ inspection or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Construction Manager for transmittal to the Architect.
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§ 13.4.7 Any material to be furnished shall be subject to inspections and tests in the shop and field by the Architect. Shop inspection shall not relieve the Contractor of the responsibility to furnish satisfactory materials and the right is reserved to reject any material at any time before final acceptance of the Work, when in the opinion of the Architect the materials and/or workmanship do not conform to the Specification requirements.

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.~~legal rate as required in General Municipal Law Section 106-b.

§ 13.6 Time Limits on Claims
§ 13.6.1 No action or proceeding shall lie or be maintained by the Contractor, nor anyone claiming under or through the Contractor, against the Owner upon any claim arising out of or based on the Agreement or the Contract Documents or by reason of any act or omission or requirements relating to the giving of notices and information, unless such action or proceeding shall be commenced within one (1) year after submission to the Owner of the final Application for Payment. As to a claim based upon money required to be retained for any period after the date of the final Application for Payment, such action must be commenced within six (6) months after such money becomes due and payable under the terms of the Contract. Notwithstanding, if the Contract is terminated by the Owner, such action by the Contractor must be commenced within six (6) months after the date of such termination. The Contractor's

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acceptance of final payment shall constitute a release of all claims against the Owner. This provision shall not relieve the Contractor of the obligation to comply with the provisions of the law relating to notices of claim.

§ 13.6.2 Acts or failures to act occurring during the construction of the Project or following the issuance of the final certificate for payment, which give rise to a cause of action shall be deemed to have accrued in any and all events not later than the date of any act or failure to act by the Contractor pursuant to any warranty provided under Section 3.5, the date of any correction of the Work or failure to correct the Work by the Contractor under Section 12.2, or the date of actual commission of any other act or failure to perform any duty or obligation by the Contractor, whichever occurs last.

§ 13.7 No Oral Waiver or Constructive Changes

The provisions of the Contract Documents shall not be changed, amended, waived, or otherwise modified in any respect except by a writing signed by the Owner. No person is authorized on behalf of the Owner to orally change, amend, waive, or otherwise modify the terms of the Contract Documents or any of the Contractor's duties or obligations under or arising out of the Contract Documents. Any change, waiver, approval, or consent granted to the Contractor shall be limited to the specific matters stated in the writing signed by the Owner, and shall not relieve the Contractor of any other of the duties and obligations under the Contract Documents. No "constructive" changes shall be allowed.

§ 13.8 Notices Regarding Liens

The Contractor shall provide to the Owner copies of all notices of any type regarding liens received from Subcontractors, Sub-subcontractors, or suppliers to the Contractor.

§ 13.9 Wages Rates

The Contractor shall, and cause its Subcontractors to, comply with prevailing wage rate determinations as issued by the State of New York Department of Labor for the location and duration of this Project. Current wage rates for this Project are included in the Project Manual.

§ 13.10 General Provisions

Any specific requirement in this Contract that the responsibilities or obligations of the Contractor also apply to a Subcontractor is added for emphasis and is also hereby deemed to include a Subcontractor of any tier. The omission of a reference to a Subcontractor in connection with any of the Contractor's responsibilities or obligations shall not be construed to diminish, abrogate or limit any responsibilities or obligations of a Subcontractor of any tier under the Contract Documents or the applicable subcontract.

§ 13.11 Written Notice

All notices to be given hereunder shall be in writing and may be given, served, or made by (1) depositing the same in the United States mail addressed to the authorized representative (as specified below) of the party to be notified, postpaid and registered or certified, read receipt requested or (2) depositing the same for overnight delivery (prepaid by and billed to the party giving notice) with a nationally recognized overnight delivery service addressed to the authorized representative of the party being notified or (3) delivering the same in person to the authorized representative of the party being notified or (4) emails to the attention of the authorized representative of the party to be notified with the requirement of a email confirmation notices deposited in the United States mail shall be effective, unless otherwise state in the Contract Documents, from and after the fourth day next following the date deposited in a United States mail receptacle or when actually received, whichever is earlier. Notices transmitted by overnight delivery shall be effective immediately. Email notices shall be effective as of the time received, as shown on a printed email confirmation.

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§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of ~~30~~ 90 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; or

.2 An act of government, such as a declaration of national emergency, that requires all Work to be stopped; or

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.3 Because the Construction Manager has not certified or the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section ~~9.4,~~ 9.4 and 9.5, 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.~~after 14 days written notice of such failure to make payment provided that such failure is not due to a disputed amount, and except to the extent the Owner is excused from timely making all or part of any payment on a Certificate for Payment as per any other provisions of the Contract Documents.

Notwithstanding the preceding or anything else in the Contract Documents, the Contractor shall not cease or delay the progress of the Work for any reason other than one set forth in Section 9.7.1, it being agreed that monetary damages shall be an adequate remedy for the Contractor for any breach of this Agreement or the Contract Documents by the Owner.

§ 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.~~completion.

§ 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, Construction Manager and Architect,~~ 30 days' written notice and opportunity to cure to the Owner, 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.~~such Work properly performed for which it has not otherwise been compensated, but in no event shall the Owner by liable to the Contractor for any prospective loss, including, but not limited to, termination expenses, loss of anticipated profits, impact damages, unabsorbed overhead, or the like. Notwithstanding the foregoing, any such payments to the Contractor shall be less any setoffs to which the Owner may be entitled as per any other provision of the Contract Documents.

§ 14.1.4 If the Work is stopped for a period of ~~60~~ 90 consecutive days through no act or fault of the ~~Contractor, a Subcontractor, a Sub-subcontractor,~~ Contractor or a Subcontractor or their agents or ~~employees,~~ employees or any other persons performing portions of the Work under contract with the Contractor 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~~ 30 additional days' written notice to the Owner, Construction Manager ~~and Architect,~~ and Architect (during which the Owner shall have the right and opportunity to cure), terminate the Contract and recover from the Owner as provided in Section 14.1.3.

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.1 ~~repeatedly~~ refuses or fails to supply enough properly skilled workers or proper ~~materials;~~materials or equipment to complete the Work in a diligent, efficient, timely, workmanlike, skillful, and careful manner;

.2 fails to make payment to Subcontractors ~~or suppliers~~ or Suppliers for materials or labor in accordance with the respective agreements between the Contractor and ~~the~~ its Subcontractors or ~~suppliers;~~Suppliers;

.3 ~~repeatedly~~ disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public ~~authority; or~~authority, or its health and safety plan;

.4 otherwise is guilty of substantial breach of ~~a provision of the Contract Documents.~~or default under a provision of the Contract Documents;

.5 cannot complete the Work within the Contract Time or within the time to which such completion may have been extended; provided, however, that the impossibility of timely completion is, in the Owner's opinion, attributable to conditions within the Contractor's control;

.6 breaches any warranty made by the Contractor under or pursuant to the Contract Documents;

.7 is or has been unnecessarily or unreasonably or willfully delaying the performance and completion of the Work, or the award of necessary subcontracts, or the placing of necessary material and equipment orders;

.8 fails to furnish the Owner with assurances satisfactory to the Owner evidencing the Contractor's ability to complete the Work in compliance with all requirements of the Contract Documents;

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.9 refuses to proceed with the Work or extra work when and as directed by the Owner, Construction Manager or Architect;

.10 fails after commencement of the Work to proceed continuously with the construction and completion of the Work for more than 10 days, except as permitted under the Contract Documents;

.11 fails or neglects to complete the Work within the Contract Time or in accordance with the Construction Schedule;

.12 refuses or fails to correct deficient Work performed by it;

.13 the Contractor's progress of the Work is such that the Owner reasonably believes that the Contractor shall not be able to achieve Substantial Completion by the Substantial Completion Date and the Contractor has not delivered and implemented a recovery plan required under the Contract or has not recovered the schedule sufficient to meet the respective Contract Time requirements as required by written notice to the Contractor by the Owner; or

.14 disregards the instructions of the Construction Manager, Architect or Owner (when such instructions are based on the requirements of the Contract Documents).

§ 14.2.2 When any of the ~~reasons described in Section 14.2.1 exist, after consultation with the Construction Manager, and upon certification by the Architect that sufficient cause exists to justify such action, the Owner may,~~ above reasons exist, 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 (7) days' written notice, terminate employment of the Contractor at the expiration of such seven (7) day period, and may, subject to any prior rights of the surety:

...

.3 Finish the Work by whatever reasonable method the Owner may deem ~~expedient.~~ expedient utilizing for such purpose such of the Contractor's plant, materials, equipment, tools and supplies remaining on the site, and also such subcontractors as it may deem advisable, or if may call upon the Contractor's surety at its own expense to do so. 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. Such accounting shall be final, binding and conclusive upon the Contractor, its surety, and any person claiming under or through the Contractor, as to the amount thereof.

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§ 14.2.4.1 The costs of finishing the Work also include, without limitation, all reasonable attorneys' fees incurred in responding to the default and enforcing the Owner's rights under the Contract Documents (including costs and fees incurred in dispute resolution proceedings), additional title costs, insurance, additional interest because of any delay in completing the Work, loss of State Building Aid, and all other direct and consequential damages incurred by the Owner by reason of the termination of the Contractor as stated herein.

§14.2.4.2 It is recognized that: (1) if an order for relief is entered on behalf of Contractor pursuant to Title 11 of the United States Code, (2) if any other similar order is entered under any other debtor relief laws, (3) if Contractor makes a general assignment for the benefit of its creditors, (4) if a receiver is appointed for the benefit of its creditors, or (5) if a receiver is appointed on account of its insolvency, any such event could impair or frustrate Contractor's performance of the Contract. Accordingly, it is agreed that upon the occurrence of any such event, Owner shall be entitled to request of Contractor or its successor in interest adequate assurance of future performance in accordance with the terms and conditions of the Contract. Failure to comply with such request within ten (10) days of delivery of the request, or Owner's determination that the assurances are not adequate, shall entitle Owner to terminate the Contract and to the accompanying rights set forth in Subparagraphs 14.2.1 through 14.2.4 hereof. In all events pending receipt of adequate assurance of performance and actual performance in accordance therewith, Owner shall be entitled to proceed with the Work with its own forces or with other Contractors on a time and material or other appropriate basis, the cost of which will be back charged against the Contract Sum.

§ 14.2.5 If the Owner wrongfully terminates the Contract for cause, the rights, remedies and obligations of the parties will be the same as if the Owner had terminated the Contract for convenience under Section 14.4.

§ 14.2.6 In the event that the Contractor, or the Contractor's surety, challenges the Owner's termination of the Contract for cause, and the Owner prevails in litigation in connection with such challenge, whether initiated by the

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Owner or by the Contractor or the Contractor's surety, the Owner shall be entitled to its costs, including reasonable attorney's fees, incurred as a result of such litigation, as part of any judgment against the Contractor or the Contractor's surety. Such costs, including reasonable attorney's fees, shall be deemed a cost of finishing the Work.

§ 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. The Owner shall incur no liability by reason of such suspension, delay, or interruption except that the Contractor may request an extension of its time to complete its Work in accordance with Article 8 hereof.

...

§ 14.3.2 The Contract ~~Sum and the Contract~~ Time shall be adjusted for increases in ~~the cost and time caused by suspension, delay, or interruption under Section 14.3.1. Adjustment of the Contract Sum shall include profit.~~ time caused by suspension, delay or interruption as described in Section 14.3.1. No adjustment shall be made to the extent:

.1 that performance is, ~~was, or would have been, so suspended, delayed, or interrupted,~~ was or would have been so suspended, delayed or interrupted by another cause for which the Contractor is responsible; or

§ 14.4.1 The Owner may, at any time, terminate the whole or any portion of the Contract for the Owner's convenience and without ~~cause.~~cause upon not less than seven (7) days' written notice to the Contractor. Notwithstanding any other provision to the contrary in the Contract, the Owner reserves the right at any time and in its absolute discretion to terminate the services of the Contractor or the Work by giving written notice to the Contractor. This termination for convenience of the Owner provision allows and authorizes the Owner to terminate this Contract at any time and for any reason whatsoever. This right may be exercised by the Owner in its complete discretion. Termination by the Owner under this Section shall be by Notice of Termination delivered to the Contractor specifying the extent of termination and the effective date.

§ 14.4.2 Upon receipt of written notice from the Owner of such termination for the Owner's convenience, the Contractor shall immediately and in accordance with instructions from the Owner:

...

.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.~~orders; and

.4 proceed to complete the performance of the Work required under portions of the Contract not terminated, if any.

§ 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.~~Upon receipt of written notice of the Owner's exercise of such termination, the Contractor shall, as the Contractor's sole and exclusive remedy, be paid for the Work properly executed in accordance with the Contract Documents prior to the effective date of termination and for items properly fabricated off-site, delivered and stored in accordance with the Owner's instructions or the Contract Documents before such effective date. The Contractor's entitlement to payment for all such work shall be predicated on its performance of such work in accordance with the Contract Documents as certified by the Architect and Construction Manager. The Contractor shall be entitled to no other payment and waives any claim for damages including, but not limited to, lost profits, any prospective loss, underutilization of personnel or equipment, unabsorbed overhead, and any and all items of consequential loss or damage. The Owner shall be entitled to credit against any payment to be made to the Contractor pursuant to this Section 14.4 the following: (1) payments previously made to the Contractor for the terminated portion of the Work; (2) claims which the Owner has against the Contractor under the Contract Documents; and (3) the value of the materials, supplies, equipment, or other items that are to be disposed of by the Contractor, the cost of which is included in the Contract Sum. Notwithstanding the foregoing, in the event of a termination under Section 14.4.1 prior to the issuance of a Notice to Proceed, the Contractor shall not be entitled to any compensation whatsoever.

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...

§ 15.1.1 Definition. A Claim is a demand or assertion by ~~one of the parties~~ the Contractor 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.~~Neither a Request for Information, nor a Construction Change Directive, nor a Change Order, nor a reservation of rights, nor minutes of a meeting, nor a daily report, nor any log entry, nor an Owner's request for or the Contractor's response to a Change Order proposal, nor notice of a potential or future claim shall constitute a Claim.

...

~~The Owner and Contractor shall commence all Claims and causes of action against the other and arising out of or related to the Contract, whether in contract, tort, breach of warranty or otherwise, in accordance with the requirements of the binding dispute resolution method selected in the Agreement and within the period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all Claims and causes of action not commenced in accordance with this Section 15.1.2.~~

§ 15.1.2.1 Claims by the Contractor must be initiated by written notice to the Owner and the Initial Decision Maker. Claims by the Contractor must be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the Contractor first recognizes the condition giving rise to the Claim, whichever is earlier.

§ 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 Construction Manager and 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.~~the Contractor must be initiated by written notice to the Owner and to the Architect with a copy sent to the Construction Manager within the time limits set forth in Section 15.1.2.1 above. The purpose of the written notice is to give the Owner prompt opportunity: (a) to cancel or revise orders or directions, change plans, mitigate or remedy circumstances giving rise to the Claim or to take other action that may be desirable; (b) to monitor and verify the facts and circumstances as they occur; and (c) to verify any costs and expenses claimed by the Contractor contemporaneously as they are incurred. Written notice is required whether or not the Owner, Construction Manager or Architect is aware of the facts or circumstances that constitute the basis for the Contractor's Claim, and no action or conduct of the Owner, Construction Manager, Architect or any other person will be regarded as a waiver of such notice requirement except only a written statement to such effect signed by the Owner. Failure of the Contractor to give written notice as required by this Section shall be deemed conclusively to be a waiver and release of any Claim, and such written notice shall be a condition precedent to the Contractor's right to make any Claim arising out of, under or in connection with the Contract or its performance of the Work.

§ 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.~~Written notice shall contain a heading stating "Notice of Claim" to clearly identify it as such. Such notice shall set forth in detail the circumstances that form the basis for the Claim and shall include the following: (1) a clear statement of the claim, including background and chronology; (2) documentation in support of the claim; (3) documentation in support of claimed damages; and (4) certification by responsible officer of the Contractor. The responsibility to substantiate Claims shall rest with the Contractor. An additional Claim arising from the same occurrence or condition made after the Initial Claim has been implemented by Change Order shall not be considered.

§ 15.1.3.3 The Contractor agrees that it has and will make no claim for damages against the Owner by reason of any act or failure to act by any other Contractor, Separate Contractor or Subcontractors having contracts for performance of any portion of work of the Project or in connection with the Owner's, Architect's or Construction Manager's acts or omissions to act in connection with such other Contractors, Separate Contractors or Subcontractors.

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§ 15.1.4.1 Pending final resolution of a ~~Claim,~~ Claim by the Contractor, except as otherwise agreed in writing or as provided in Section ~~9.7 and Article 14,~~ 9.7, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments ~~in accordance with the Contract Documents.~~of undisputed amounts in accordance with the Contract Documents; provided, however, that the Contractor shall use its best efforts to furnish the Architect and Owner, as expeditiously as possible, with notice of any Claim including, without limitation, those in connection with concealed or unknown conditions, once such Claim is recognized, and shall cooperate with the Architect and the Owner in any effort to mitigate the alleged or potential damages, delay or other adverse consequences arising out of the condition which is the cause of such a Claim. The Construction Manager will prepare Change Orders and the Architect will issue a Certificate for Payment or Project Certificate for Payment in accordance with the decisions of the Initial Decision Maker.

~~**§ 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, written notice as provided ~~in Section 15.1.3~~ herein shall be given before proceeding to execute the ~~portion of the Work that is the subject of the Claim.~~ Work. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section ~~10.4.~~10.3. The Contractor agrees that an express condition precedent to the Contractor's entitlement to any increase in the Contract Sum shall be full and complete compliance to the satisfaction of the Owner with the requirements of Article 15. The Contractor acknowledges the no damages for delay provisions set forth in Sections 8.3.2 and 15.1.6.1.4 hereof.

§ 15.1.5.1 The Contractor shall not be entitled to any adjustment in the Contract Sum or Contract Time if:

.1 The Contractor knew of the existence of such conditions at the time Contractor made a final commitment to Owner in respect of Contract Sum and Contract Times by the submission of a bid or becoming bound under a negotiated contract; or

.2 The existence of such condition could reasonably have been discovered or revealed as a result of any examination, investigation, exploration, test or study of the site and contiguous areas required by the Bidding Requirements or Contract Documents to be conducted by or for the Contractor prior to Contractor's making such final commitment;

.3 The Contractor failed to give the written notice within the time and as required by Section 15.1.2; or

.4 If the Owner and the Contractor are unable to agree on entitlement to or as to the amount or length of any such equitable adjustment in the Contract Sum or Contract Times, a claim may be made therefore as provided in Article 15. However, the Owner, Construction Manager, and Architect shall not be liable to the Contractor for any claims, costs, losses or damages sustained by the Contractor on or in connection with any other project or anticipated project.

...

§ 15.1.6.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, notice as provided in ~~Section~~ Sections 15.1.2 and 15.1.3 shall be given. The Contractor's Claim shall include an estimate of ~~cost and of~~ the probable effect of delay on progress of the Work. In the case of a continuing delay only one Claim is necessary.

§ 15.1.6.1.1 An application for extension of time must set forth in detail the circumstances that form the basis for the Claim, the date upon which each cause of delay began to affect the progress of the Work, the date upon which each cause of delay ceased to affect the progress of the Work and the number of days' increase in the Contract Time claimed as a consequence of each such cause of delay. The Contractor shall provide such supporting documentation as the Owner, Construction Manager or Architect may require including, where appropriate, a revised construction schedule indicating all the activities affected by the circumstances forming the basis of the Claim for an increase in the Contract Time.

§ 15.1.6.1.2 The Contractor shall not be entitled to a separate increase in the Contract Time for each one of the number of causes of delay which may have concurrent or interrelated effects on the progress of the Work, or for concurrent delays due to the fault of the Contractor.

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§ 15.1.6.1.3 The Contractor agrees that an express condition precedent to the Contractor's entitlement to any extension of the Contract Time shall be full and complete compliance to the satisfaction of the Owner with the requirements of Articles 8 and 15.

§ 15.1.6.1.4 The Owner shall not be liable to the Contractor or any of its Subcontractor for claims, impact costs, extended general conditions or delay damages of any nature caused by or arising out of delay, disruption, interference, inefficiencies, impedance, hindrance, acceleration, resequencing, schedule impacts, lack of timeliness by the Owner or its Architect or Construction Manager, and lack of coordination or scheduling, cumulative impact of multiple change orders, errors or omissions in the design of the Project, delay and other performance impacts. The sole remedy against the Owner for such 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. Except to the extent, if any, expressly prohibited by law, the Contractor expressly agrees not to make and hereby waives any claim for damages for delay, including, but not limited to, those resulting from increased labor or material costs, extended general conditions, directions given or not given by the Owner, Construction Manager, or Architect, including scheduling and coordination of the Work; the Architect's preparation of drawings and specifications or the Construction Manager's or Architect's review of shop drawings and requests for instructions; errors or omissions in the design of the Project; or, on account of any delay, disruption, interference, impedance, inefficiency, lack of productivity, obstruction or hindrance for any cause whatsoever by the Owner, Construction Manager, Architect or any other Contractor or Separate Contractor on the Project whether or not foreseeable or anticipated. The Contractor agrees that its sole right and remedy therefore shall be an extension of time, if appropriate. It is emphasized that no monetary recovery may be obtained by the Contractor for delay against the Owner, Construction Manager, Architect, other Contractor or Separate Contractor based on any reason and that the Contractor's sole remedy, if appropriate, is additional time.

§ 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. In planning his construction schedule within the agreed Contract Time, it shall be assumed that the Contractor has anticipated the amount of adverse weather conditions normal to the site of the Work for the season or seasons of the year involved. Only those weather delays attributable to other than normal weather conditions will be considered by the Architect.

§ 15.1.7 Waiver of Claims for Consequential Damages. The Contractor ~~and Owner waive Claims against each other for consequential damages~~ waives any and all claims for consequential damages of any kind and nature 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.~~waiver of consequential damages shall survive termination of the Contract.

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§ 15.2.1 ~~Claims,~~ Claims by the Contractor, excluding those where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2 or arising under Sections 10.3, 10.4, and 11.5, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims by the Contractor excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to ~~mediation~~ binding dispute resolution of any Claim. If an initial decision has not been rendered within 30 days after the Contractor's Claim has been referred to the Initial Decision Maker, the ~~party asserting the Claim may demand mediation and~~ Contractor may proceed with 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.

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§ 15.2.2 The Initial Decision Maker will review Claims by the Contractor 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,~~ Claims by the Contractor, 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 by the Contractor or to furnish additional supporting data, such party shall respond, within ~~ten~~ 10 days after receipt of ~~the~~ such 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,~~ 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 by the Contractor in whole or in part.

§ 15.2.5 The Initial Decision Maker will render an initial decision approving or rejecting the ~~Claim,~~ Claim by the Contractor, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the ~~parties, the Construction Manager, and the Architect, if the Architect~~ parties and the Architect and Construction Manager, if the Architect or Construction Manager 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.~~Intentionally omitted.

§ 15.2.6.1 ~~Either party may, within 30 days from the date of receipt of an initial decision, demand in writing that the other party file for mediation. If such a demand is made and the party receiving the demand fails to file for mediation within 30 days of receipt thereof, then both parties waive their rights to mediate or pursue binding dispute resolution proceedings with respect to the initial decision.~~Intentionally omitted.

§ 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.~~Intentionally omitted.

§ 15.2.8 If a Claim by the Contractor 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.

ARTICLE 16 SPECIAL CONDITIONS

§ 16.1 Equal Opportunity

§ 16.1.1 The Contractor shall maintain policies for equal employment opportunity for construction employment. During performance of the Agreement, the Contractor agrees as follows:

§ 16.1.2 The Contractor and its Subcontractors shall not discriminate against any employee or applicant for employment because of race, religion, color, sex (including trans-gender), sexual orientation, or national origin. The Contractor shall take affirmative action to ensure that all applicants are employed, and that employees are treated during employment without regard to their race, religion, color, sex, (including trans-gender), sexual orientation, or national origin. Such action shall include, but not be limited to, the following: employment, upgrading, demotion or transfer; recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship and on-the-job training.

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§ 16.1.3 The Contractor will post and keep posted in conspicuous places, for employees and applicants for employment, notices obtained by the Contractor from the New York State Division of Human Rights as set forth in the General Regulations of that Division at 9 NYCRR 466.1(a), such conspicuous places to be as defined in 9 NYCRR 466.1(b), and such other postings as that Division may require with respect to New York State's laws, codes, rules, and regulations governing discrimination in employment.

§ 16.1.4 The Contractor will state in all solicitations or advertisements for employees placed by, or on behalf, of the Contractor, that all qualified applicants will be afforded equal employment opportunities without discrimination because of race, creed, color ,sex, (including trans-gender), sexual orientation, or national origin.

§ 16.1.5 The Contractor will comply with provisions of Sections 290-299 of the Executive Law and with the Civil Rights Law, will furnish all information and reports deemed necessary by the State Commissioner of Human Rights under these non-discrimination clauses and such sections of the Executive Law, and will permit access to the Contractor's books, records and accounts by the Owner, the State Commissioner of Human Rights, the Attorney General and the Industrial Commissioner for the purposes of investigation to ascertain compliance with these nondiscrimination clauses and such sections of the Executive Law and Civil Rights Law.

§ 16.1.6 The Contractor will send to each labor union, or representatives of workers, with which it has, or is bound by a collective bargaining or other Agreement or understanding notices obtained from the State Commissioner of Human Rights, advising such Labor Union or representative of the Contractor's Agreement under requirements of this Article. If the Contractor was directed to do so by Owner as part of the Bid, the Contractor shall request such labor union or representative to furnish him with a written statement that such labor union or representative will not discriminate because of race, creed, color, sex, (including trans-gender), sexual orientation, or national origin and that such labor union or representative either will affirmatively cooperate within the limits of its legal and contractual authority in the implementation of the policy and provisions of these non-discrimination clauses or that it consents and agrees that recruitment accordance with the purposes and provisions of these non-discrimination clauses. If such labor union or representative fails or refuses to comply with such a request that it furnish such a statement, the Contractor shall promptly notify the Owner and State Commissioner of Human Rights of such failure or refusal.

§ 16.1.7 The Agreement may be forthwith canceled, terminated or suspended in whole, or in part, by Owner upon the basis of a finding made by the State Division of Human Rights, that the Contractor has not complied with these non-discrimination clauses, and the Contractor may be declared ineligible for future Contracts made by, or in behalf of, the State, or Authority or Agency of the State, or Housing Authority or an Urban Renewal Agency, or Contracts requiring the approval of the Commissioner of Housing and Community Renewal, until it has satisfied the State Division of Human Rights, that it has established and is carrying out a program in conformity with the provisions of these non-discrimination clauses. Such findings shall be made by the State Division of Human Rights after conciliation efforts by the Division have failed to achieve compliance with these non-discrimination clauses and after a verified complaint has been filed with the Division, notice thereof has been given to the Contractor, and an opportunity has been afforded by the Contractor to be heard publicly in accordance with the Executive Law. Such sanctions may be imposed and remedies invoked immediately of, or in addition to sanction in remedies otherwise provided by law. If the Agreement is canceled or terminated under provisions of this Article, in addition to other rights of Owner provided in the Agreement upon its breach by the Contractor, the Contractor will hold Owner harmless against any additional expenses or costs incurred by Owner in completing the work or in purchasing the services, materials, equipment or supplies contemplated by Agreement and Owner may withhold payments from the Contractor in an amount sufficient for this purpose and recourse may be had against authority on the Performance Bond if necessary.

§ 16.1.8 The Contractor will include the provisions of this Article in every subcontract or purchase order in such a manner that such provisions will be binding upon each subcontractor or vendor as to operations to be performed within the State of New York. The Contractor will take such action in enforcing such provisions of such subcontractor or purchase order as the State Division of Human Rights or the Owner may direct, including sanctions or remedies for non-compliance. If the Contractor becomes involved in or is threatened with litigation with a subcontractor or a vendor, as a result of such direction by the State Division of Human Rights, the Contractor shall promptly so notify the Owner and the Attorney General, requesting the Attorney General to intervene and protect the interests of the State of New York.

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§ 16.2 Waiver of Immunity

§ 16.2.1 The Contractor hereby agrees to the provisions of Paragraph 139-a and l39-b of the New York State Finance Law and Section 103-a of the New York General Municipal Law, which require that upon the refusal of a person, when called before a grand jury, head of a State department, temporary State commission or other State agency, or the organized crime task force in the Department of Law, which is empowered to compel the attendance of witnesses and examine them under oath, to testify in an investigation concerning any transaction or contract had with the State, any political subdivision thereof, a public authority or with any public department, agency or official of the State or of any political subdivision thereof or of a public authority, to sign a waiver of immunity against subsequent criminal prosecution or to answer any relevant question concerning such transaction or contract.

§ 16.2.1.1 Such person, and any firm, partnership or corporation of which he is a member, partner, director or officer shall be disqualified from thereafter selling to or submitting bids to or receiving awards from or entering into any contracts with New York State or any public department, agency or official thereof for goods, work or services, for a period of five years after such refusal.

~~**§ 15.3 Mediation**~~

§ 16.2.1.2 Any and all contracts made with the State of New York, or any public department, agency or official thereof since the effective date of this law, by such person, and by an firm, partnership or corporation of which he is a member, partner, director or officer may be canceled or terminated by the State of New York without incurring any penalty or damages on account of such cancellation or termination, but any moneys owning by the State of New York for goods delivered or work done prior to the cancellation or termination shall be paid.

§ 16.3 Non-Collusive Clause as Required by NYS General Municipal Law Section 103-d

~~**§ 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.~~

§ 16.3.1 Every bid or proposal hereafter made to a political subdivision of the state or any public department, agency or official thereof where competitive bidding is required by statute, rule, regulation or local law, for work or services performed or to be performed or goods sold or to be sold, shall contain the following statement subscribed by the bidder and affirmed by such bidder as true under the penalties of perjury: Non-collusive bidding certification.

~~**§ 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.~~

§ 16.3.2 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 knowledge and belief, the following:

~~**§ 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.~~

§ 16.3.2.1 The prices in this bid have been arrived at independently without collusion, consultation, communication, or agreement, for the purpose of restricting competitions, as to any matter relating to such prices with any other bidder or with any competitor.

§ 16.3.2.2 Unless otherwise required by law, the prices which have been quoted in this bid have not been knowingly

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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.

~~**§ 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.~~

§ 16.3.2.3 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.

§ 16.3.3 A bid shall not be considered for award nor shall any award be made where requirements of this Article have not been complied with; provided however, that in any case the bidder cannot make the foregoing certification, the bidder shall so state and shall furnish with the bid a signed statement which set forth in detail the reasons therefore. Where requirements of this Article have not been complied with, the bid shall not be considered for award nor shall any award by made unless the head of the purchasing agent of the political subdivision, public department, agency or official thereof to which the bid is made, or his designee, determines that such disclosure was not made for the purpose of restricting competition.

~~**§ 15.4 Arbitration**~~

§ 16.3.4 The fact that a bidder (a) has published price lists, rates, or tariffs covering items being procured, (b) has informed prospective customers of proposed, or pending, publication of new or revised price list for such items, or (c) has sold the same items to other customers at the same prices being bids, does not constitute a disclosure within the meaning of this Article.

§ 16.3.5 Any bid hereafter made to any political subdivision of the state or any public department, agency official thereof by a corporate bidder for work or services performed or to be performed or good sold or to be sold, where competitive bidding is required by statute, rule, regulation, or local law, and where such bid contains the certification referred to in subdivision one of this section, shall be deemed to have been authorized shall be deemed to include the signing and submission of the bid and the inclusion therein of the certificate as to non-collusion as the act and deed of the corporation.

~~**§ 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.~~

§ 16.4 Assignment of Public Contracts

As provided in Section 109 of the General Municipal Law, the Contractor is prohibited from assigning, transferring, conveying, subletting or otherwise disposing of the same, or of his right title, or interest therein, or his power to execute such contract or any other person or corporation without the previous consent in writing of the officer, board or agency awarding the contract. If any contractor, to whom any contract is let, granted and awarded, as required by law, by any officer, board or agency in a political subdivision, or of any district therein, shall without the previous written consent specified in subdivision one of this section, assign, transfer, convey, sublet or otherwise dispose of such contract, or his right, title or interest therein, or his power to execute such contract, to any other person or corporation, the officer, board or agency which let, made, granted, or awarded such contract shall revoke and annul such contract, and the political subdivision or district therein, as the case may be, and such officer, board or agency shall be relieved and discharged form any and all liability and obligations growing out of such contract to such contractor, and to the person or corporation to which such contract shall have been assigned, transferred, conveyed, sublet or otherwise disposed of, and such contractor, and his assignees, transferees or sublessees shall forfeit and lose all moneys, theretofore earned under such contract, except so much as may be required to pay his employees. The provisions of this section shall not hinder, prevent, or affect an assignment by any such contractor for the benefit of his creditors made pursuant to the laws of this state.

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§ 16.5 Fingerprinting

Pursuant to the Safe Schools Against Violence in Education Act ("SAVE" legislation) and Part 87 of the Regulations of the Commissioner of Education, any individual who, as a result of their work on this capital project, will move (or migrate) in and out of student occupied areas for more than five (5) days a year, must be fingerprinted. The Contractor shall be responsible to ensure that it (and its employees) are in full compliance with the fingerprinting provisions New York's SAVE Legislation and Part 87 of the Regulations of the Commissioner of Education at the Contractor's sole cost and expense.

~~**§ 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.~~

ARTICLE 17 NEW YORK STATE LABOR LAW REQUIREMENTS

§ 17.1 Working Hours

~~**§ 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.~~

§ 17.1.1 The Contractor specifically agrees as required by the New York State Labor Law ("Labor Law"), Sections 220 and 220-d, as amended, that:

.1 No laborer, worker, or mechanic in the employ of the Contractor, Subcontractor or other person doing or contracting to do the whole or any part of the work included in the Contract Documents shall be permitted or required to work more than eight hours in any one calendar day or more than five (5) days in any one week, except to the extent permitted in the case of extraordinary emergencies described in the Labor Law.

.2 The wages to be paid to each laborer, worker, or mechanic in the employ of the Contractor, Subcontractor, or other person doing or contracting to do all or any part of the work included in the Contract Documents for a legal day's work shall be not less than the prevailing rate of wages as defined by the Labor Law.

.3 Each laborer, workman or mechanic employed by the Contractor, a Subcontractor, or other person doing or contracting to do all or any part of the work included in the Contract Documents shall be provided the supplements required by Article 8 of the Labor Law.

.4 The minimum hourly rate of wage to be paid shall be not less than that stated in the General Conditions, and shall be as designated by the industrial Commissioner.

.5 The Contractor's and any Subcontractor's or other person's filing of payrolls in a manner prescribed by subdivision 3-a of Section 220 of the Labor Law shall be a condition precedent to the to the Owner's payment of any sums due and owing to the Contractor, Subcontractor or other party for work done on or with respect to the Project.

§ 17.2 Wage Rates

~~**§ 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.~~

§ 17.2.1 The Contractor specifically agrees, as required by the Labor Law, that the Contract may be forfeited and no sum paid for any work done thereunder on a second conviction for willfully paying less than:

.1 the prevailing wage rates as provided in Labor Law Section 220(3) as amended, or,

.2 the minimum wage rates as provided in Labor Law Section 220-d, as amended.

§ 17.2.2 The Contractor shall comply with Prevailing Wage Rates as issued by the State of New York Department of Labor for the location and duration of this Project. Current wage rates for this project are included in the Project Manual as part of the Contract Documents. The Contractor is responsible to regularly review "Prevailing Wage Schedules/Updates" available on the "Prevailing Wage/Public Work" link on State of New York Department of Labor "Business in New York" web page (www.labor.state.ny.gov) to identify and implement any applicable changes to Prevailing Wage Rates during the Project.

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~~§ 15.4.4 Consolidation or Joinder~~

§ 17.2.3 The Contractor shall comply with all the requirements of the Labor Law Section 220-a, as amended, regarding mandatory submission of certified payroll records, which shall be included with each application for payment.

~~§ 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.~~

§ 17.3 Anti-Discrimination

§ 17.3.1 The Contractor specifically agrees, as required by the provisions of Section 220-e of the Labor Law, as amended, that:

.1 In the hiring of employees for the performance of work under the Contract or any subcontract hereunder, no contractor, subcontractor, nor any person acting on behalf of such contractor or subcontractor, shall be reason of race, creed, color, sex (including transgender), sexual orientation, or national origin discriminate against any citizen of the State of New York who is qualified and available to perform the work to which the employment relates;

.2 No contractor, subcontractor, nor any person on its behalf, shall in any manner, discriminate or intimidate any employee hired for the performance of work under the contact on account of race, creed, color, sexual orientation, or national origin.

.3 There may be deducted from the amount payable to the Contractor by the Owner under the contract a penalty at fifty dollars for each person for each calendar day during which such person was discriminated against or intimidated in violation of the provisions of the contract; and

.4 The Contract may be canceled or terminated by the Owner, and all monies due or to become due thereunder may be forfeited for a second or any subsequent violation of the terms or conditions of this section of the Contract.

ARTICLE 18 GENERAL MUNICIPAL LAW REQUIREMENTS OF THE STATE OF NEW YORK

§ 18.1 Payment of Contractors and Subcontractors

§ 18.1.1 The Contractor specifically agrees it is bound by Section 106-b of the New York General Municipal Law.

ARTICLE 19 SPECIFIC CONFORMANCE TO THE LAWS OF THE STATE OF NEW YORK

§ 19.1 Statutory Requirements

§ 19.1.1 The parties agree that each is bound to the provisions of the laws of the State of New York governing bidding and contracting for public improvement projects, including but not limited to applicable provisions of the General Obligations Law, Labor Law, and General Municipal Law. To the extent any provisions in the Contract Documents conflict with any provisions of New York Law, the statutory provisions shall prevail and the conflicting provisions in the Contract Documents shall be deemed to conform to the statutory provisions.

§ 19.1.2 To the extent the laws of the State of New York governing bidding and contracting for public improvement projects mandate inclusion of specific terms in contracts for such improvements, but which are not already included in these General Conditions, such terms shall be deemed and hereby are incorporated into these General Conditions.~~§ 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.~~

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Certification of Document's Authenticity

AIA® Document D401™ – 2003

I, David Short, 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 16:06:07 ET on 07/28/2022 under Order No. 2114341191 from AIA Contract Documents software and that in preparing the attached final document I made no changes to the original text of AIA® Document A232™ – 2019, General Conditions of the Contract for Construction, Construction Manager as Adviser Edition, as published by the AIA in its software, other than those additions and deletions shown in the associated Additions and Deletions Report.

_____

(Signed)

_____

(Title)

_____

(Dated)

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AIA® Document G737™ – 2009

Summary of Contractors' Applications for Payment, *Construction Manager as Adviser Edition*

AIA Document G732, Application and Certificate for Payment, has been completed by each Contractor. The content of those G732 forms is summarized below.

In tabulations below, amounts are in US dollars.

APPLICATION NO.: 001
APPLICATION DATE:
PERIOD FROM:
PERIOD TO:
PROJECT NOS.: /

		A	B	C	D	E	F	G	H	I	J	K	L
DESCRIPTION OF WORK	CONTRACTOR'S NAME	ORIGINAL CONTRACT SUM	NET CHANGES IN THE WORK	CONTRACT SUM TO DATE	WORK IN PLACE TO DATE	STORED MATERIALS (Not in D or I)	TOTAL COMPLETED AND STORED TO DATE (D + E)	RETAIN-AGE %	RETAINAGE AMOUNT	PREVIOUS PAYMENTS	CURRENT PAYMENT (F – H – I)	BALANCE TO FINISH (C – F)	% COMPL. (F ÷ C)
		0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00%
		0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00%
		0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00%
		0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00%
		0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00%
		0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00%
		0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00%
		0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00%
		0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00%
		0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00%
		0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00%
		0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00%
		0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00%
		0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00%
		0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00%
		0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00%
		0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00%
		0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00%
		0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00%
		0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00%
		0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00%
TOTALS		0.00	0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00	0.00	0.00	0.00%

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AIA® Document G703® – 1992

Continuation Sheet

AIA Document G702®, Application and Certification for Payment, or G732™, Application and Certificate for Payment, Construction Manager as Adviser Edition, containing Contractor's signed certification is attached.
Use Column I on Contracts where variable retainage for line items may apply.

APPLICATION NO:	001
APPLICATION DATE:	
PERIOD TO:	
ARCHITECT'S PROJECT NO:	

A	B	C	D	E	F	G		H	I
ITEM NO.	DESCRIPTION OF WORK	SCHEDULED VALUE	WORK COMPLETED FROM PREVIOUS APPLICATION (D + E)	WORK COMPLETED THIS PERIOD	MATERIALS PRESENTLY STORED (NOT IN D OR E)	TOTAL COMPLETED AND STORED TO DATE (D + E + F)	% (G ÷ C)	BALANCE TO FINISH (C - G)	RETAINAGE (IF VARIABLE RATE)
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
		0.00	0.00	0.00	0.00	0.00	0.00%	0.00	0.00
	GRAND TOTAL	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**$0.00**	**0.00%**	**$0.00**	**$0.00**

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User Notes:

3B9ADA86

Insurance Certification

Bid or Project No. #_____ Name of Project:_____

Your insurance representative must complete the form below in order to be considered for the award of this bid or project, and it is important that you complete the Bidder's Acknowledgement section of this form. Please note that a certificate of insurance must accompany your bid submission in order for your bid to be considered.

Insurance Representative's Acknowledgement:

We have reviewed the insurance requirements set forth in the bid and are capable of providing such insurance to our insured in accordance with such requirements in the event the contract is awarded to our insured and provided our insured pays the appropriate premium.

Insurance Representative:

_____

Address:

_____

Are you an agent for the companies providing the coverage?

Yes_____ No_____

Date:_____

Insurance Representative Signature:_____

Bidder's Acknowledgement:

I acknowledge that I have received the insurance requirements of this bid and have considered the costs, if any, of procuring the required insurance and will be able to supply the insurance required in accordance with the bid, if it is awarded. I understand that a certificate of insurance must be submitted with my bid: and if it is not, the Nanuet Union Free School District may reject my bid and award to the next lowest bidder.

Firm name:_____

Address: _____

_____

Date:_____ _____

Bidders Signature

AIA® Document G716™ – 2004

Request for Information ("RFI")

TO:
Ofe Clarke:
oclarke@ksq.design
KSQ Design

FROM:

PROJECT:
Nanuet UFSD
Nanuet High School Elevator Addition

ISSUE DATE:

RFI No.

REQUESTED REPLY DATE:

PROJECT NUMBERS: 2111005.01 /

COPIES TO:

RFI DESCRIPTION: *(Fully describe the question or type of information requested.)*

REFERENCES/ATTACHMENTS: *(List specific documents researched when seeking the information requested.)*
SPECIFICATIONS: **DRAWINGS:** **OTHER:**

SENDER'S RECOMMENDATION: *(If RFI concerns a site or construction condition, the sender may provide a recommended solution, including cost and/or schedule considerations.)*

RECEIVER'S REPLY: *(Provide answer to RFI, including cost and/or schedule considerations.)*

BY	DATE	COPIES TO

Note: This reply is not an authorization to proceed with work involving additional cost, time or both. If any reply requires a change to the Contract Documents, a Change Order, Construction Change Directive or a Minor Change in the work must be executed in accordance with the Contract Documents.

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User Notes: (3B9ADA47)

Labor Rate Sheet

PROJECT Nanuet Union Free School District – Elevator Addition	**DATE**
	CONTRACT NO.
KSQ PROJ. # 2111005.01	**CONTRACTOR**

LABOR RATES

DIRECTIONS
All contractors are requested to submit a schedule of labor rates to be used for the duration of this project. Please provide a separate rate for each trade classification for the work of this contract. These rates will be used to determine labor charges on any additional work of this contract. (Submit a separate sheet for each wage period).

WAGE PERIOD

LABOR CLASSIFICATION

	Straight Time	Over Time	Double Time
Base Rate	$		
'Benefits	$		
Subtotal	$		
All Payroll Taxes _____ % of Base Rate	$		
Total Straight Time (Rate/Hour)	$		

LABOR RATE WORKSHEET

Contractor Name: _____ Date: _____

Address: _____ DASNY Project No.: _____

_____ Project Name: _____

Telephone Number: _____ County: _____

LABOR RATE BREAKDOWN (Use a separate worksheet for each trade and classification) Trade/Classification: _____

Check One Box Only: Union Shop: ☐ Local: _____

Open Shop: ☐

Effective Dates for Wage Rates: From: _____ To: _____

				REGULAR BASE RATE	PREMIUM TIME (only when directed)
A. BASE RATE PER HOUR					
BENEFITS (check all taxable benefits that apply)	Taxable Benefits	% per hour	$ per hour		
Vacation and Holiday	No		$0.00		
Health and Welfare	No		$0.00		
Pension	No		$0.00		
Annuity	No		$0.00		
Education / Apprentice Training	No		$0.00		
Supplemental Unemployment	No		$0.00		
Security Fund	No		$0.00		
	No		$0.00		
	No		$0.00		
	No		$0.00		
(Identify Taxable Benefits)	No		$0.00		
B. TOTAL BENEFITS PER HOUR			$0.00	**$0.00**	**$0.00**
PAYROLL TAXES AND INSURANCE					
FICA					
Medicare					
Federal Unemployment					
State Unemployment					
Disability					
Workers' Compensation Code:					
Liability					
C. TOTAL TAXES AND INSURANCE PER HOUR					
○ All benefits are paid directly to Employee.					
◉ Only benefits identified above are Taxable.		**$0.00** x	**0.0000** % =	**$0.00**	**$0.00**
D. TOTAL LABOR RATE			(A + B + C) =	**$0.00**	**$0.00**

E. CONTRACTOR'S CERTIFICATION

I certify that the labor rates, insurance enumerations, labor fringe enumerations and expenses are correct and in accordance with actual and true cost incurred.

_____
Signature of Authorized Representative

_____
Print Name

_____
Print Title

Sworn before me this _____ day

of _____ , 20 _____.

_____
Notary Public

Labor Rate Worksheet (04/04)

AIA® Document A312™ – 2010

Performance Bond

CONTRACTOR:
(Name, legal status and address)

SURETY:
(Name, legal status and principal place of business)

OWNER:
(Name, legal status and address)
Nanuet Union Free School District
101 Church Street
Nanuet, NY 10954

CONSTRUCTION CONTRACT
Date:
Amount: $
Description:
(Name and location)
Contractor to input below information
Project Name: NANUET HIGH SCHOOL ELEVATOR ADDITION
103 Church Street, Nanuet, NY 10954

Project Address:
SED# 50-01-08-03-0-003-032

BOND
Date:
(Not earlier than Construction Contract Date)

Amount: $
Modifications to this Bond: [X] None [ ] See Section 16

CONTRACTOR AS PRINCIPAL		**SURETY**	
Company:	*(Corporate Seal)*	Company:	*(Corporate Seal)*
Signature:		Signature:	
Name and Title:		Name and Title:	

(Any additional signatures appear on the last page of this Performance Bond.)

(FOR INFORMATION ONLY — Name, address and telephone)

AGENT or **BROKER:**

OWNER'S REPRESENTATIVE:
(Architect, Engineer or other party:)

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

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

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

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User Notes: (1919109956)

§ 1 The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.

§ 2 If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Section 3.

§ 3 If there is no Owner Default under the Construction Contract, the Surety's obligation under this Bond shall arise after

.1 the Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice shall indicate whether the Owner is requesting a conference among the Owner, Contractor and Surety to discuss the Contractor's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Section 3.1 shall be held within ten (10) business days of the Surety's receipt of the Owner's notice. If the Owner, the Contractor and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement shall not waive the Owner's right, if any, subsequently to declare a Contractor Default;

.2 the Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and

.3 the Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.

§ 4 Failure on the part of the Owner to comply with the notice requirement in Section 3.1 shall not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.

§ 5 When the Owner has satisfied the conditions of Section 3, the Surety shall promptly and at the Surety's expense take one of the following actions:

§ 5.1 Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;

§ 5.2 Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;

§ 5.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owner's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Section 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or

§ 5.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor and with reasonable promptness under the circumstances:

.1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or

.2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.

§ 6 If the Surety does not proceed as provided in Section 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Section 5.4, and the Owner refuses the payment or the Surety has denied liability, in whole or in part, without further notice the Owner shall be entitled to enforce any remedy available to the Owner.

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User Notes: (1919109956)

§ 7 If the Surety elects to act under Section 5.1, 5.2 or 5.3, then the responsibilities of the Surety to the Owner shall not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety shall not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication, for

.1 the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;

.2 additional legal, design professional and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Section 5; and

.3 liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.

§ 8 If the Surety elects to act under Section 5.1, 5.3 or 5.4, the Surety's liability is limited to the amount of this Bond.

§ 9 The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors and assigns.

§ 10 The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.

§ 11 Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within two years after a declaration of Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

§ 12 Notice to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears.

§ 13 When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

§ 14 Definitions

§ 14.1 Balance of the Contract Price. The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made, including allowance to the Contractor of any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.

§ 14.2 Construction Contract. The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.

§ 14.3 Contractor Default. Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.

§ 14.4 Owner Default. Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

§ 14.5 Contract Documents. All the documents that comprise the agreement between the Owner and Contractor.

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§ 15 If this Bond is issued for an agreement between a Contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

§ 16 Modifications to this bond are as follows:

(Space is provided below for additional signatures of added parties, other than those appearing on the cover page.)

CONTRACTOR AS PRINCIPAL		**SURETY**	
Company:	*(Corporate Seal)*	Company:	*(Corporate Seal)*
Signature:	_____	Signature:	_____
Name and Title:		Name and Title:	
Address:		Address:	

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Payment Bond

CONTRACTOR *(Name and Address)*:

SURETY *(Name and Principal Place of Business)*:

OWNER *(Name and Address)*:

CONSTRUCTION CONTRACT
Date:
Amount:
Description *(Name and Location)*:

BOND
Date *(Not earlier than Construction Contract Date)*:
Amount:
Modifications to this Bond: [X] None [ ] See Last Page

CONTRACTOR AS PRINCIPAL		**SURETY**	
Company:	*(Corporate Seal)*	Company:	*(Corporate Seal)*
Signature:		Signature:	
Name and Title:		Name and Title:	

(Any additional signatures appear on the last page)

(FOR INFORMATION ONLY - Name, Address and Telephone)

AGENT or **BROKER**:

OWNER'S REPRESENTATIVE *(Architect, Engineer or other party)*:

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§ 1 The Contractor and the Surety, jointly and severally bind themselves, their heirs, executors, administrators, successors and assigns to the Owner to pay for labor, materials and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference.

§ 2 With respect to the Owner, this obligation shall be null and void if the Contractor:
§ 2.1 Promptly makes payment, directly or indirectly, for all sums due Claimants, and

§ 2.2 Defends, indemnifies and holds harmless the Owner from claims, demands, liens or suits by any person or entity whose claim, demand, lien or suit is for the payment for labor, materials or equipment furnished for use in the performance of the Construction Contract, provided the Owner has promptly notified the Contractor and the Surety (at the address described in Section 12) of any claims, demands, liens or suits and tendered defense of such claims, demands, liens or suits to the Contractor and the Surety, and provided there is no Owner Default.

§ 3 With respect to Claimants, this obligation shall be null and void if the Contractor promptly makes payment, directly or indirectly, for all sums due.

§ 4 The Surety shall have no obligation to Claimants under this Bond until:
§ 4.1 Claimants who are employed by or have a direct contract with the Contractor have given notice to the Surety (at the address described in Section 12) and sent a copy, or notice thereof, to the Owner, stating that a claim is being made under this Bond and, with substantial accuracy, the amount of the claim.

§ 4.2 Claimants who do not have a direct contract with the Contractor:

- **.1** Have furnished written notice to the Contractor and sent a copy, or notice thereof, to the Owner, within 90 days after having last performed labor or last furnished materials or equipment included in the claim stating, with substantial accuracy, the amount of the claim and the name of the party to whom the materials were furnished or supplied or for whom the labor was done or performed; and
- **.2** Have either received a rejection in whole or in part from the Contractor, or not received within 30 days of furnishing the above notice any communication from the Contractor by which the Contractor has indicated the claim will be paid directly or indirectly; and
- **.3** Not having been paid within the above 30 days, have sent a written notice to the Surety (at the address described in Section 12) and sent a copy, or notice thereof, to the Owner, stating that a claim is being made under this Bond and enclosing a copy of the previous written notice furnished to the Contractor.

§ 5 If a notice required by Section 4 is given by the Owner to the Contractor or to the Surety, that is sufficient compliance.

§ 6 When the Claimant has satisfied the conditions of Section 4, the Surety shall promptly and at the Surety's expense take the following actions:
§ 6.1 Send an answer to the Claimant, with a copy to the Owner, within 45 days after receipt of the claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed.

§ 6.2 Pay or arrange for payment of any undisputed amounts.

§ 7 The Surety's total obligation shall not exceed the amount of this Bond, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.

§ 8 Amounts owed by the Owner to the Contractor under the Construction Contract shall be used for the performance of the Construction Contract and to satisfy claims, if any, under any Construction Performance Bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfy obligations of the Contractor and the Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.

§ 9 The Surety shall not be liable to the Owner, Claimants or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligations to make payments to, give notices on behalf of, or otherwise have obligations to Claimants under this Bond.

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User Notes: (1919109956)

§ 10 The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.

§ 11 No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the location in which the work or part of the work is located or after the expiration of one year from the date (1) on which the Claimant gave the notice required by Section 4.1 or Section 4.2.3, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

§ 12 Notice to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the signature page. Actual receipt of notice by Surety, the Owner or the Contractor, however accomplished, shall be sufficient compliance as of the date received at the address shown on the signature page.

§ 13 When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. The intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

§ 14 Upon request by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor shall promptly furnish a copy of this Bond or shall permit a copy to be made.

§ 15 DEFINITIONS

§ 15.1 Claimant: An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials or equipment for use in the performance of the Contract. The intent of this Bond shall be to include without limitation in the terms "labor, materials or equipment" that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials or equipment were furnished.

§ 15.2 Construction Contract: The agreement between the Owner and the Contractor identified on the signature page, including all Contract Documents and changes thereto.

§ 15.3 Owner Default: Failure of the Owner, which has neither been remedied nor waived, to pay the Contractor as required by the Construction Contract or to perform and complete or comply with the other terms thereof.

§ 16 MODIFICATIONS TO THIS BOND ARE AS FOLLOWS:

(Space is provided below for additional signatures of added parties, other than those appearing on the cover page.)

CONTRACTOR AS PRINCIPAL		**SURETY**	
Company:	*(Corporate Seal)*	Company:	*(Corporate Seal)*
Signature:		Signature:	
Name and Title:		Name and Title:	
Address:		Address:	

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Performance Bond

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.

Any singular reference to Contractor, Surety, Owner or other party shall be considered plural where applicable.

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Additions and Deletions Report for
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PAGE 1

Nanuet Union Free School District
101 Church Street
Nanuet, NY 10954

...

Contractor to input below information
Project Name: NANUET HIGH SCHOOL ELEVATOR ADDITION
103 Church Street, Nanuet, NY 10954

Project Address:
SED# 50-01-08-03-0-003-032

...

Modifications to this Bond: [X] None [ ] See Section 16

...

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Payment Bond

CONTRACTOR *(Name and Address)*:

SURETY *(Name and Principal Place of Business)*:

OWNER *(Name and Address)*:

CONSTRUCTION CONTRACT
Date:
Amount:
Description *(Name and Location)*:

BOND
Date *(Not earlier than Construction Contract Date)*:
Amount:
Modifications to this Bond: [X] None [ ] See Last Page

CONTRACTOR AS PRINCIPAL		**SURETY**	
Company:	*(Corporate Seal)*	Company:	*(Corporate Seal)*
Signature:		Signature:	
Name and Title:		Name and Title:	

(Any additional signatures appear on the last page)

(FOR INFORMATION ONLY - Name, Address and Telephone)

AGENT or **BROKER**:

OWNER'S REPRESENTATIVE *(Architect, Engineer or other party)*:

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§ 1 The Contractor and the Surety, jointly and severally bind themselves, their heirs, executors, administrators, successors and assigns to the Owner to pay for labor, materials and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference.

§ 2 With respect to the Owner, this obligation shall be null and void if the Contractor:
§ 2.1 Promptly makes payment, directly or indirectly, for all sums due Claimants, and

§ 2.2 Defends, indemnifies and holds harmless the Owner from claims, demands, liens or suits by any person or entity whose claim, demand, lien or suit is for the payment for labor, materials or equipment furnished for use in the performance of the Construction Contract, provided the Owner has promptly notified the Contractor and the Surety (at the address described in Section 12) of any claims, demands, liens or suits and tendered defense of such claims, demands, liens or suits to the Contractor and the Surety, and provided there is no Owner Default.

§ 3 With respect to Claimants, this obligation shall be null and void if the Contractor promptly makes payment, directly or indirectly, for all sums due.

§ 4 The Surety shall have no obligation to Claimants under this Bond until:
§ 4.1 Claimants who are employed by or have a direct contract with the Contractor have given notice to the Surety (at the address described in Section 12) and sent a copy, or notice thereof, to the Owner, stating that a claim is being made under this Bond and, with substantial accuracy, the amount of the claim.

§ 4.2 Claimants who do not have a direct contract with the Contractor:

.1 Have furnished written notice to the Contractor and sent a copy, or notice thereof, to the Owner, within 90 days after having last performed labor or last furnished materials or equipment included in the claim stating, with substantial accuracy, the amount of the claim and the name of the party to whom the materials were furnished or supplied or for whom the labor was done or performed; and

.2 Have either received a rejection in whole or in part from the Contractor, or not received within 30 days of furnishing the above notice any communication from the Contractor by which the Contractor has indicated the claim will be paid directly or indirectly; and

.3 Not having been paid within the above 30 days, have sent a written notice to the Surety (at the address described in Section 12) and sent a copy, or notice thereof, to the Owner, stating that a claim is being made under this Bond and enclosing a copy of the previous written notice furnished to the Contractor.

§ 5 If a notice required by Section 4 is given by the Owner to the Contractor or to the Surety, that is sufficient compliance.

§ 6 When the Claimant has satisfied the conditions of Section 4, the Surety shall promptly and at the Surety's expense take the following actions:
§ 6.1 Send an answer to the Claimant, with a copy to the Owner, within 45 days after receipt of the claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed.

§ 6.2 Pay or arrange for payment of any undisputed amounts.

§ 7 The Surety's total obligation shall not exceed the amount of this Bond, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.

§ 8 Amounts owed by the Owner to the Contractor under the Construction Contract shall be used for the performance of the Construction Contract and to satisfy claims, if any, under any Construction Performance Bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfy obligations of the Contractor and the Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.

§ 9 The Surety shall not be liable to the Owner, Claimants or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligations to make payments to, give notices on behalf of, or otherwise have obligations to Claimants under this Bond.

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§ 10 The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.

§ 11 No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the location in which the work or part of the work is located or after the expiration of one year from the date (1) on which the Claimant gave the notice required by Section 4.1 or Section 4.2.3, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

§ 12 Notice to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the signature page. Actual receipt of notice by Surety, the Owner or the Contractor, however accomplished, shall be sufficient compliance as of the date received at the address shown on the signature page.

§ 13 When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. The intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

§ 14 Upon request by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor shall promptly furnish a copy of this Bond or shall permit a copy to be made.

§ 15 DEFINITIONS

§ 15.1 Claimant: An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials or equipment for use in the performance of the Contract. The intent of this Bond shall be to include without limitation in the terms "labor, materials or equipment" that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials or equipment were furnished.

§ 15.2 Construction Contract: The agreement between the Owner and the Contractor identified on the signature page, including all Contract Documents and changes thereto.

§ 15.3 Owner Default: Failure of the Owner, which has neither been remedied nor waived, to pay the Contractor as required by the Construction Contract or to perform and complete or comply with the other terms thereof.

§ 16 MODIFICATIONS TO THIS BOND ARE AS FOLLOWS:

(Space is provided below for additional signatures of added parties, other than those appearing on the cover page.)

CONTRACTOR AS PRINCIPAL		**SURETY**	
Company:	*(Corporate Seal)*	Company:	*(Corporate Seal)*
Signature:		Signature:	
Name and Title:		Name and Title:	
Address:		Address:	

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Certification of Document's Authenticity

AIA® Document D401™ – 2003

I, David Short, 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 16:05:39 ET on 07/28/2022 under Order No. 2114341191 from AIA Contract Documents software and that in preparing the attached final document I made no changes to the original text of AIA® Document A312™ – 2010, Performance Bond, 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)

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SECTION 00 90 00 - NY SED REGULATIONS 155.5

PART 1 - GENERAL

1.1 NYSSED 155.5 REGULATIONS - Uniform Safety Standards for School Construction and Maintenance Projects

A. These regulations are the responsibility of each contractor and his/her subcontractor(s)

PART 2 - Section 155.5 Uniform Safety Standards for School Construction and Maintenance Projects

PART 3 - (a) Monitoring of construction and maintenance activities.

PART 4 - The occupied portion of any school building shall always comply with the minimum requirements necessary to maintain a certificate of occupancy and shall be monitored during construction or maintenance activities for safety violations by school district personnel. It is the responsibility of the board of education or board of cooperative educational services to assure that these standards are continuously maintained when the building or any portion thereof is occupied.

PART 5 - (b) Investigation and disposition of complaints relating to health and safety received as a result of construction and maintenance activities.

PART 6 - Boards of education and boards of cooperative educational services shall follow procedures established under section 155.4(d)(7) of this Part.(c) Pre-construction testing and planning for construction projects.

PART 7 - (1) Boards of education and boards of cooperative educational services shall assure that proper planning is made for safety of building occupants during construction. For all construction projects for which bids are issued on or after September 30, 1999, such boards shall assure that safety is addressed in the bid specifications and contract documents before contract documents are advertised for bid. All school areas to be disturbed during renovation or demolition shall be tested for lead and asbestos. Appropriate procedures to protect the health of building occupants shall be included in the final construction documents for bidding.

PART 8 - (2) Boards of education and boards of cooperative educational services shall establish procedures for involvement of the health and safety committee to monitor safety during school construction projects. The health and safety committees in school districts other than in cities with one million inhabitants or more shall be expanded during construction projects to include the project architect, construction manager, and the contractors. Such committee shall meet periodically to review issues and address complaints related to health and safety resulting from the construction project. In the case of a city school district in a city of one million inhabitants or

more, the board of education shall submit procedures for protecting health and safety during construction to the commissioner for approval. Such procedures shall outline methods for compliance with this section.

PART 9 - (3) The district emergency management plan shall be updated to reflect any changes necessary to accommodate the construction process, including an updated emergency exit plan indicating temporary exits required due to construction. Provisions shall be made for the emergency evacuation and relocation or release of students and staff in the event of a construction incident.

PART 10 - (4) Fire drills shall be held to familiarize students and staff with temporary exits and revised emergency procedures whenever such temporary exits and revised emergency procedures are required.

PART 11 - (d) Pre-construction notification of construction projects.

PART 12 - The board of education or board of cooperative educational services shall establish procedures for notification of parents, staff and the community in advance of a construction project of $10,000 or more to be conducted in a school building while the building is occupied. Such procedures shall provide notice at least two months prior to the date on which construction is scheduled to begin, provided that in the case of emergency construction projects, such notice shall be provided as far in advance of the start of construction as is practicable. Such notice shall include information on the district's obligations under this section to provide a safe school environment during construction projects. Such notice requirement may be met by publication in district newsletters, direct mailings, or holding a public hearing on the project to inform parents, students, school personnel and community members.

PART 13 - (e) General safety and security standards for construction projects.

PART 14 - (1) All construction materials shall be stored in a safe and secure manner.

PART 15 - (2) Fences around construction supplies or debris shall be maintained.

PART 16 - (3) Gates shall always be locked unless a worker is in attendance to prevent unauthorized entry.

PART 17 - (4) During exterior renovation work, overhead protection shall be provided for any sidewalks or areas immediately beneath the work site or such areas shall be fenced off and provided with warning signs to prevent entry.

PART 18 - (5) Workers shall be required to wear photo identification badges at all times for identification and security purposes while working at occupied sites.

PART 19 - (f) Separation of construction areas from occupied spaces.

PART 20 - 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. 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. Gypsum board must be used in exit ways or other areas that require fire rated separation. 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.

PART 21 - (1) 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.

PART 22 - (2) 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.

PART 23 - (3) All occupied parts of the building affected by renovation activity shall be cleaned at the close of each workday. School buildings occupied during a construction project shall maintain required health, safety and educational capabilities at all times that classes are in session.

PART 24 - (g) Maintaining exiting and ventilation during school construction projects.

PART 25 - The following information shall be included in all plans and specifications for school building projects:

PART 26 - (1) A plan detailing how exiting required by the applicable building code will be maintained during construction. The plan shall indicate temporary construction required to isolate construction equipment, materials, people, dust, fumes, odors, and noise during the construction period. Temporary construction details shall meet code-required fire ratings for separation and corridor enclosure. At a minimum, required exits, temporary stairs, ramps, exit signs, and door hardware shall be provided at all times.

PART 27 - A plan detailing how adequate ventilation will be maintained during construction. The plan shall indicate ductwork which must be rerouted, disconnected, or capped in order to prevent contaminants from the construction area from entering the occupied areas of the building. The plan shall also indicate how required ventilation to occupied spaces affected by construction will be maintained during the project.

PART 28 - (h) Fire and hazard prevention.

PART 29 - Areas of buildings under construction that are to remain occupied shall maintain a certificate of occupancy. In addition, the following shall be strictly enforced:

PART 30 - (1) No smoking is allowed on public school property, including construction areas.

PART 31 - (2) During construction daily inspections of district occupied areas shall be conducted by school district personnel to assure that construction materials, equipment or debris not block fire exits or emergency egress windows.

PART 32 - (3) Proper operation of fire extinguishers, fire alarm, and smoke/fire detection systems shall be maintained throughout the project.

PART 33 - (i) Noise abatement during construction and maintenance activities.

PART 34 - Construction and maintenance operations shall not produce noise in excess of 60 dba in occupied spaces or shall be scheduled for times when the building or affected building spaces are not occupied or acoustical abatement measures shall be taken. Noise level measurements (dba) shall be taken with a type 2 sound level meter in the occupied space in a location closest to the source of the noise. Complaints regarding excessive noise shall be addressed through the health and safety committee. The district should anticipate those times when construction noise is unacceptable and incorporate “no work” periods into the bid specifications.

PART 35 - (j) Control of chemical fumes, gases, and other contaminants during construction and maintenance projects.

PART 36 - The bid specifications and construction contracts for each construction project shall indicate how and where welding, gasoline engine, roofing, paving, painting or other fumes will be exhausted. Care must be taken to assure fresh air intakes do not draw in such fumes.

PART 37 - (1) The bid specifications shall require schedules of work on construction and maintenance projects which include time for off-gassing of volatile organic compounds introduced during construction before occupancy is allowed. 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 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 building must be properly ventilated and the material must be given proper time to cure or off-gas before re-occupancy.

PART 38 - (2) Manufacturer's material safety data sheets (MSD) shall be maintained at the site for all products used in the project. MSDS must be provided to anyone who requests them. 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.

PART 39 - (k) Asbestos abatement protocols.

PART 40 - All asbestos abatement projects shall comply with all applicable Federal and State laws including but not limited to the New York State Department of Labor industrial code rule 56 (12 NYCRR 56), and the Federal Asbestos Hazard Emergency Response Act (AHERA), 40 CFR part 763 (Code of Federal Regulations, 1998 Edition, Superintendent of Public Documents, U.S. Government Printing Office, Washington, DC 20402; 1998; available at the Office of Facilities Planning, Education Building Annex, Room 1060, State Education Department, Albany, NY 12234). 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.

PART 41 - (l) Lead paint.

PART 42 - Any construction or maintenance operations which will disturb lead based paint will require abatement of those areas pursuant to protocols detailed in the "Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing" (June 1995; U.S. Department of Housing and Urban Development, Washington, D.C. 20410; available at the Office of Facilities Planning, Education Building Annex, Room 1060, State Education Department, Albany, NY 12234). 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.

PART 43 - (m) Radon.

PART 44 - Districts shall take responsibility to be aware of the geological potential for high levels of radon and to test and mitigate as appropriate. This information is available from the New York State Department of Health Radon Measurement Database.

PART 45 - (n) Post construction inspection.

PART 46 - The school district or board of cooperative educational services shall provide the opportunity for a walk-through inspection by the health and safety committee members to confirm that the area is ready to be reopened for use.

END OF SECTION 00 90 00

SECTION 00 90 01 - RESCUE REGULATIONS (EXCERPT OF CONTRACTORS RESPONSIBILITIES)

PART 1 - GENERAL

1.1 NYSSED RESCUE REGULATIONS - Uniform Safety Standards for School Construction and Maintenance Projects

A. These regulations are the responsibility of each contractor and his/her subcontractor(s)

1. The occupied portion of any school building shall always comply with the minimum requirements necessary to maintain a certificate of occupancy."
2. All building areas to be disturbed during this construction project have been tested for lead and asbestos. All pertinent information has been included in this project specification and/or in the drawings
3. General safety and security standards for construction projects.

    a. All construction materials shall be stored in a safe and secure manner.
    b. Fences around construction supplies or debris shall be maintained.
    c. Gates shall always be locked unless a worker is in attendance to prevent unauthorized entry.
    d. During exterior renovation work, overhead protection shall be provided for any sidewalks or areas immediately beneath the work site or such areas shall be fenced off and provided with warning signs to prevent entry.
    e. Workers shall be required to wear photo-identification badges at all times for identification and security purposes while working at occupied sites."

4. Separation of construction areas from occupied spaces. 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. 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. Gypsum board must be used in exit ways or other areas that require fire rated separation. 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.

    a. 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.
    b. 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.
    c. All occupied parts of the building affected by renovation activity shall be cleaned at the close of each workday. School buildings occupied during a construction project shall maintain required health, safety and educational capabilities at all times that classes are in session."

5. Each prime contractor shall develop a plan detailing how exiting required by the applicable building code will be maintained throughout the duration of the construction project. Refer to Summary of Work for scheduling and phasing. Provide site logistics plan indicating temporary partitions separating areas of work from the rest of the school

building. Temporary partitions affecting building egress and exiting shall be submitted to the architect for review and approval.

6. Each prime contractor shall develop a plan detailing how adequate ventilation will be maintained throughout the duration of the construction project.

7. Construction and maintenance operations shall not produce noise in excess of 60 dba in occupied spaces or shall be scheduled for times when the building or affected building spaces are not occupied or acoustical abatement measures shall be taken."

8. The contractor shall be responsible for the control of chemical fumes, gases, and other contaminates produced by welding, gasoline or diesel engines, roofing, paving, painting, etc. to ensure they do not enter occupied portions of the building or air intakes."

9. The contractor shall be responsible to ensure that activities and materials which result in "off-gassing" of volatile organic compounds such as glues, paints, furniture, carpeting, wall covering, drapery, etc. are scheduled, cured or ventilated in accordance with manufacturers recommendations before a space can be occupied."

10. Large and small asbestos abatement projects as defined by 12NYCRR56 shall not be performed while the building is occupied". Note, It is our interpretation that the term "building", as referenced in this section, means a wing or major section of a building that can be completely isolated from the rest of the building with sealed non combustible construction. The isolated portion of the building must contain exits that do not pass through the occupied portion and ventilation systems must be physically separated and sealed at the isolation barrier.

11. Exterior work such as roofing, flashing, siding, or soffit work may be performed on occupied buildings provided proper variances are in place as required and complete isolation of ventilation systems and at windows is provided. Care must be taken to schedule work so that classes are not disrupted by noise or visual distraction.

12. All areas scheduled for work have been examined for lead-containing materials. Results of these tests are available by contacting Croton Harmon Union Free School District, Paul Gibbons, Director of School Facilities, Operations & Maintenance, at 914.271-6109. No work of this contract anticipates disturbance to any surrounding materials that may have been identified as “lead-containing”.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 00 90 01

SECTION 01 10 00 - MULTIPLE PRIME CONTRACT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 PROJECT/WORK IDENTIFICATION

A. General – GC-01 - Project name is Nanuet High School Elevator Addition in the Nanuet Union Free School District as shown on Contract Documents prepared by KSQ Architects.

B. Electrical – EC-01 - Project name is Nanuet High School Elevator Addition in the Nanuet Union Free School District as shown on Contract Documents prepared by KSQ Architects.

C. Mechanical/Plumbing – MC-01 - Project name is Nanuet High School Elevator Addition in the Nanuet Union Free School District as shown on Contract Documents prepared by KSQ Architects.

D. Prime Contracts, in the context used in this Section, are separate contracts that represent significant elements of work that are performed concurrently with and in close coordination with work performed on the project under other Prime Contracts and Owner. Each is recognized to be a major part of the project (See Section 01 12 XX).

1.3 CONTRACT DOCUMENTS

A. Contract Documents indicate the work of each Prime Contract and related requirements and conditions that have an impact on the project. Related requirements and conditions that are indicated on the Contract Documents include, but are not necessarily limited to the following:

1. Existing site conditions and restrictions on use of the site.
2. Work performed prior to work under these Prime Contracts.
3. Alterations and coordination with existing work.
4. Other work to be performed concurrently by the Owner.
5. Work to be performed subsequent to work under these Prime Contracts.
6. Alternates – Not Used.
7. Allowances.

1.4 SUMMARY, PRIME CONTRACT WORK

A. The work of each Prime Contract, as defined in greater detail by other provisions of the Contract Documents, is summarized in Section 01 12 00.

B. Definition of the extent of Prime Contract Work

1. The extent of the work of each Contract is indicated in the Contract Documents. General names and terminology on the drawings and in the specification, sections controls the determination of which Contract includes a specific element of required work, except where no other more specific definition is contained in the Contract Documents.
2. Local custom and trade-union jurisdictional settlements do not control the scope-of-work in each Contract. When a potential jurisdictional dispute or similar potential work

interruption is first identified or threatened, affected parties of the Contracts shall promptly negotiate a reasonable settlement which will avoid or minimize such pending interruption and its delays or losses.

1.5 SCHEDULE

A. Within Ten (10) calendar days of award of its Contract by the Owner, the Prime Contractor shall submit a construction schedule to the Construction Manager for the work to be performed under its Contract with the Owner. The construction schedule shall be in a detailed precedence style critical path (CPM) of Primavera type format satisfactory to the Owner, Construction Manager, which shall also:

1. Provide a graphic representation of all activities and events that will occur during the performance of the work.
2. Identify each phase of construction and occupancy.
3. Set forth dates that are critical in ensuring the timely and orderly completion of the Work in accordance with the requirements of the Contract Documents (hereinafter referred to as Milestone Dates).
4. Conform to the Construction Schedule included in the Drawings for each Prime Contractor's Work.

B. The Construction Manager & Architect shall review such schedule and shall advise the Prime Contractor if its schedule is acceptable for incorporation into the Master Schedule of work to be performed by the Prime Contractor engaged by the Owner. If the schedule is unacceptable, the Construction Manager will advise the Prime Contractor that its schedule will be revised in the Master Schedule. The Prime Contractor shall monitor the progress of its work for conformance with the requirements of the Construction Schedule and shall promptly advise the Owner and Construction Manager of any delays or potential delays. In the event any progress report indicates any delays, each Prime Contractor shall propose an affirmative plan to correct the delay, including overtime and/or additional labor, if necessary. In no event shall any progress report constitute an adjustment in the Contract Time, the Milestone Dates, or the Contract Sum unless any such adjustment is agreed to by the Owner and authorized pursuant to a Change Order.

C. If the Schedule is not submitted by the Prime Contractor in a timely fashion, such Prime Contractor shall accept the Master Schedule prepared by the Construction Manager as the Construction Schedule to be used in carrying out its work and that prime Contractor shall waiver its rights to claim damage or delay associated with the time requirements set forth in the Master Schedule. Such schedule will become the product and ownership of that Prime Contractor and that Prime Contractor will be back-charged all costs pertaining to the service of producing the schedule.

D. The Prime Contractor shall provide revised schedules at appropriate intervals as required by the conditions of the work and Project or as directed by the Construction Manager.

E. The Prime Contractor will perform all work in the existing building in the evening or on weekends, except during summer breaks, or when the school is closed. Contractor shall obtain approval from the Construction Manager prior to performing the work.

1.6 **PROOF OF ORDERS, DELIVERY DATES AND SUPPLY CHAIN TRACKING**

A. Within 2 weeks after the approval of shop drawings, samples, product data, and any other documents requiring approval before purchasing. The contractor shall provide copies of purchase orders for all equipment and materials which are not available in local stock. The contractor shall submit written statements from suppliers confirming the orders and stating promised delivery dates. Failure to provide this critical information will result in owner holding monthly requisition payments until received.

Due to ongoing supply chain disruptions, the contractors are required to obtain all materials for the project and store them onsite in their individually provided Conex boxes. This includes general material items typically readily available (piping, conduits, wire, metal studs, CMU, drainage structures, light fixtures, etc.) The owner will pay for these stored items delivered to the jobsite in accordance with section 012900.

END OF SECTION 01 10 00

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SECTION 01 11 00 - MILESTONE SCHEDULE

PART 1 - GENERAL

1.1 Milestone

The following milestone schedule serves as a basis for bidding. A Master Schedule will be developed at a general meeting of all successful bidders within 21 days of Letter of Intent to Award the Contracts. This sequence and time frame has been coordinated with the school program, no acceleration or changes will be permitted. Each prime contractor will coordinate activities, forward submittals, deliver materials and provide necessary manpower to meet the milestones listed below.

1.2 Milestone Schedule - High School Elevator Addition Contracts GC-01, EC-01, & MC-01:

Start of Construction: September 14, 2022
Equipment Submittals & Approvals: September - October, 2022
Substantial Completion: May 19, 2023

Note: Second shift/double shift work **are required** to meet substantial completion dates. Second shift/ double shift work is expected to take place as required to meet the milestone schedule if necessary.
Second shift hours are before 6AM or after 3:30 pm.
Failure to meet the milestone schedule will result in a per day financial penalty as indicated in the AIA A232/A132

All work required by any of the Owner's representatives and consultants, including the Architect, Architect's consultants, Owner's Attorneys, etc., to execute final close-out of contract after 60 days beyond Milestone dates if determined to be caused by contractor, shall result in payment(s) to the Owner's representatives and consultants, including the Architect, Architect's consultants, Owner's Attorneys, etc., in the form of a change order deduct to the base contract.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 01 11 00

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TEMPORARY TRAFFIC AND PARKING:

1. PROVIDE TRAFFIC SIGNS, BARRIERS AND DETOURS DURING CONSTRUCTION WHERE SHOWN AND AS REQUIRED TO IDENTIFY TRAFFIC FLOW AND PEDESTRIAN SAFETY.

2. CONTRACTORS MAY NOT USE STAFF OR STUDENT PARKING. ALL CONTRACTORS ARE TO PARK WITHIN THE WORK AREA. IF ADDITIONAL PARKING IS REQUIRED. CONTRACTOR IS TO NOTIFY THE CM FOR COORDINATION OF POSSIBLE LOCATIONS WITHIN THE DISTRICT.

3. ALL MACHINEARY AND EQUIPMENT IS TO BE STORED WITHIN THE LAYDOWN AREA DESIGINATED ON THESE DRAWINGS.

CONSTRUCTION PHASING PLAN - ELEVATOR ADDITION

	DISCRIPTION OF WORK	START	FINISH	NOTES
	EXPEDITED SUBMITTALS, BONDS, INSURANCE	SEPTEMBER 7, 2022	SEPTEMBER 23, 2022	
	MOBILIZE, TEMP ROADWORK, FENCING, & PROTECTION	SEPTEMBER 14, 2022	SEPTEMBER 16, 2022	
	EXCAVATE & EXPOSE FOUNDATION	SEPTEMBER 13, 2022	SEPTEMBER 14, 2022	
	ABATEMENT/DEMO, TESTING & CLEARANCES	SEPTEMBER 16, 2022	SEPTEMBER 18, 2022	** Second Shift & Weekend (Sat & Sun) Abatement Required *** Window, HVAC insulation, Exterior demo by GC abatement sub
	FOUNDATIONS, INTERIOR DEMO, PENETRATIONS & REINFORCEMENT	SEPTEMBER 19, 2022	OCTOBER 10, 2022	GC to temp in removed window with 4/8" waterproof shathing and metal stud. Temp infill to be watertight. Interior Demo to be second Shift only.
	CMU STRUCTURE & ROOF STRUCTURE	OCTOBER 11 2022	OCTOBER 31, 2022	GC to follow cold weather masonry procedures as required.
	SITE GRADING AND STORMWATER	OCTOBER 11 2022	OCTOBER 31, 2022	RE-SEED ASAP
	HVAC & PLUMBING & ELECTRICAL	NOVEMBER 1, 2022	NOVEMBER 18, 2022	HVAC UNITS, SUMP PUMP
	EXTERIOR MASONRY AND WATERPROOFING	NOVEMBER 1, 2022	NOVEMBER 18, 2022	GC to follow cold weather masonry procedures as required.
	ROOFING	NOVEMBER 21, 2022	NOVEMBER 22, 2022	GC to provide temp roofing if weather does not permit new roofing isntall.
	ELEVATOR STRUCTURE & CAB (DEPENDENT ON LEAD TIME)	APRIL 2022	APRIL 2022	GC TO COORDINATE WITH EC FOR CONNECTIONS
	FINAL ELECTRICAL & HVAC	APRIL 2022	APRIL 2022	
	DEMOBILIZE	MAY 2022	MAY 2022	

GENERAL NOTES

1. THIS DRAWING IS PORVIDED TO DEPICT THE IMPLEMENTATION SCHEDULE OF WORK IN ORDER TO MINIMIZE THE EFFECT OF CONSTRUCTION ON THE EDUCATIONAL PROGRAM AND PRIMARY USES OF THE FACILITY.

2. THIS DRAWING MAY NOT REFLECT THE ACTUAL EXISTING CONDITIONS OR LATEST PROPOSED PLAN.

3. ALL REGULATORY AGENCY REQUIREMENTS INCLUDING STATE AND LOCAL CODES AND PROPER SAFETY PRECAUTIONS SHALL APPLY AND TAKE PRECEDENCE OVER THE PAHSING PLANS.

4. PHASING IS REQUIRED FOR THE CONSTRUCTION OF THIS SITE WORK. THIS DRAWING SHOWS THE TEMP ROADS AND SITE BARRIRS FOR DISTRICT EMERGENCY VEHICLES AND PUBLIC ACCESS TO PARTS OF THE SITE DURING THE CONSTRUCTION.

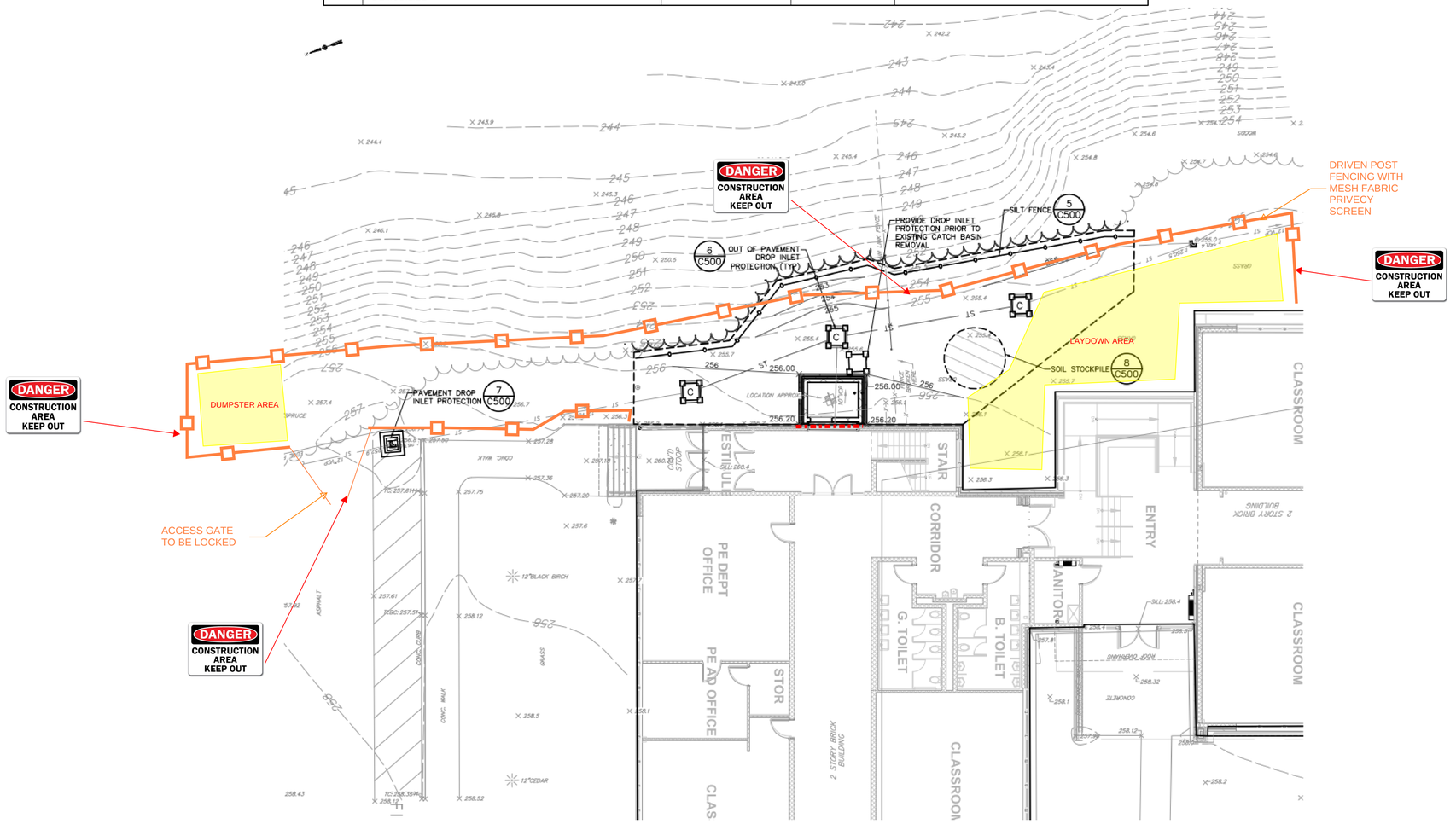
5. CONTRACTOR IS TO PROVIDE A CONSTRUCTION SEQUENCE PLAN FOR REVIEW RELATED TO THE FIELD, TRACK, BLEACHERS, AND TENNIS COURTS ALL INCORPORATED WITH THIS SITE LOGISTICS PLAN SHOWING TEMP ROADS AND SAFETY FENCING.

STAGING NOTES

1. SEE SITE DRAWINGS AND PROJECT MANUEL FOR EROSION CONTROL MEASURES: SILT FENCING. STOCKPILING, STABILIZED CONSTRUCTIN PAD, ETC.

2. IN ADDITION TO ORANGE FENCING SHOWN, PROVIDE AT ROADWAYS AND OTHER AREAS DURING DEMOLITION, EXCIVATION AND OTHER WORK WHERE PUBLIC SAFETY IS AFFECTED.

3. POST SIGANGE AT FENCING AND OTHER AREAS OF WORK "HARD HAT AREA", "VISITORS MUST REPORT TO THE TRAILER", "CONSTRUCTION PERSONNEL ONLY", ETC.



EROSION CONTROL LEGEND:

- PROPERTY LINE
- 345 — 5 FT CONTOUR
- 346 — 1 FT CONTOUR
- TREE LINE
- SILT FENCE
- FILTER FABRIC DROP INLET PROTECTION
- SOIL STORAGE AREA

2 EROSION AND SEDIMENT CONTROL PLAN
SCALE: 1"=10'

1 OVERALL PHASING PLAN - JL FIELD
1/8" = 1'-0"

Architect
KSQ Design dba KSQ Architects P.C.
215 West 40th Street, 15th Floor
New York, NY 10018
646.453.0660
www.ksq.design

Owner
NANUET UNION FREE SCHOOL DISTRICT
101 Church Street
Nanuet, NY 10954
845.627.9880
www.nanuetsd.org

Structural Engineer
Clapper Structural Engineering
160 Partition Street
Saugerties, NY 12477
845.943.9601
www.clapperstructural.com

Civil Engineer / Landscape Architect
THE CHAZEN COMPANIES
4 British American Blvd
Latham, NY 12110
518.266.7323
www.chazencompanies.com

MEP Engineer
SAGE ENGINEERING ASSOCIATES, LLP
9 Columbia Circle
Albany, NY 12203
518.453.6091
www.sagellp.com

Environmental Engineer
GREEN PATH ENVIRONMENTAL
79 Glover Street, Suite 1
Staten Island, NY 10308
347 276 2339
www.gpe.nyc

Construction Manager
JACOBS
One Penn Plaza, Suite
5420, 54th Floor
New York, NY 10019
646 908 6500
www.jacobs.com

REGISTERED ARCHITECT ARNALDO SAMUEL DRAGUN 022311 STATE OF NEW YORK

NANUET HIGH SCHOOL ELEVATOR

SED# 50-01-08-03-0-003-028

103 Church Street
Nanuet, NY 10954

REVISIONS

No.	Description	Date

ISSUED: BID ISSUE
DATE: 08/2/2022
SCALE: NTS
SHEET NAME:

LOGISTICS PLAN

SHEET NUMBER:

PH-001

DRAWN BY: Author
CHECKED BY: Checker
K:\REVIT\2111004.00 - Nanuet\Models\Template\TitleBlock Template sheet.rvt
9/19/2018 11:23:28 AM

PROJECT NUMBER: 2111004.00

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SECTION 01 12 00 – CONTRACT SUMMARY – GC-01

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

This Section includes a summary of each Prime Contract, including responsibilities for coordination and temporary facilities and controls. One set of Construction Documents is issued covering the Work of multiple Prime Contracts. Each Prime Contract is responsible to review all drawings and specifications for specific requirements indicated, and for a general understanding and knowledge of the work of other Prime Contracts. All Prime Contracts are responsible for all Work of their Contract no matter what drawing on which the Work appears. All Prime Contracts are responsible to coordinate their work related to the complete set of drawings and specifications, not limited to each prime contractor scope. **All Bidders should acknowledge that for each contract listed below, each contractor is their own General Contractor and subject to all General Contractor requirements.**

General Contract: The Interior Contractor shall be selected based on the bid procedure as described in the Bid Documents. Contract Bidders are responsible for (a) trade work coordination, (b) the scope contained in drawings listed below and (c) any and all additional scope specifically identified to be performed by the Interior Contractor in other Bid Packages in the Contract.

a. Interior & Exterior Contract: All work related to Interior construction includes but is not limited to the following items: (Refer to the Contract Documents for full scope of work.

1) Demolition, ACT, GWB, Plaster Ceiling, Painting, Patching, Flooring, exterior façade and window demolition, excavation, & abatement.
2) Work related to drawings: (*In addition to these drawings, the contractor is required to review all specifications included in the overall contract that may contain related scope or detail for this specific contract.)*
   a) Nanuet Senior High School – Elevator Addition

1.3 Related Sections include, but are not limited to, the following:

A. Division 01 Section “Work Restrictions” for use of the Project site and for requirements for continued Owner occupancy of premises.

B. Division 01 Section “Project Management and Coordination” for general coordination requirements.

C. Division 01 Section “Project Forms” for documents required for Testing and Coordination.

D. Division 01 Section "Temporary Facilities and Controls" for specific requirements for temporary facilities and controls

E. Applicable Specification Sections: All specification Sections itemized below are to be provided complete by this Prime Contract, unless noted otherwise. In addition to these specifications, the contractor is required to review all specifications included in the overall contract that may contain related scope or detail for this specific contract.
   1. Divisions 00 and 01 – Procurement and Contracting Requirements & General Requirements.
   2. Division 02- Existing Conditions
   3. Division 03 – Concrete
   4. Division 04 – Masonry
   5. Division 05 – Metals
   6. Division 06 – Wood and Plastics
   7. Division 07 – Thermal and Moisture Protection
   8. Division 09 – Finishes
   9. Division 14 – Special Construction

1.4 DEFINITIONS

1.5 MANAGEMENT AND COORDINATION

A. The Owner shall provide a Construction Manager.

   1. The Construction Manager shall provide a full time construction site representative recognized as the Construction Manager.

1.6 CONSTRUCTION MANAGER

A. The construction manager shall provide on-site administration of the Contracts for Construction in cooperation with the Architect as set in AIA Document A232 ™ – 2019,

General Conditions of the Contract for Construction, Construction Manager as Adviser Edition, as modified.

B. The Construction Manager shall provide administrative, management and related services to coordinate scheduled activities and responsibilities of the Multiple Prime Contractors with each other and with those of the Construction Manager, the Owner and the Architect. The Construction Manager shall coordinate the activities of the Multiple Prime Contractors in accordance with the latest approved Project Schedule and the Contract Documents.

C. Utilizing the construction schedules provided by the Prime Contractors, the Construction Manager shall update the Project schedule, incorporating the activities of the Owner, Architect, and Multiple Prime Contractors on the Projects, including activity sequences and durations, allocation of labor and materials, processing of Shop Drawings, Product Data and Samples, and delivery and procurement of products, including those that must be ordered will in advance of construction. The Project schedule shall include the Owner's occupancy requirements showing portions of the Project having occupancy priority.

D. Utilizing information from the Multiple Prime Contractors, the Construction Manager shall schedule and coordinate the sequence of construction and assignment of space in areas where the Multiple Prime Contractors are performing Work, in accordance with the Contract Documents and the latest approved Project Schedule.

1.7 GENERAL REQUIREMENTS OF PRIME CONTRACTS

A. Prime Contracts: The context used in this Section are separate Prime Contracts that represent significant elements of work that is to be performed concurrently and in close coordination with the work of other Prime Contracts for the benefits of the Owner. Each Prime Contract is recognized to be a major part of the Work.

B. Assignment of Work: Should a conflict be indicated, Section 011200 shall take precedence over all scope of work assignments that may be indicated elsewhere within the Construction Documents.

C. Layout and Installation: Each Prime Contractor shall schedule, layout and install their Work in such manner as not to delay or interfere with, but to compliment the execution of the work of other Prime Contracts, utility companies and Owner's operations.

D. Extent of Contract: The Contract Documents, drawings and specifications each contain more specific descriptions of the Work facilitating which Prime Contract includes specific elements of the Project.

1. Work provided by each Prime Contract shall mean complete and operable systems and assemblies, including products, components, accessories and installations required by the Construction Documents or indicated otherwise.

2. Prime Contractors shall exercise good judgment and perform all work according to related industry standards.
3. The Owner is exempt from payment of Federal, State and local taxes, including sales and compensating use taxes on all materials and supplies incorporated in completing the Work; these taxes are not to be included in the Bid. This exemption does not apply to tools, machinery, equipment or other property leased by, or to, the Contractor or sub-contractor, or to supplies and materials, which even though consumed are not incorporated into the completed work. Prime Contractors, and their sub-contractors, shall be responsible for paying any and all applicable taxes on said tools, machinery, equipment or property, and upon all said unincorporated supplies and materials, whether purchased or leased.
4. Prime Contracts shall understand that time is of the essence, and will adequately staff the Project by employing the appropriate trade's people to perform the Work; these people shall be experienced in their respective trades. A shortage of labor in the industry shall not be accepted as an excuse for not properly staffing the Project; all efforts shall be made to meet or exceed the schedule, including additional staff and/or labor hours necessary. All cost associated with this item shall be included within the Bid.
5. Local custom and trade union jurisdictional settlements will not control the scope of the Work of each Prime Contract.
    a. When a potential jurisdictional dispute or similar interruption of Work is first identified, or threatened, the affected Prime Contracts shall promptly negotiate a reasonable settlement to avoid or minimize the pending interruption and delays.
    b. Contractor's trade-related issues shall not be grounds for modification or extension of scheduled completion date(s).
6. The Work of all Prime Contracts requires close coordination with other Prime Contracts and construction personnel. Maintain flexibility and cooperation through the Project. "Out of Sequence" and "Delay" claims will only be considered when requirements of Division 01 "Administrative Requirements" have been adhered to. Delay claims must be in writing and forwarded to the Architect, per the requirements of the General Conditions of the Contract. Claims not submitted per these requirements will be rejected and/or denied.
7. The intention of the Work is to follow a logical sequence, however, a Prime Contractor may be required by the Architect or Construction Manager, to temporarily install, omit or leave out a section(s) of Work, out of sequence. All such out of sequence work, and come back time, at these areas shall be performed at no additional cost to the Owner.

E. Substitutions: Per Division 01 Section "Substitution Procedures", each Prime Contractor shall cooperate with the other Prime Contractors involved, to coordinate approved substitutions with remainder of the Work. Contractors shall submit all "Substitutions" at

least ten (10) days prior to the date for receipt of Bids as specified in the Instructions to Bidders 002113 Section 3.3 Equivalents or bid will be considered per "basis of design".

F. Construction Schedules: Refer to Divisions 01 Section "Construction Progress Documentation", "Preliminary Schedule" and "Project Management and Coordination" for requirements related to meetings and schedules.

G. Construction Sequencing and Phasing: Prime Contractor shall understand that Sequencing and/or Phasing Plans are contingent upon the work areas being complete/occupied, prior to the next area of Work beginning. Should an area of construction not be complete per the Project Preliminary Schedule, the Project Master Construction Schedule/Sequencing Plans will be adjusted accordingly. The Owner will not be responsible for delay claims due to adjustments being no fault of their own.

1. Prime Contracts may be required to re-sequence the phasing of the project as a result of changes to the schedule. Prime Contracts shall provide these adjustments at no additional cost to the Owner.

H. Existing Conditions: Each Prime Contract shall verify existing conditions in the field prior to work commencing in that area and immediately report conditions to the Architect that are not represented correctly by the Construction Documents.

1. Each Prime Contract is responsible for familiarizing himself with Project Site Logistics and provide a "site logistics plan locating storage area, scaffolds, rubbish areas, stockpiles and egress related to all work, included phased construction within 30 days of award.
2. Each Prime Contract has been given ample opportunity to review Existing Conditions related to the Project. Existing Conditions not noted in the Construction Documents that could be easily recognized during pre-bid review that interfere with the respective Prime Contract's work, shall be the responsibility of the respective Prime Contract. This includes all costs associated with removal, patching, relocation or re-fabrication of installations.

I. Hazardous Materials: Each Prime Contract shall familiarize themselves with the Hazardous Materials Sections/Drawings of the Construction Documents and follow DOL/OSHA/EPA/SED regulations while performing their respective Work in these areas. Discovery of non-identified or concealed hazardous materials shall be reported to the Construction Manager immediately and followed up with written documentation of the event.

J. Protection of Installations: Each Prime Contract is responsible for protecting their installations at all times. All costs incurred to repair, replace or clean insufficiently protected materials/installations shall be the responsibility of the installing Prime Contract.

1. Architect shall be notified, in writing, immediately upon material/installation being damaged; notification shall indicate responsible party.
2. Owner will not be liable for damaged materials and/or installations by "others", when "others" cannot be identified.
3. Repair damaged work, clean exposed surfaces or replace construction installations that cannot be repaired.
4. Each Prime Contract shall be responsible for removing all labels not required to remain from their installations.
5. Installations shall be wiped clean and proper protection then installed.
6. Each Prime Contract is responsible to protect another primes work in the event that prime has to work over or on top of that other primes work being complete. The prime working over the completed work takes full responsibility of that other primes completed work both in condition and operation.

K. Daily Cleaning: All Prime Contracts are responsible for any and all debris caused by their Work, including the Work of their subcontractors. A daily clean up and disposal is required by each Prime Contract for the periods which that Prime Contract, or its sub-contractors, are performing Work on site.

1. Assign at least one person for a daily clean and sweep of the work area(s). Prime Contractor shall allot sufficient manpower and time for this to be completed by the end of each shift. Submit name of this person(s) to Construction Manager.
    a. Construction Manager shall have the authority to give direction to person(s) on the Project Site identified by the Prime Contract as designated for cleanup tasks. This shall include the safety review/securing of the site-work zone after each shift.
    b. This person has checked that no construction debris was dumped in any district dumpers during this end of shift site review, if found the contractor must remove immediately the next morning to avoid back charges costs of $1500 per day not removed.
2. Any Prime Contract not providing personnel for Daily Cleaning will be Back Charged for labor provided by the Owner to complete this task.
3. Contractor working solely in an area shall be responsible for clean/sweep of that area.
4. Daily cleaning will not mean any one Prime Contract is responsible for assisting another Prime Contract with removing major quantities of debris created by a particular Prime Contract's Work.
5. Daily cleaning will be mandated to remove from the building any debris created by day-to-day activities. All Prime shall assist in sweeping shared work areas and shared corridors while working on site. Each Prime shall assist in mopping of shared corridors while working on site or as required by the Owner.
6. All prime contractors and subcontractors are required to provide sweeping compound for daily cleaning in their respective exterior and interior work areas.

Each Prime Contract shall provide a sufficient number of brooms or other necessary tools, for use by their personnel to adequately fulfill their obligations.

7. All prime contractors shall provide and maintain garbage cans/refuse containers with liners for each construction area of their respective contracts as directed by the Construction Manager and shall be responsible for disposing of these materials to a dumpster.
8. All prime contractors provide the necessary equipment/containers (lull/skip-box) to move daily clean/sweep debris from the building to a dumpster on a daily basis, for each construction area of their respective contracts. Skip-box shall be emptied to a dumpster by 9:00 a.m. the following day.
9. Cleaning shall be deemed a Safety & Health issue, with Prime Contracts being held accountable for fulfilling their contractual obligations.

L. Final Cleaning: At Substantial Completion of each area of construction, each Prime Contract shall wipe/vacuum clean all of their respective installations; All interior contracts performing work inside the buildings shall mop clean all building surrounding areas and finish flooring and remove all marks/blemishes to the finish, for each construction area of their respective contracts. Each area of construction shall be wiped clean of all construction dust and debris prior to turnover to the Owner.

M. Cutting and Patching: All Primes are responsible for cutting and patching required to complete their Work. All repair of existing finish Work (including finish floors) shall be performed by contract requiring work, meeting or exceeding minimum contract requirements for that particular section, specification, or type of work. All concealed openings (piping, ductwork, conduit, etc.) must be repaired to comply with specified wall or deck conditions as well as required fire and sound ratings. All corridor penetrations require fire safing. If contractor elects to install their new work in an existing unrated wall or floor opening, whereas the wall/floor is a fire rated condition, that contractor is responsible to fire rate that opening to match the wall/floor fire rating with new and all other existing wire, piping, ducts etc. Other areas are noted in drawings and specifications.

1.8 Project Schedule. The nature of this project is to complete all the work listed as Phase 1A in the schedule by **the Project Closeout Dates specific to each Prime Contract as listed below**. Each Prime Contractor shall include in their bid proper allowances for foul weather.

A. Bids Received: 8/26/2022

B. Award of Contract: 9/6/2022

C. Notice to Proceed: 9/7/2022

D. Submittals: Unless otherwise noted, the following items are to be submitted within 60 business days after Notice to Proceed:
   1. Submittal List and Submission Schedule – **10 Days After NTP**
   2. Field Investigations
   3. Shop Drawings
   4. Long Lead Items – **15 days after NTP**
   5. Schedule of Values and Key Submittal List – **10 Days After NTP**

E. Mobilization: 09/14/2022

F. Substantial Completion and Project Closeout:

   1. **General Contract 01**
      a. Substantial Completion: May 19, 2023.
      b. Project Closeout: June 19, 2023

1.9 TEMPORARY FACILITIES AND CONTROLS OF PRIME CONTRACTS

A. Conditions of Use: Keep temporary services or conditions clean and neat in appearance. Operate in a safe and efficient manner. Relocate temporary facilities as required as work progresses; do not overload facilities or permit them to interfere with progress. Take necessary fire prevention measures; do not allow hazardous, dangerous, or unsanitary conditions to develop or persist on the Project site.

   1. Installation, operation, maintenance, and removal of each temporary service or condition are considered part of the respective Prime Contract's own construction activity, as are costs and use charges associated with each facility.
   2. Locate service or condition where they will serve the Project adequately and with minimum interference of the Work, coordinate with the Construction Manager and the other Prime Contracts prior to installation.

B. Temporary Use of Permanent Facilities: Prime Contract, as installer of each permanent service or condition, shall assume responsibility for its operation, maintenance and protection during use as a construction facility prior to the Owner's acceptance, regardless of previously assigned temporary facilities and controls responsibility.

C. Owner's Facilities: Contractors are not allowed to use the Owner's facilities (toilets, telephones, food service, etc.) for their own benefit or convenience. Prime Contract Superintendents shall enforce this policy with their respective work forces.

   1. Construction personnel parking will be restricted to area as directed and agreed to by the Owner, and to facilitate the completion of the work. Owner reserves the right to remove from their property, unauthorized vehicles occupying unauthorized areas, at respective vehicle owner's expense.

D. Storage on the Project Site: Each Prime Contract shall provide sufficient secure weather-tight storage facilities for their materials and equipment. These storage containers are required to be located on the "site logistics plan." The Owner's facilities and the Project's building areas shall not be used for storage unless agreed upon, in writing, with the Owner via the Construction Manager.

1. Until permanently incorporated into the Work, all materials on the Project site are considered to be the Prime Contract's responsibility for security and protection.
2. Prime contractor is required to check on their onsite stored material periodically to ensure that all material continues to be located in the stored location and that it remains protected from all damage, theft, and endangerment to others and ready to be used on notice for coordination with other contractors. Failure to arrange for materials to be on site to complete coordinated work with other Prime Contractors will result in back charges for delays resulting therefrom.
3. Temporary long-term storage facilities are not available to Prime Contracts by the Owner.
4. Prime Contractors and their subcontractors, shall coordinate deliveries with the Construction Manager to ensure that disruptions and Owner inconvenience are avoided.

E. Tools and Equipment: Each Prime Contractor shall provide all tools and equipment necessary for its own activities; this includes secure lock-up and storage for all items on the Project Site.

1. Provide all construction aids and miscellaneous services and facilities necessary exclusively for its own construction activities; this shall include any additional supplementary power, ventilation, lighting requirements and weather protection.

F. Project Site Communication: Each Prime Contractor shall provide their Project a full time on site at all times Superintendent with a mobile phone for the duration of the Project, as indicated in their Scope of Work. Construction Manager shall be furnished with contact numbers associated with each phone.

G. Safety: Prime Contracts, not the Architect or Construction Manager, are responsible for Project Site Safety, as related to their operations (refer to Section 013150 "Special Procedures" for further requirements).

1. Each Prime Contract shall correct safety hazards and violations immediately. If safety issues are not immediately rectified, the Owner shall secure outside sources to correct the deficiency and back charge the responsible Prime Contract.
2. Maintain unobstructed access/egress to fire extinguishers, fire hydrants, stairways, corridors, ladders and other safety routes/devices.

H. Fire Extinguishers: All Prime Contracts provide and maintain "general use" fire extinguishers for each construction area of their respective contracts; comply with applicable codes for quantities required. Use of the Owner's fire extinguishers to meet

this requirement is not permitted. Comply with NFPA for recommended classes for exposure; extinguishers shall be inspected and appropriately tagged prior to being brought on site. Provide stands, painted bright orange, sturdy enough to carry the extinguisher, and built as not to create a tipping hazard.

1. Each Prime Contract shall supplement this requirement by providing additional fire extinguishers specifically related to their work activity (e.g., welding, soldering, abrasive cutting, etc.).
2. Each Prime Contract shall provide and maintain proper fire extinguishers at/in their respective on site office and storage facilities.
3. Store combustible materials in approved containers in fire-safe locations.

I. Welding: Any Prime Contract performing welding, cutting or other activities with open flames or producing sparks shall at a minimum:

1. Coordinate interruption/shutdown of detection system(s) to avoid creating false alarms.
2. Protect the area and surrounding areas from fire and damage.
3. Maintain fire extinguishers, compatible with activity, at the location of the activity.
4. Provide a continuous Fire Watch during the activity and one-half hour beyond the completion of the activity.
5. Provide all necessary fans and ventilation required for the activity.
6. Any welding, burning and or use of flame the contractor is required to provide all required “hot work permit” to use such equipment prior to start of work. Its mandatory that no “hot work” shall start without these permits issued to the CM and Owner. Failure to this requirement will result to the removal of the project super of that company from all district projects.

J. Remove each temporary facility when it can be replaced by the authorized permanent facility no later than Substantial Completion, or as directed by the Architect and/or Construction Manager. Complete or restore permanent facilities that may have been delayed due to interim use of a temporary barrier or condition.

K. Temporary Power: Each Prime Contractor shall provide for their own temporary power needs for any scheduled electrical utility shut downs. Each Prime Contractor shall provide for their own temporary generators, power cords and temporary lighting as needed during these periods to continue to perform their work and maintain adherence to the Preliminary Schedule and approved Project Master Schedules. All temporary power equipment shall comply with all applicable codes and regulations.

L. Temporary YODOCK Barriers – **filled with water**: Provide new materials whenever possible; undamaged, previously used materials, in serviceable condition, may be used if approved by the Construction Manager. Refer to the respective Specification Section when selecting materials and provide similar materials suitable for intended use.

M. Relocation of YODOCK Temporary Barrier: In the event a Prime Contractor requires relocation of a temporary barrier, Prime Contractor requiring relocation shall do so and shall protect all personnel in the work area during the relocation.

1. Initial installing Prime Contractor shall coordinate the location of barriers with other Prime Contracts, prior to placement of the barrier.
2. If a barrier must be located such that it will interfere with another's work, the Contractor requiring the work now interfered with shall relocate the barrier as required to install his work.
3. Coordinate with Construction Manager.

N. Termination and Removal of YODOCK Barriers: Remove each temporary facility when it can be replaced by the authorized permanent facility no later than Substantial Completion, or as directed by the Architect and/or Construction Manager. Complete or restore permanent facilities that may have been delayed due to interim use of a temporary barrier or condition.

O. Waste Disposal Facilities:

1. General debris/refuse/construction waste containers (dumpsters) shall be provided by each prime contractor and secured as specified herein this contract.
2. It shall be the responsibility/requirement of each Prime Contract to bring their waste to the dumpsters, including but not limited to all equipment, demolition debris, discarded materials with further identification including the following; construction and demolition debris refers to discarded materials generally considered non-hazardous in nature, including but not limited to steel, glass, brick, concrete, asphalt material, pipe, gypsum wallboard, and lumber, from the construction or destruction of a structure as part of a construction or demolition project or from the renovation of a structure, including such debris from construction of structures at a site remote from the construction or demolition project site.
3. It shall be the responsibility and requirement of each Prime Contract to recycle metals generated by its Work, and the Work of its subcontracts.
4. Joint-effort recycling by all Prime Contracts is encouraged.

P. Temporary Sanitary Facilities: Provide temporary self-contained toilets units for duration of the project.
    1. Temporary Sanitary Facilities:
        a. Each prime contractor is required to provide their own Temporary Sanitary Facilities and secured behind fencing and/or locked after work hours and weekends.
    2. Comply with regulations and health codes for type, number, location, operation, and maintenance of fixtures and facilities.

3. Provide separate facilities (minimum of one ea.) for male and female personnel in proportion required by OSHA.
4. Shield toilets to ensure privacy.
5. Coordinate mobilization and demobilization of units with Construction Manager.
6. Toilets shall be cleaned at least once per week, with additional facilities or cleanings provided if requested by Construction Manager.
7. Provide and maintain adequate supply of toilet tissue and hand sanitizer for each facility.

1.10 WORK HOURS & SEQUENCE

A. GC-01 Contract is permitted to work during the school day on non-noisy work. Sawcutting, jackhammering, or major excavation close to the building must be performed second shift or on weekends. The contractor is responsible to factor this into their bids. It is expected that building penetrations for elevator shaft openings will be performed on weekends or second shift.

B. GC is to review the contract logistics plan for the required second shift/weekend work. This work is required to be performed at no additional cost to the owner and shall be priced in the contractor's base bid.

C. There are blackout dates to which contractors may not work due to testing. Consult with CM for these dates.

D. There is minor abatement involved with the GC-01 contract on this project. All abatement must take place on weekends. Abatement cannot take place while the school is occupied. The GC-01 contract is to factor this in their bid. **All MEP-related abatement is by GC-01. GC-01 is expected to review the abatement drawings for this scope and capture this scope in their bid.**

E. During the school days, Work is to be performed in this contract during the hours of 3:30pm to 10:00pm on weekdays, and Saturdays and Sundays from 7:00am to 3:30pm. During School breaks, work is to be performed from 7:00am to 10:00pm. There is no additional cost to the owner for working the hours of 3:30pm through 10:00pm, or weekend work during the school year. **Any work done during these times MUST BE COMPLETED, CLEANED, AND TESTED AS NECESSARY FOR STUDENT OCCUPANCY BEFORE THE START OF THE NEXT SCHOOL DAY. Contractors are required to schedule work during school breaks, school days off, and school holidays**.

F. Summer work starts June 28th through August 23rd for 2022. The Summer working hours are from 7:00am to 9:30pm. There is no additional cost to the owner for working the hours of 3:30pm through 9:30pm or on weekends and holidays during the Summer.

G. Contractors are required to start working on site within 30 days of execution of

contract, to the extent permitted by contract. Contractors are required to coordinate and perform work simultaneously with other Contractors. Contractors are required to complete their contract work by the designated Substantial Completion and Final Completion end dates as indicated on the Invitation to Bid.

H. Mandatory clean up periods - From August 24th, 2022 to August 31st , 2022 and August 30th , 2022 to September 6th, 2022, contractors shall clean up all interior and exterior areas.

I. Contractors are required per contract to fully staff the project during the work shifts stated above with the required manpower to complete their work within the allowed scheduled time frame. Contractors are required to provide a 72-hour advanced request to the Owner via the Construction Manager for any Saturday and Sunday work. If a project schedule delay has been caused by the fault of the contractor, the contractor is required to provide 3rd shift work from 9pm to 6am to make up the project schedule. All costs for CM, Architect and district personal related to this 3rd shift request will be charged to the contractor at a combined rate for all at $3,000 per 8hr shift.

J. The shifts noted above are not considered overtime or premium time hours.

K. Contract summaries will provide start and end dates for each contractor.

L. Additional requirements:

1. Multiple Crews: Each Prime Contract shall provide multiple crews, supervision, cranes, scaffold and other means necessary to perform the Work, and maintain the Project Master Schedules.
2. Interruption of any utility and/or power must be coordinated with the Owner, via the Construction Manager.
3. Any and all overtime, weekend and/or holiday work required to meet the Project Master Schedules shall be incorporated in the respective Prime Contract's bid.
4. Should a Contractor's progress fall behind, as to schedule, Prime Contractor shall employ additional – 3rd shift and/or overtime and/or weekend workforce until situation is rectified, to the satisfaction of the Architect and Construction Manager, at no additional cost to the Owner, however subject to charges as stated in section 1.10 E for lack of maintaining schedule
5. Should a Prime Contract feel another Prime Contract is delaying them sufficient time to complete their installations, per the schedule, the Architect and Construction Manager shall be notified in writing immediately of the situation (refer to Conditions of the Contract for protocol). A Prime Contract creating such a delay, that causes a proven burden upon another Prime Contract to maintain schedule, shall bear all costs incurred by the delayed Prime Contract to maintain the schedule.
6. The Architect and Construction Manager shall not be overburdened as to overtime cost, to monitor the work, due to no cause of his or her own. Owner will

compensate the Architect and Construction Manager for all additional cost related to the issue of a Prime Contractor's failing to execute the Contract by fully staffing per the work hours and days noted herein. The Owner reserves the right to back charge the responsible Prime Contract for these fees if incurred.

7. All Asbestos and/or Lead Abatement shall take place to meet the requirements of the Preliminary Schedule and Project Master Schedules and shall be coordinated with the other Prime Contractors prior to commencement.

M. The Work shall be conducted to provide the least possible interference to the activities of the Owner's personnel and the surrounding property owners (neighbors).

1. Prime Contracts are hereby notified that: All Prime Contractors and their subcontractors shall limit excessive noise during 2nd shift known as work extending to 10PM weekdays upon approval by owner and city work hour restrictions. These operations shall not create a disturbance to neighboring properties.

N. Construction access to the site shall be limited to personnel, equipment and deliveries by suppliers relative to the Work of Prime Contractors and their subcontractors. Prime Contracts shall keep the Construction Manager advised of persons accessing the site and shall seek assistance with coordinating parking and storage facility locations for all Prime Contracts.

1. Where applicable, Contractors shall provide Building Site perimeter barricades as described herein the project and all temporary exit doors/lockable gates on the Project, securing these doors, fencing and/or gates at the end of each work shift. **Contractor is to use the provided site logistics plans as a minimum standard. The contractor is required to provide their own coordinated site logistics plan and update as required throughout construction.**

2. When a Prime Contract engages in overtime, weekend or 2nd shift work, during the summer months and or during the normal school year, the respective Prime Contract shall notify Construction Manager of such and be responsible for securing the Project Site at the end of that work shift and perform site walk around the outside of construction area/work zone ensuring all debris is pickup up and there are no construction related hazards of any kind present once the responsible person leaves the site for the evening or weekend. This includes that all materials and equipment are fenced in and keys are removed. All interior projects have the same requirement to ensure that outside the work zone is clean from dust-dirt and that no materials are left outside the work area at any time.

3. GC shall provide all electrical connections for temporary panels as required for abatement work. GC shall walk the site prior to submitting their bid to determine logistics for electrical and water connections. Owner shall provide power and water for GC to connect to. There shall be no additional cost to the owner for

these connections.

1.11 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.12 DRAWINGS AND SPECIFICATIONS

A. Construction Documents indicate the sum total of the Contract that make up the complete work for the Project. Through this Section "Summary of Work", the intent of the Contractor's scope of Work and responsibility is generally described. Related requirements and conditions that are indicated in the Contract Documents include but are not limited to the following:

1. General Conditions and Requirements.
2. Referenced and applicable Codes, Regulations and Standards.
3. Scheduling and phasing requirements.
4. Existing conditions and restrictions on use of the site and facilities.

B. Drawings and Specifications are cooperative and supplementary. Portions of the Work, which can best be illustrated by Drawings, are not included in the Specifications and portions best described by Specifications are not depicted on Drawings.

1. All items necessary to complete the work shall be furnished whether written or illustrated.
2. All primes shall exercise good judgment and perform all work according to related industry standards.

PART 2 - SCOPE OF WORK

2.1 PRIME CONTRACTS

A. Scope of Work: Work includes but is not limited to, the following:
1. Provide all work identified in the Contract Documents.
2. All Specification Sections provided.
3. All abatement drawings provided for reference.
4. GC-01 is responsible to install all required access hatches. GC to coordinate with MEP trades for locations.

2.2 SPECIAL NOTES

1. Per specification section 01 71 23, the Site work contractor shall employ an independent Land Surveyor, licensed to practice in the state of New York, for the duration of the work, to certify the accuracy of the survey work. At Mobilization the SW-01 Contractor shall employ their land surveyor to collect control points (benchmarks) and furnish a survey to the construction manager for coordination with the owners' vendors and other prime trades. Refer to spec section 01 71 13 for related contract requirements.

2. Contractor is responsible for all rock removal, cuts/fills to bring the site to the correct elevation.

3. All trenching for site electric is by the GC-01 contractor. EC shall install all conduit and warning tape for underground electrical utilities. GC-01 to coordinate with EC-01 for trenching scope.

4. Contractor is to provide warning tape for all new buried water, gas, storm water, or sewer line utilities. Only warning tape of electrical utilities is by EC-01. Construction manager is to inspect installation of warning tape before backfilling of utilities.

5. Contractor is responsible for all existing subgrade cuts and import as required to achieve specified elevations. Any surplus material, clearing debris, tree pruning debris, etc. are required to be removed from the site and legally disposed.

6. No import recycled materials will be allowed.

7. All stormwater protection, silt fence, erosion control, SWPPP maintenance/compliance etc. is by the site contractor. The engineer will perform weekly SWPPP inspections and issue reports on their findings. Should any SWPPP non conformances be identified. The site contractor will be required to correct said non conformances within the day of notification.

8. Staging area work necessary (laydown areas, access roads, parking areas, site fence enclosure, etc.) is by the General Contractor. General contractor is to reference the logistics plans located in the contract drawings as a minimum standard. General Contractor will be required to provide a logistics plan for approval prior to commencing work. **The contractor is to include in their bid for all fencing around the work are to receive temporary privacy fence screens. This includes existing fence to remain during construction. See logistics plan.**

9. contractor to hire a utility survey company to map out all onsite utilities (both public and private) at locations of new work and locate on map/drawing by NYS licensed Surveyor to be provided to construction manager.

10. As-built drawings showing underground drain structures/basins, water lines, electrical, conduits/boxes, will be completed by the site contractor and digital USB copy provided to the owner at the conclusion of the project. Contractor will be required to turn over 2 hard copies of these documents as well.

PART 3 - EXECUTION

3.1 WORK SEQUENCE

A. The Work shall be conducted to provide the least possible interference to the activities of the Owner's personnel, per the Project Preliminary Schedule.

B. Work required during overtime, extended shifts or holidays due to failure of contractor to maintain schedule, will be monitored by Architect/Construction Site representative, and may be monitored by Owners' personnel. Additional costs for Architect/Construction Site Representative and/or Owner personnel will be borne by the Contractor.

C. Coordination of any utility and power interruption must be done with approval of the Architect/Construction Site Representative. Shutdowns must occur during non-occupied timeframes only.

D. Construction access to the site shall be limited to those designated for personnel, equipment and deliveries by the Owner. All contractor staging, parking and storage shall be coordinated with the Construction Site Representative and subject to change.

E. Payments: Each bid that covers more than one school (i.e. one SED project) shall provide completed AIA G732 & G703 by building (for each SED project).

F. No work shall be installed without approved shop drawings. Any work in place without approved shop drawings will be rejected and removed by that contractor at their expense and backed charge all other costs related to.

G. Any work deemed by CM, Architect and District not properly installed by a contractor per the contract drawings and specifications shall be removed immediately and corrected, with all associated costs to be borne solely by that contractor.

H. All prime contractors shall coordinate their contract work with other primes to meet the project schedule and for a complete operational system or area or work.

I. All contractors are to provide within 3 weeks of award a "base line" construction schedule for their work from commencement to completion including all phasing. This schedule is to be updated monthly to show percentage progress of each item listed. This schedule shall be revised to provide a recovery schedule in the event of a delay for any reason. The recovery schedule shall include the "base line" item and the recovery

to show how the delay is affecting the overall project schedule. This schedule is to be provided in MS Project or Primavera. Excel schedules are not accepted.

J. Prime contractor "base line" schedules are to be reviewed by each prime contractor and coordinated where work is related and that each prime's work shall be included in each "base line" contractor's schedule as necessary for coordination.

K. All contractors are to provide 2-week look ahead schedules showing work related to the base line and shall be coordinated with other prime 2-week look ahead schedules. These schedules will be Excel format. Format will be provided by the CM.

L. Contractors to provide a full-time supervisor on site 100% of the time. This is not a working foreman. Supervisors are not working with tools they are supervising their workers and coordinating with other contractors and district/ CM. Failure to provide will be default of your contract and subject costs related to and termination.

M. All prime contractors are the provide a project manpower structure showing names and telephone numbers of each responsible person on the project. This shall be updated as needed if personal changes are made.

N. All site equipment and dumpsters are to be behind temporary chain link fence when stored on site and or within the construction work zone where temporary chain link fence has been providing and installed by the prime. Each prime contractor is responsible to provide and install temporary chain link fence around their own stored equipment and dumpsters on site.

O. No equipment, panels or any services shall be turned off for any reason without written request and approval by the district. Project form shall be used for all shutdowns and required a 3-day notice. Other shutdowns may require more time.

3.5 CONTRACT No. 1 GENERAL CONTRACT (GC)– GENERAL CONSTRUCTION PRIME CONTRACT FOR INTERIOR WORKS AT CONTRACT AT NANUET SENIOR HIGH SCHOOL SCOPE OF WORK INCLUDES CEILING REPLACEMENT, ABATEMENT, WALL PENETRATIONS AND REFINISHING, FOUNDATIONS, SITE DRAINAGE AND REGRADING, MASONRY, STEEL, WATERPROOFING, ROOFING, NEW ELEVATOR CAB AND ASSOICATED COMPONENTS, FINISHES, FLOORING AND OTHER INTERIOR WORK AS INDICATED ON CONTRACT DOCUMENTS.

A. Project Site Superintendent: GC shall provide one (1) full time, non-working Project Site Superintendent while any work related to this Contract is being performed. Superintendent shall be responsible for the daily activities of this Contract and work closely with the Construction Manager and the other Prime Contract Superintendents/Foremen, in a manner that best promotes the objectives of the Project.

B. Superintendent shall be on-site while Contractor's own forces, and/or subcontractors are performing work on the Project Site; also while other Prime Contracts are installing work, or require the coordination of work related to this Prime Contract, and/or as requested by the Construction Manager.

1. Superintendent shall be the same individual throughout the duration of the Project.
2. Project Site Superintendent shall be an individual with minimum of five (5) years' experience in this field of work.
3. Refer to Section 013100 "Project Management and Coordination" for further requirements.

B. Project Foreman: GC shall provide at least one (1) full time Project Foreman during each shift of work at each school; Foreman shall be able to make binding decisions, as they relate to the daily activities of their crew, as related to achieving the goals of the Project.

C. Site Communications: GC shall provide Project Superintendent with a mobile phone; all costs and service charges shall be paid for by GC; provide Construction Manager with contact number(s).

D. Project Site Field Office: Provide site office facilities for this Contract's Project Superintendent. Site Office shall be equipped with telephone with answering machine, fax and e-mail. Contact information shall be provided to the Construction Manager.

1. The Owner reserves the right to seek reimbursement for temporary facilities not provided by this Prime Contract.

E. Scope of Work: Work of the GC includes, but is not limited to, the following:

1. Coordination with other Prime Contracts, Owner and Construction Manager as required to adhere to and maintain approved Project Master Schedules. Prior to first payment, this includes developing and submitting the Project Master Schedule for Interior works
2. Provide all interior demolition as indicated in the Construction Documents, or required for Work of this Prime Contract:
    a. Coordinate all demolition with Hazardous Materials documents. Coordinate with all other Prime Contracts regarding removals required for the Project. Demolition of a system shall mean any and all components removed in their entirety, to the point of origin, source or substrate.
3. Provide all new ceiling systems and patching of existing ceilings, complete where indicated in Contract Documents.
4. Contractor access doors furnished by the prime trade requiring access; installation of all access doors will be by contract GC-01. General contractor is to coordinate with other primes as to location and quantity of access doors to be installed at the appropriate time.
5. The GC shall provide and install flooring protection at all schools prior to demolition to protect the owner's property, and to accommodate storage of Owner

property Flooring protection shall be 6 Mil plastic sheeting covered by Masonite hardboard of 1/8" thickness installed so as to cover entire floor area of designated spaces, with joints abutting one another and each joint fully taped with duct tape. At the conclusion of interior work, all interior work areas shall be cleaned and Masonite hardboard and plastic sheeting removed in order for the district to restore the classroom(s) and/or corridors. After the removal of Masonite and plastic sheeting, the exposed existing flooring shall be swept clean by the GC.

6. The GC shall provide one (1) 45' storage containers for the Owner's use, to be placed as directed by the Owner. GC shall provide a Schedule of Values line item in the base bid for storage trailers. If Owner chooses not to utilize this provision, the value of the storage trailers shall be credited back to the Owner at the end of the project.
7. This prime contractor shall provide ALL demolition and new construction of housekeeping pads for MEP contractors for all schools as shown on the contract documents.
8. GC shall conform to phasing and sequencing of interior work as coordinated with the Owner. See Milestone Schedule
9. Environmental Protection: Provide protection, and conduct construction in ways and by methods that comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.
    a. Restrict use of noisemaking tools and equipment to hours that will minimize complaints from persons or firms on or near the Project site.
10. Provide dust control within delineated building site while the Work of this Contract is being performed. Limit situations that may create dust contamination while Work of this Contract is idle.
11. Provide all Control Lines and Elevations as required. GC shall transfer lines and elevations to other locations as necessary.
12. Provide cut and patch work related to that of this Prime Contract, and at those areas specifically identified in the Construction Documents, regardless of trade creating the area to be patched.
    a. Each Prime Contract is responsible for all other respective cutting and patching required of their installations (refer to Section 01 73 29 for further information).
13. Provide all access panels indicated, and those not indicated whereas inaccessible installations have been provided by this Prime Contract, located above hard ceilings or in walls. Access panels required for MEP equipment accessibility are to be provided by the MEP contractors and installed by the interior contractor. Coordinate locations for panels with MEP contracts.
14. Provide all prep/paint finishes as indicated in the Construction Documents.
15. Provide finishes including, but not limited to; CMU, gypsum board assemblies, plaster, suspended ceiling systems, and all paint and finish systems including those on all surfaces adjacent to and damaged by renovation work during the Project.

a. Provide all associated surface preparation for each finish included in this Prime Contract.
b. Provide all plaster wall patch at all removal locations and any locations shown on the contract documents

16. Provide all miscellaneous wood blocking, shimming and supports for items or equipment installed under this Prime Contract, and as coordinated with other Prime Contracts for metal strapping and/or wood blocking for installation of MEP for interior Work.
17. Provide through-penetration fire stop systems in unit masonry assemblies, gypsum wall construction, floor penetrations, and at all structural member penetrations as per contract documents. Contractor shall coordinate with all MEP contractors to complete the scope of work.
18. GC is specifically reminded that there may be miscellaneous asbestos pipe insulation/fittings above some ceilings and inside wall areas. Contractor will investigate above the ceiling and walls prior to demolition and carefully perform the work as necessary to not disturb any insulation/fittings.
19. GC will provide all necessary patching/self-leveling/grinding of flooring substrate to insure a smooth flat floor finish prior to installation of new VCT or urethane flooring.
20. Substantial Completion: Clean all GC installations and provided equipment at the time of Substantial Completion or as directed by Construction Manager.
21. GC to provide negative air machines to properly exhaust all work areas of any odors, dust, fumes.
22. Refer to Division 00 Section "Project Forms" and make use of these forms for the installation and coordination of the Work. These forms are included to assist this Prime Contract with coordinating the installation of Work by others prior to enclosing and/or finishing work. Owner will not compensate Prime Contract for work not properly coordinated that result in added work, or removal of work. Secure the proper signatures or acknowledgements, as indicated, prior to installing/completing the Work.
23. Coordinate all the preceding requirements, accordingly, with all applicable Alternates indicated in Section 01 23 00 "Alternates".

F. Supplemental Temporary Facilities and Controls by GC include, but are not limited to:

1. Waste Disposal Facilities: Provided by each contractor.
2. Temporary Interior Barricades: Provide, maintain and eventually remove all temporary barricades per OSHA Regulations, Industry Standards, or as indicated in the Construction Documents. These include, but are not limited to, the following areas:
   a. To isolate new construction areas.
   b. To isolate renovation areas.
   c. Floor openings/penetrations, including stairwells.

1) Horizontal Openings: close openings in floors and horizontal surfaces with load bearing, wood and/or steel framed construction per applicable regulations.

3. Temporary Doors, Frames & Wall Assemblies: Provide, maintain and eventually remove all temporary installations per OSHA Regulations, Industry Standards, or as indicated in the Construction Documents. Provide fire rated assemblies as required. Provide exit (panic bar/crash bar) devices at locations of egress. Coordinate locations with Construction Exiting Plan, Sequencing/Phasing Plans, and the Construction Manager. Temporary doors shall be constructed using ½" plywood and 2x construction, equipped with hasps, locks, handle and latch mechanism, and spring or counter weight installed to allow door to close after opening. Permanent doors will not be used in temporary conditions.
4. Temporary Sanitary Facilities: Provided by each contractor.
5. Existing Stair Usage: Use of Owner's existing stairs in unoccupied areas will be permitted, provided that at Substantial Completion, stairs are restored to conditions existing before initial use.
    a. Provide photo documentation of existing stair conditions prior to use by all Prime Contracts. Document during use, and at completion of the Renovation Project in order to document any and all damage to the Owner's property.
    b. Provide protective coverings, barriers, devices, signs, or other procedures to protect stairs and to maintain means of egress. If, despite such protection, stairs become damaged, restore damaged areas so no evidence remains of correction work.
6. Indoor air quality management at all areas of Construction, once building is enclosed.
    a. Provide all necessary dust partitions, fans, temporary ducts, and barricades to properly contain and ventilate all work area fumes and odors, created by demolition and new construction or alterations, directly to the outside. Ventilate to an area outside the building, sufficiently away from the building, as not to contaminate other areas. There will be no additional claims honored if the Construction Manager requests additional ventilation or requirements.
    b. Provide and exhaust air system for the project indoor areas that could produce fumes, VOC's, off gasses, dusts, mists, or other emissions.
    c. System Operation:
        1) A sufficient quantity of exhaust fans in existing window openings or other approved locations shall be operated.
        2) Exhaust air system shall operate for a minimum of 72 hours after work is completed or until all materials have cured sufficiently so as to stop out – gassing of fumes or odors and area has been ventilated to remove all detectable traces of odors and fumes.
        3) Maintain 25 feet clearance from all temporary exhaust outlets to all active building outdoor air intakes.
        4) Refer to Division 01 Section "Work Restrictions" for further information.

7. Provide all shoring required for Work of this Prime Contract, including but not limited to;
    a. Cutting or altering of existing construction.
    b. Provide protection of all new and existing surfaces during the Work. Do not stand, walk, or work off of any unprotected finished surface above the floor.
8. Maintain temporary fencing and barricading to keep unauthorized persons away from dangerous and hazardous areas for which this Prime Contract is responsible.
9. Traffic Controls: Provide flagman while any operation of this Prime Contract interferes with traffic flow on adjacent roadways.
10. Snow and Ice Removal: Provide removal of snow and ice until Substantial Completion of the Project, or as required to avoid delays in the Schedule.
11. Temporary Barricades: Provide, maintain and eventually remove all temporary barricades per OSHA Regulations, Industry Standards, or as indicated in the Construction Documents. These include, but are not limited to, the following:
12. Isolate site renovation areas.
13. Temporary Sanitary Facilities: Provided by each contractor.
14. Maintain temporary chain link fencing with driven posts in the ground and Yodock or approved equal barricading to keep unauthorized persons away from excavations and hazardous areas for which this Prime Contract is responsible.
15. Traffic Controls: Provide flagman while any operations of this Prime Contract interfere with traffic flow on adjacent roadways, active parking lots and while any pedestrian traffic is entering the area or parking lots.
16. See Specification 013150 Safety & Health for further detailed information.

END OF SECTION 01 12 00

SECTION 01 12 01 – CONTRACT SUMMARY – EC-01

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes a summary of each Prime Contract, including responsibilities for coordination and temporary facilities and controls. One set of Construction Documents is issued covering the Work of multiple Prime Contracts. Each Prime Contract is responsible to review all drawings and specifications for specific requirements indicated, and for a general understanding and knowledge of the work of other Prime Contracts. All Prime Contracts are responsible for all Work of their Contract no matter what drawing on which the Work appears. All Prime Contracts are responsible to coordinate their work related to the complete set of drawings and specifications, not limited to each prime contractor scope. **All Bidders should acknowledge that for each contract listed below, each contractor is their own General Contractor and subject to all General Contractor requirements.** B.

1. **Electrical Contract EC-01:** The Electrical Contractor shall be selected based on the bid procedure as described in the Bid Documents. Contract Bidders are responsible for (a) trade work coordination, (b) the scope contained in drawings listed below and (c) any and all additional scope specifically identified to be performed by the Electrical Contractor in other Bid Packages in the Contract.

    1) Work related to drawings: (*In addition to these drawings, the contractor is required to review all specifications included in the overall contract that may contain related scope or detail for this specific contract.)*
        a. NANUET HIGH SCHOOL – ELECTRICAL FOR HIGH SCHOOL ELEVATOR ADDITION.

a. Bid Package Contract - Electrical Work - 01: All work related to Electrical Contractor which includes but is not limited to the following items: (Refer to the Contract Documents for full scope of work.)
    1) Provide access panels, fire rating/firestopping, electrical work,line voltage to controllers, provide all temporary power for all trades, power to all MEP equipment, lighting fixture (new, remove and replace)

all patching and painting related to the installation of this scope, all city filings and permits for any reason and as required.

1.3 Related Sections include, but are not limited to, the following:

A. Division 01 Section "Work Restrictions" for use of the Project site and for requirements for continued Owner occupancy of premises.

B. Division 01 Section "Project Management and Coordination" for general coordination requirements.

C. Division 01 Section "Project Forms" for documents required for Testing and Coordination.

D. Division 01 Section "Temporary Facilities and Controls" for specific requirements for temporary facilities and controls

1.4 DEFINITIONS

A. Building Site: The Building Site shall be defined in the Construction Documents, as the building footprint, and all related construction within a five-foot (5'0") distance of the building's exterior face, unless noted or assigned otherwise. Coordinate with specific exceptions to the 5'0" limit indicated within each Scope of Work outline.

B. Permanent Enclosure: As determined by the Architect: permanent or temporary roofing is complete, insulated, and weathertight; and all openings are closed with permanent construction or substantial temporary closures. All cost associated with failure to maintain described installations that result in any damage or contamination to the Owner's property, shall be borne by the Prime Contract responsible for the installation.

1.5 MANAGEMENT AND COORDINATION

A. The Owner shall provide a Construction Manager.

1. The Construction Manager shall provide a full time construction site representative recognized as the Construction Manager.

1.6 CONSTRUCTION MANAGER

A. The construction manager shall provide on-site administration of the Contracts for Construction in cooperation with the Architect as set in AIA Document A232 ™ – 2019,

General Conditions of the Contract for Construction, Construction Manager as Adviser Edition, as modified.

B. The Construction Manager shall provide administrative, management and related services to coordinate scheduled activities and responsibilities of the Multiple Prime Contractors with each other and with those of the Construction Manager, the Owner and the Architect. The Construction Manager shall coordinate the activities of the Multiple Prime Contractors in accordance with the latest approved Project Schedule and the Contract Documents.

C. Utilizing the construction schedules provided by the Prime Contractors, the Construction Manager shall update the Project schedule, incorporating the activities of the Owner, Architect, and Multiple Prime Contractors on the Projects, including activity sequences and durations, allocation of labor and materials, processing of Shop Drawings, Product Data and Samples, and delivery and procurement of products, including those that must be ordered will in advance of construction. The Project schedule shall include the Owner's occupancy requirements showing portions of the Project having occupancy priority.

D. Utilizing information from the Prime Contractors, the Construction Manager shall schedule and coordinate the sequence of construction and assignment of space in areas where the Prime Contractors are performing Work, in accordance with the Contract Documents and the latest approved Project Schedule.

1.7 GENERAL REQUIREMENTS OF PRIME CONTRACTS

A. Prime Contracts: The context used in this Section are separate Prime Contracts that represent significant elements of work that is to be performed concurrently and in close coordination with the work of other Prime Contracts for the benefits of the Owner. Each Prime Contract is recognized to be a major part of the Work.

B. Assignment of Work: Should a conflict be indicated, Section 011200 shall take precedence over all scope of work assignments that may be indicated elsewhere within the Construction Documents.

C. Seismic Requirements: Prime Contracts are to be aware that the building(s) is located within a Seismic Zone indicated in the documents and shall provide installations in compliance with all related code requirements.

D. Layout and Installation: Each Prime Contractor shall schedule, layout and install their Work in such manner as not to delay or interfere with, but to compliment the execution of the work of other Prime Contracts, utility companies and Owner's operations.

E. Extent of Contract: The Contract Documents, drawings and specifications each contain more specific descriptions of the Work facilitating which Prime Contract includes specific elements of the Project.

1. Work provided by each Prime Contract shall mean complete and operable systems and assemblies, including products, components, accessories and installations required by the Construction Documents or indicated otherwise.
2. Prime Contractors shall exercise good judgment and perform all work according to related industry standards.
3. The Owner is exempt from payment of Federal, State and local taxes, including sales and compensating use taxes on all materials and supplies incorporated in completing the Work; these taxes are not to be included in the Bid. This exemption does not apply to tools, machinery, equipment or other property leased by, or to, the Contractor or sub-contractor, or to supplies and materials, which even though consumed are not incorporated into the completed work. Prime Contractors, and
   their sub-contractors, shall be responsible for paying any and all applicable taxes on said tools, machinery, equipment or property, and upon all said unincorporated supplies and materials, whether purchased or leased.
4. Prime Contracts shall understand that time is of the essence, and will adequately staff the Project by employing the appropriate trade's people to perform the Work; these people shall be experienced in their respective trades. A shortage of labor in the industry shall not be accepted as an excuse for not properly staffing the Project; all efforts shall be made to meet or exceed the schedule, including additional staff and/or labor hours necessary. All cost associated with this item shall be included within the Bid.
5. Local custom and trade union jurisdictional settlements will not control the scope of the Work of each Prime Contract.
   a. When a potential jurisdictional dispute or similar interruption of Work is first identified, or threatened, the affected Prime Contracts shall promptly negotiate a reasonable settlement to avoid or minimize the pending interruption and delays.
   b. Contractor's trade-related issues shall not be grounds for modification or extension of scheduled completion date(s).
6. The Work of all Prime Contracts requires close coordination with other Prime Contracts and construction personnel. Maintain flexibility and cooperation through the Project. "Out of Sequence" and "Delay" claims will only be considered when requirements of Division 01 "Administrative Requirements" have been adhered to. Delay claims must be in writing and forwarded to the Architect, per the requirements of the General Conditions of the Contract. Claims not submitted per these requirements will be rejected and/or denied.

7. The intention of the Work is to follow a logical sequence, however, a Prime Contractor may be required by the Architect or Construction Manager, to temporarily install, omit or leave out a section(s) of Work, out of sequence. All such out of sequence work, and come back time, at these areas shall be performed at no additional cost to the Owner.

F. Substitutions: Per Division 01 Section "Substitution Procedures", each Prime Contractor shall cooperate with the other Prime Contractors involved, to coordinate approved substitutions with remainder of the Work. Contractors shall submit all "Substitutions" at least ten (10) days prior to the date for receipt of Bids as specified in the Instructions to Bidders 002113 Section 3.3 Equivalents or bid will be considered per "basis of design".

G. Construction Schedules: Refer to Divisions 01 Section "Construction Progress Documentation", "Preliminary Schedule" and "Project Management and Coordination" for requirements related to meetings and schedules.

H. Construction Sequencing and Phasing: Prime Contractor shall understand that Sequencing and/or Phasing Plans are contingent upon the work areas being complete/occupied, prior to the next area of Work beginning. Should an area of construction not be complete per the Project Preliminary Schedule, the Project Master Construction Schedule/Sequencing Plans will be adjusted accordingly. The Owner will not be responsible for delay claims due to adjustments being no fault of their own.

1. Prime Contracts may be required to re-sequence the phasing of the project as a result of changes to the schedule. Prime Contracts shall provide these adjustments at no additional cost to the Owner.

I. Testing and Inspections by Owner: The Owner shall employ an independent qualified testing and inspection agency for monitoring on-site soils analysis (excluding top soil analysis), soils compaction, cast-in-place concrete, asbestos and lead abatement monitoring and Special Inspections indicated in the Construction Documents (refer to Division 01 "Quality Requirements" and/or Statement of Special Inspections" for additional specific information)

1. Prime Contractor shall give one week notice as to commencement for these requirements. Once underway, Prime Contractor shall coordinate with the Construction Manager and give 48 hours' notice as to test(s) required, by Owner's Agency, and further verify the need 24 hours in advance. Full cooperation and coordination is expected of all Contractors and their personnel with the Owner's Testing Agency in fulfilling test requirements; provide all data and materials requested for required reports.
2. Other than with regard to compliance with state and federal laws, the testing agency holds no execution authority other than to provide test results. Should testing

indicate a discrepancy or non-compliance during execution of the Work, the Testing and Inspection Agent shall promptly notify the Construction Manager and Project Superintendent of such; however, the Prime Contract shall bear full responsibility for making any decision with regard to proceeding with, or stopping, the Work.

3. This assignment of Testing and Inspection responsibilities shall take precedence over any respective responsibilities that are indicated otherwise in the Construction Documents.

J. Testing by Others: All testing requirements not listed in preceding "Testing & Inspections by Owner" or otherwise identified in Division 01 "Quality Requirements" and/or "Statement of Special Inspections" shall be the responsibility of the Prime Contract providing the respective Work as indicated in the Construction Documents.

1. The respective Prime Contract shall have performed testing requirements indicated in individual Specification Sections which may inadvertently indicate "Owner to provide," which are not identified in preceding paragraph "Testing & Inspections by Owner".
2. Prime Contractor shall submit their Testing Agency qualifications to the Architect for approval prior to any test being performed. Construction Manager shall be given 48 hours' notice of any test/inspections to be performed by Prime Contractor's Testing Agency. 24- hour notification shall be given to the Construction Manager for test/inspections requiring his/her presence; 72-hour notification shall be given to the Architect for test/inspections requiring his/her presence.
3. Determinations required of the Architect shall be anticipated by the Prime Contractor to allow ample time for inspection, investigation and reporting.
4. Prime Contractor shall secure a UFPO clearance prior to start of any UG installation work; coordinate with and advise Construction Manager.

K. Existing Conditions: Each Prime Contract shall verify existing conditions in the field prior to work commencing in that area and immediately report conditions to the Architect that are not represented correctly by the Construction Documents.

1. Each Prime Contract is responsible for familiarizing himself with Project Site Logistics and provide a "site logistics plan locating storage area, scaffolds, rubbish areas, stock piles and egress related to all work, included phased construction within 30 days of award.
2. Each Prime Contract has been given ample opportunity to review Existing Conditions related to the Project. Existing Conditions not noted in the Construction Documents that could be easily recognized during pre-bid review that interfere with the respective Prime Contract's work, shall be the responsibility of the respective Prime

Contract. This includes all costs associated with removal, patching, relocation or re-fabrication of installations.

L. Hazardous Materials: Each Prime Contract shall familiarize themselves with the Hazardous Materials Sections/Drawings of the Construction Documents and follow DOL/OSHA/EPA/SED regulations while performing their respective Work in these areas. Discovery of non-identified or concealed hazardous materials shall be reported to the Construction Manager immediately and followed up with written documentation of the event.

M. Protection of Installations: Each Prime Contract is responsible for protecting their installations at all times. All costs incurred to repair, replace or clean insufficiently protected materials/installations shall be the responsibility of the installing Prime Contract.

1. Architect shall be notified, in writing, immediately upon material/installation being damaged; notification shall indicate responsible party.
2. Owner will not be liable for damaged materials and/or installations by “others”, when “others” cannot be identified.
3. Repair damaged work, clean exposed surfaces or replace construction installations that cannot be repaired.
4. Each Prime Contract shall be responsible for removing all labels not required to remain from their installations.
5. Installations shall be wiped clean and proper protection then installed.
6. Each Prime Contract is responsible to protect another primes work in the event that prime has to work over or on top of that other primes work being complete. The prime working over the completed work takes full responsibility of that other primes completed work both in condition and operation.

N. Daily Cleaning: All Prime Contracts are responsible for any and all debris caused by their Work, including the Work of their subcontractors. A daily clean up and disposal is required by each Prime Contract for the periods which that Prime Contract, or its subcontractors, are performing Work on site.

1. Assign at least one person for a daily clean and sweep of the work area(s). Prime Contractor shall allot sufficient manpower and time for this to be completed by the end of each shift. Submit name of this person(s) to Construction Manager.
    a. Construction Manager shall have the authority to give direction to person(s) on the Project Site identified by the Prime Contract as designated for cleanup tasks. This shall include the safety review/securing of the site-work zone after each shift.
    b. This person has check that no construction debris was dumped in any district dumpers during this end of shift site review, if found the contractor must remove

immediately the next morning to avoid back charges costs of $1500 per day not removed.

2. Any Prime Contract not providing personnel for Daily Cleaning will be Back Charged for labor provided by the Owner to complete this task.
3. Contractor working solely in an area shall be responsible for clean/sweep of that area.
4. Daily cleaning will not mean any one Prime Contract is responsible for assisting another Prime Contract with removing major quantities of debris created by a particular Prime Contract's Work.
5. Daily cleaning will be mandated to remove from the building any debris created by day-to-day activities. All Prime shall assist in sweeping shared work areas and shared corridors while working on site. Each Prime shall assist in mopping of shared corridors while working on site or as required by the Owner.
6. All prime contractors and subcontractors are required to provide sweeping compound for daily cleaning in their respective exterior and interior work areas. Each Prime Contract shall provide a sufficient number of brooms or other necessary tools, for use by their personnel to adequately fulfill their obligations.
7. All prime contractors shall provide and maintain garbage cans/refuse containers with liners for each construction area of their respective contracts as directed by the Construction Manager and shall be responsible for disposing of these materials to a dumpster.
8. All prime contractors provide the necessary equipment/containers (lull/skip-box) to move daily clean/sweep debris from the building to a dumpster on a daily basis, for each construction area of their respective contracts. Skip-box shall be emptied to a dumpster by 9:00 a.m. the following day.
9. Cleaning shall be deemed a Safety & Health issue, with Prime Contracts being held accountable for fulfilling their contractual obligations.

O. Final Cleaning: At Substantial Completion of each area of construction, each Prime Contract shall wipe/vacuum clean all of their respective installations; All interior contracts performing work inside the buildings shall mop clean all building surrounding areas and finish flooring and remove all marks/blemishes to the finish, for each construction area of their respective contracts. Each area of construction shall be wiped clean of all construction dust and debris prior to turnover to the Owner.

P. Cutting and Patching: All Primes are responsible for cutting and patching required to complete their Work. All repair of existing finish Work (including finish floors) shall be performed by contract requiring work, meeting or exceeding minimum contract requirements for that particular section, specification, or type of work. All concealed openings (piping, ductwork, conduit, etc.) must be repaired to comply with specified wall or deck conditions as well as required fire and sound ratings. All corridor penetrations

require fire safing. If contractor elects to install their new work in an existing unrated wall or floor opening, whereas the wall/floor is a fire rated condition, that contractor is responsible to fire rate that opening to match the wall/floor fire rating with new and all other existing wire, piping, ducts etc. Other areas are noted in drawings and specifications.

1.8 Project Schedule. The nature of this project is to complete all the work listed as Elevator Addition in the schedule by **the Project Closeout Dates specific to each Prime Contract as listed below**. Each Prime Contractor shall include in their bid proper allowances for foul weather.

A. Bids Received: 8/26/2022

B. Award of Contract: 9/6/2022

C. Notice to Proceed: 9/7/2022

D. Submittals: The following items are to be submitted within 60 business days after Notice to Proceed:

1. Submittal List and Submission Schedule– **10 days after NTP**
2. Field Investigations
3. Shop Drawings
4. Long Lead Items– **15 days after NTP**
5. Schedule of Values and Key Submittal List – **10 days after NTP**

D. Mobilization: 09/14/2022

G. Substantial Completion and Project Closeout:

1. **Electrical Contract 01**
    a. Substantial Completion: May 19, 2023.
    b. Project Closeout: June 19, 2023

1.9 TEMPORARY FACILITIES AND CONTROLS OF PRIME CONTRACTS

A. Conditions of Use: Keep temporary services or conditions clean and neat in appearance. Operate in a safe and efficient manner. Relocate temporary facilities as required as work progresses; do not overload facilities or permit them to interfere with progress. Take

necessary fire prevention measures; do not allow hazardous, dangerous, or unsanitary conditions to develop or persist on the Project site.

1. Installation, operation, maintenance, and removal of each temporary service or condition are considered part of the respective Prime Contract's own construction activity, as are costs and use charges associated with each facility.
2. Locate service or condition where they will serve the Project adequately and with minimum interference of the Work, coordinate with the Construction Manager and the other Prime Contracts prior to installation.

B. Temporary Use of Permanent Facilities: Prime Contract, as installer of each permanent service or condition, shall assume responsibility for its operation, maintenance and protection during use as a construction facility prior to the Owner's acceptance, regardless of previously assigned temporary facilities and controls responsibility.

C. Owner's Facilities: Contractors are not allowed to use the Owner's facilities (toilets, telephones, food service, etc.) for their own benefit or convenience. Prime Contract Superintendents shall enforce this policy with their respective work forces.

1. Construction personnel parking will be restricted to area as directed and agreed to by the Owner, and to facilitate the completion of the work. Owner reserves the right to remove from their property, unauthorized vehicles occupying unauthorized areas, at respective vehicle owner's expense.

D. Storage on the Project Site: Each Prime Contract shall provide sufficient secure weathertight storage facilities for their materials and equipment. These storage containers are required to be located on the "site logistics plan." The Owner's facilities and the Project's building areas shall <u>not</u> be used for storage unless agreed upon, in writing, with the Owner via the Construction Manager.

1. Until permanently incorporated into the Work, all materials on the Project site are considered to be the Prime Contract's responsibility for security and protection.
2. Prime contractor is required to check on their onsite stored material periodically to ensure that all material continues to be located in the stored location and that it remains protected from all damage, theft, and endangerment to others and ready to be used on notice for coordination with other contractors. Failure to arrange for materials to be on site to complete coordinated work with other Prime Contractors will result in back charges for delays resulting therefrom.
3. Temporary long-term storage facilities are not available to Prime Contracts by the Owner.

4. Prime Contractors and their subcontractors, shall coordinate deliveries with the Construction Manager to ensure that disruptions and Owner inconvenience are avoided.

E. Tools and Equipment: Each Prime Contractor shall provide all tools and equipment necessary for its own activities; this includes secure lock-up and storage for all items on the Project Site.

1. Provide all construction aids and miscellaneous services and facilities necessary exclusively for its own construction activities; this shall include any additional supplementary power, ventilation, lighting requirements and weather protection.

F. Project Site Communication: Each Prime Contractor shall provide their Project a full time on site at all times Superintendent with a mobile phone for the duration of the Project, as indicated in their Scope of Work. Construction Manager shall be furnished with contact numbers associated with each phone.

G. Safety: Prime Contracts, not the Architect or Construction Manager, are responsible for Project Site Safety, as related to their operations (refer to Section 013150 "Special Procedures" for further requirements).

1. Each Prime Contract shall correct safety hazards and violations immediately. If safety issues are not immediately rectified, the Owner shall secure outside sources to correct the deficiency and back charge the responsible Prime Contract.
2. Maintain unobstructed access/egress to fire extinguishers, fire hydrants, stairways, corridors, ladders and other safety routes/devices.

H. Fire Extinguishers: All Prime Contracts provide and maintain "general use" fire extinguishers for each construction area of their respective contracts; comply with applicable codes for quantities required. Use of the Owner's fire extinguishers to meet this requirement is not permitted. Comply with NFPA for recommended classes for exposure; extinguishers shall be inspected and appropriately tagged prior to being brought on site. Provide stands, painted bright orange, sturdy enough to carry the extinguisher, and built as not to create a tipping hazard.
1. Each Prime Contract shall supplement this requirement by providing additional fire extinguishers specifically related to their work activity (e.g., welding, soldering, abrasive cutting, etc.).
2. Each Prime Contract shall provide and maintain proper fire extinguishers at/in their respective on site office and storage facilities.
3. Store combustible materials in approved containers in fire-safe locations.

I. Welding: Any Prime Contract performing welding, cutting or other activities with open flames or producing sparks shall at a minimum:

1. Coordinate interruption/shutdown of detection system(s) to avoid creating false alarms.
2. Protect the area and surrounding areas from fire and damage.
3. Maintain fire extinguishers, compatible with activity, at the location of the activity.
4. Provide a continuous Fire Watch during the activity and one-half hour beyond the completion of the activity.
5. Provide all necessary fans and ventilation required for the activity.
6. Any welding, burning and or use of flame the contractor is required to provide all required "hot work permit" to use such equipment prior to start of work. Its mandatory that no "hot work" shall start without these permits issued to the CM and Owner. Failure to this requirement will result to the removal of the project super of that company from all district projects.

J. Temporary Power: Each Prime Contractor shall provide for their own temporary power needs for any scheduled electrical utility shut downs.

K. Each Prime Contractor shall provide for their own temporary generators, power cords and temporary lighting as needed during these periods to continue to perform their work and maintain adherence to the Preliminary Schedule and approved Project Master Schedules. All temporary power equipment shall comply with all applicable codes and regulations.

N. Waste Disposal Facilities:

1. General debris/refuse/construction waste containers (dumpsters) shall be provided by each prime contractor and secured as specified herein this contract.
2. It shall be the responsibility/requirement of each Prime Contract to bring their waste to the dumpsters, including but not limited to all equipment, demolition debris, discarded materials with further identification including the following; construction and demolition debris refers to discarded materials generally considered non-hazardous in nature, including but not limited to steel, glass, brick, concrete, asphalt material, pipe, gypsum wallboard, and lumber, from the construction or destruction of a structure as part of a construction or demolition project or from the renovation of a structure, including such debris from construction of structures at a site remote from the construction or demolition project site.
3. It shall be the responsibility and requirement of each Prime Contract to recycle metals generated by its Work, and the Work of its subcontracts.
4. Joint-effort recycling by all Prime Contracts is encouraged.

O. Temporary Sanitary Facilities: Provide temporary self-contained toilets units for duration of the project.

1. Temporary Sanitary Facilities:

a. Each prime contractor is required to provide their own Temporary Sanitary Facilities and secured behind fencing and/or locked after work hours and weekends.

2. Comply with regulations and health codes for type, number, location, operation, and maintenance of fixtures and facilities.
3. Provide separate facilities (minimum of one ea.) for male and female personnel in proportion required by OSHA.
4. Shield toilets to ensure privacy.
5. Coordinate mobilization and demobilization of units with Construction Manager.
6. Toilets shall be cleaned at least once per week, with additional facilities or cleanings provided if requested by Construction Manager.
7. Provide and maintain adequate supply of toilet tissue and hand sanitizer for each facility.

1.10 WORK HOURS & SEQUENCE

A. EC-01 Contract is permitted to work during the school day on non-disruptive work. Sawcutting, jackhammering, power shutdowns, or work that may affect emergency egress must be performed second shift or weekends. The contractor is responsible to factor this into their bids.

B. Summer work starts June 28th through August 23rd for 2022. The Summer working hours are from 7:00am to 9:30pm. There is no additional cost to the owner for working the hours of 3:30pm through 9:30pm or on weekends and holidays during the Summer.

C. Contractors are required to start working on site within 30 days of execution of contract, to the extent permitted by contract. Contractors are required to coordinate and perform work simultaneously with other Contractors. Contractors are required to complete their contract work by the designated Substantial Completion and Final Completion end dates as indicated on the Invitation to Bid.

D. Mandatory clean up periods - From August 24th, 2022 to August 31st , 2022 and August 30th , 2022 to September 6th, 2022, contractors shall clean up all interior and exterior areas.

E. Contractors are required per contract to fully staff the project during the work shifts stated above with the required manpower to complete their work within the allowed scheduled time frame. Contractors are required to provide a 72-hour advanced request to the Owner via the Construction Manager for any Saturday and Sunday work. If a project schedule delay has been caused by the fault of the contractor, the contractor is required to provide 3rd shift work from 9pm to 6am to make up the project schedule. All costs for CM, Architect and district personal related to this 3rd shift request will be

charged to the contractor at a combined rate for all at $3,000 per 8hr shift.

F. The shifts noted above are not considered overtime or premium time hours.

G. Contract summaries will provide start and end dates for each contractor.

H. Additional requirements:

1. Multiple Crews: Each Prime Contract shall provide multiple crews, supervision, cranes, scaffold and other means necessary to perform the Work, and maintain the Project Master Schedules.
2. Interruption of any utility and/or power must be coordinated with the Owner, via the Construction Manager.
3. Any and all -3rd shift, overtime, weekend and/or holiday work required to meet the Project Master Schedules shall be incorporated in the respective Prime Contract's bid.
4. Should a Contractor's progress fall behind, as to schedule, Prime Contractor shall employ additional – 3rd shift and/or overtime and/or weekend workforce until situation is rectified, to the satisfaction of the Architect and Construction Manager, at no additional cost to the Owner, however subject to charges as stated in section 1.8 C for lack of maintaining schedule
5. Should a Prime Contract feel another Prime Contract is delaying them sufficient time to complete their installations, per the schedule, the Architect and Construction Manager shall be notified in writing immediately of the situation (refer to Conditions of the Contract for protocol). A Prime Contract creating such a delay, that causes a proven burden upon another Prime Contract to maintain schedule, shall bear all costs incurred by the delayed Prime Contract to maintain the schedule.
6. The Architect and Construction Manager shall not be overburdened as to overtime cost, to monitor the work, due to no cause of his or her own. Owner will compensate the Architect and Construction Manager for all additional cost related to the issue of a Prime Contractor's failing to execute the Contract by fully staffing per the work hours and days noted herein. The Owner reserves the right to back charge the responsible Prime Contract for these fees if incurred.
7. All Asbestos and/or Lead Abatement shall take place to meet the requirements of the Preliminary Schedule and Project Master Schedules and shall be coordinated with the other Prime Contractors prior to commencement.

I. The Work shall be conducted to provide the least possible interference to the activities of the Owner's personnel and the surrounding property owners (neighbors).

1. Prime Contracts are hereby notified that: All Prime Contractors and their subcontractors shall limit excessive noise during 2nd shift known as work extending to 10PM weekdays upon approval by owner and city work hour restrictions. These operations shall not create a disturbance to neighboring properties.

J. Construction access to the site shall be limited to personnel, equipment and deliveries by suppliers relative to the Work of Prime Contractors and their subcontractors. Prime Contracts shall keep the Construction Manager advised of persons accessing the site and shall seek assistance with coordinating parking and storage facility locations for all Prime Contracts.

1. Where applicable, Contractors shall provide Building Site perimeter barricades as described herein the project and all temporary exit doors/lockable gates on the Project, securing these doors, fencing and/or gates at the end of each work shift.

2. When a Prime Contract engages in overtime, weekend or 2nd shift work, during the summer months and or during the normal school year, the respective Prime Contract shall notify Construction Manager of such and be responsible for securing the Project Site at the end of that work shift and perform site walk around the outside of construction area/work zone ensuring all debris is pickup up and there are no construction related hazards of any kind present once the responsible person leaves the site for the evening or weekend. This includes that all materials and equipment are fenced in and keys are removed. All interior projects have the same requirement to ensure that outside the work zone is clean from dust-dirt and that no materials are left outside the work area at any time.

3. Required Access doors are to be furnished by EC-01 and installed by GC-01. EC-01 to coordinate location and quantity with GC as to not hinder GC work.

4. Any existing ceiling removal/replacement necessary to install new electrical work to be done by Electrical Contract #1 (e.g. – new conduits for feeders through existing ceilings, etc.).

5. Any wood blocking or panel backboards for electrical items by EC Contract #1.

6. EC specifically notified construction is phased which necessitates that utilities/services will need to be temporarily connected and maintained as necessary to ensure that all occupied areas have the required services. (power, fire alarm, PA, etc.

7. In areas where the GC is removing existing ceilings, the EC will remove any ceiling mounted electrical items, light fixtures, FA devices, Speakers, WAP, exit signs, cameras, etc. EC to reinstall after new ceilings are completed.

8. After GC ceiling removals for areas scheduled to receive new acoustic grid/tile, the EC will properly tie up any sagging wires at 6' o.c. to be supported above the ceiling grid in accordance with code. EC is to verify with GC before proceeding with any ceiling mounted fixture installations.

9. No work may be performed to live panels, or connections of live fixtures. The EC is to locate existing main panels and associated circuits and perform lockout tagout procedures to de energize the sub panel or fixture to which work is being performed.

1.11 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.12 DRAWINGS AND SPECIFICATIONS

A. Construction Documents indicate the sum total of the Contract that make up the complete work for the Project. Through this Section "Summary of Work", the intent of the Contractor's scope of Work and responsibility is generally described. Related requirements and conditions that are indicated in the Contract Documents include but are not limited to the following:

1. General Conditions and Requirements.
2. Referenced and applicable Codes, Regulations and Standards.
3. Scheduling and phasing requirements.
4. Existing conditions and restrictions on use of the site and facilities.

B. Drawings and Specifications are cooperative and supplementary. Portions of the Work, which can best be illustrated by Drawings, are not included in the Specifications and portions best described by Specifications are not depicted on Drawings.
1. All items necessary to complete the work shall be furnished whether written or illustrated.
2. All primes shall exercise good judgment and perform all work according to related industry standards.

PART 2 - SCOPE OF WORK

2.1 PRIME CONTRACTS

A. Scope of Work: Work includes but is not limited to, the following:
   1. Provide all work identified in the Contract Documents.
   2. Applicable Specification Sections, including, but not limited to: Specification Divisions 00 through 33 inclusive.
   3. All Specification Sections provided.
   4. All abatement drawings provided for reference.

PART 3 - EXECUTION

3.1 WORK SEQUENCE

A. The Work shall be conducted to provide the least possible interference to the activities of the Owner's personnel, per the Project Preliminary Schedule.

B. Work required during overtime, extended shifts or holidays due to failure of contractor to maintain schedule, will be monitored by Architect/Construction Site representative, and may be monitored by Owners' personnel. Additional costs for Architect/Construction Site Representative and/or Owner personnel will be borne by the Contractor.

C. Coordination of any utility and power interruption must be done with approval of the Architect/Construction Site Representative. Shutdowns must occur during non-occupied timeframes only.

D. Construction access to the site shall be limited to those designated for personnel, equipment and deliveries by the Owner. All contractor staging, parking and storage shall be coordinated with the Construction Site Representative and subject to change.

E. Payments: Each bid that covers more than one school (i.e. one SED project) shall provide completed AIA G732 & G703 by building (for each SED project).

F. No work shall be installed without approved shop drawings. Any work in place without approved shop drawings will be rejected and removed by that contractor at their expense and backed charge all other costs related to.

G. Any work deemed by CM, Architect and District not properly installed by a contractor per the contract drawings and specifications shall be removed immediately and corrected, with all associated costs to be borne solely by that contractor.

H. All prime contractors shall coordinate their contract work with other primes to meet the project schedule and for a complete operational system or area or work.

I. All contractors are to provide within 3 weeks of award a "base line" construction schedule for their work from commencement to completion including all phasing. This schedule is to be updated monthly to show percentage progress of each item listed. This schedule shall be revised to provide a recovery schedule in the event of a delay for any reason. The recovery schedule shall include the "base line" item and the recovery to show how the delay is affecting the overall project schedule. This schedule is to be provided in MS Project or Primavera. Excel schedules are not accepted.

J. Prime contractor "base line" schedules are to be reviewed by each prime contractor and coordinated where work is related and that each prime's work shall be included in each "base line" contractor's schedule as necessary for coordination.

K. All contractors are to provide 2-week look ahead schedules showing work related to the base line and shall be coordinated with other prime 2-week look ahead schedules. These schedules will be Excel format. Format will be provided by the CM.

L. Contractors to provide a full-time supervisor on site 100% of the time. This is not a working foreman. Supervisors are not working with tools they are supervising their workers and coordinating with other contractors and district/ CM. Failure to provide will be default of your contract and subject costs related to and termination.

M. All prime contractors are the provide a project manpower structure showing names and telephone numbers of each responsible person on the project. This shall be updated as needed if personal changes are made.

N. All site equipment and dumpsters are to be behind temporary chain link fence when stored on site and or within the construction work zone where temporary chain link fence has been providing and installed by the prime. Each prime contractor is responsible to provide and install temporary chain link fence around their own stored equipment and dumpsters on site.

O. No equipment, panels or any services shall be turned off for any reason without written request and approval by the district. Project form shall be used for all shutdowns and required a 3-day notice. Other shutdowns may require more time.

3.2 **CONTRACT ELECTRICAL WORK (EC-01)** – ELECTRICAL PRIME CONTRACT AT NANUET HIGH SCHOOL – ELEVATOR ADDITIOAN INCLIDING LIGHTING, POWER, AND DATA WORK.

C. Project Site Superintendent: EC shall provide one (1) full time Project Site Superintendent while any work related to this Contract is being performed on site. Superintendent may be a working Foreman as long as the daily requirements of this Contract are maintained, as they relate to the Construction Documents and the Project Schedule. Construction

Manager reserves the right, in their opinion, to revoke this privilege if these requirements are not maintained. Superintendent shall work closely with the Construction Manager, and the other Prime Contract Superintendent(s), in a manner that best promotes the Master Construction Schedule and the objectives of the Project.

1. Superintendent shall be on site while Prime Contractor's own forces, and/or their sub-contractors' forces, are on site; also, while other Prime Contracts are installing work, or require coordination of work, related to this Prime Contract, and/or as requested by the Construction Manager.
2. Superintendent shall be the same individual throughout the Project.
3. Refer to Section 01 31 00 "Project Management and Coordination" for further requirements.

D. Project Foreman: EC shall provide at least one (1) full time Project Foreman during each shift of work for each school; Foreman shall be able to make binding decisions, as they relate to the daily activities of their crew as related to achieving the goals of the Project.

E. Site Communications: EC shall provide Project Superintendent with a mobile phone, all costs and service charges paid for by EC; provide Construction Manager with contact number(s).

F. Project Site Field Office: Provide site office facilities for this Contract's Project Superintendent. Site Office shall be equipped with telephone w/answering machine, fax, and e-mail. Contact information shall be provided to the Construction Manager.
   1. The Owner reserves the right to seek reimbursement for temporary facilities not provided by this Prime Contract.

G. Scope of Work: In addition to Divisions 26, 27 and 28, Work of the EC includes but is not limited to, the following:
   1. Coordination with other Prime Contracts, Owner and Construction Manager as required to adhere to and maintain approved Project Master Schedules. Prior to first payment, this includes submitting the Contractor's Construction Schedule to Construction Manager of the Project Master Schedule.
   2. Electrical scope is identified on the Contract Documents for removal, installation and replacement of all electrical interior and exterior components shown on the Contract Documents for all schools. Including but not limited to coordination and installation of conduits and panels. Provide all removals of existing Electrical Devices, Fixtures & Systems indicated, or required, for Work of this Prime Contract.
      a. Coordinate all removals with Hazardous Materials documents.

3. **This contract includes furnishing access doors for walls and ceiling as required, which may include fire rated conditions, and coordinate with General Contractor (GC) for installation. EC shall provide Access Door for GC to install.**
4. Provide all reinstallation of existing Electrical Devices, Fixtures & Systems, replacement or new Electrical Devices, Fixtures & Systems associated the classrooms.
5. EC shall conform to phasing and sequencing of renovations. See Preliminary Schedule for all work as shown on the phasing plans.
6. The Electrical Contractor shall review the Contract Documents in its entirety for complete electrical scope of work in this contract.
    a. EC shall install work in accordance with the National Electrical Code requirements. No additional compensation will be made for extra offsets in conduit or retro-fit work due to improper component location, or lack of Prime Contractor's coordination.
7. Prime Contract shall understand that renovation work may require work to proceed while existing systems are required to be maintained; all cost associated with this sequence shall be anticipated, and incorporated into the Bid.
8. Prime Contractor shall read and familiarized themselves with the Lead Sections of the Construction Documents. Lead-based paint has been identified to exist on specific areas/surfaces of the work located within the building(s), and when encountered the Prime Contractor shall follow all applicable regulations while working with this material.
9. Prime Contractor shall read and familiarized themselves with the Asbestos Sections of the Construction Documents. Asbestos Containing Material is scheduled to be abated throughout specific areas of the building(s). Should ACM be encountered (after Abatement is completed), that may interfere with an installation; Prime Contractor shall cease work, and notify Construction Manager immediately.
    a. Penetrations not coordinated with GC, prior to abatement of these spaces, shall become the responsibility of the respective Prime Contract requiring the penetration.
10. EC shall provide all Work associated with creating structural openings or penetrations requiring lintels whether for their own work (i.e. conduit penetrations). This applies to all openings/penetrations greater than 5-inches through masonry or concrete walls.
    a. Non-structural openings/penetrations, including those for convenience, shall be self-provided by the EC.
    b. This assignment applies to new and existing construction areas.
    c. Refer to Structural documents for lintel type/size requirements and Architectural drawings for wall types. Walls not specifically identified in the documents are to be assumed as masonry construction.
    d. All openings/penetrations are to be identified on Record Drawings by the Prime Contract requiring the opening.

11. Provide cut and patch work related to that of this Prime Contract, related to that of their Prime Contract, and at those areas specifically identified on the Construction Documents, regardless of trade creating the area to be patched.
    a. Each Prime Contract is responsible for all other respective Cutting & Patching required of their installations (refer to Section 017329 for further information).
12. Provide complete electrical requirements, materials and methods including, but not limited to:
    a. All Access panels required for EC-related work are provided by EC and installed by GC. EC is responsible to coordinate framing with GC for any and all locations.
    b. Trenching for all electrical conduits is by GC. EC to furnish and install all conduit and race tape per drawings.
    c. Service and distribution including bus-way, switchgear, panel boards, and disconnect switches.
    d. Provide grounding protection for all circuits and outlets and as required by applicable codes and authorities having jurisdiction. Properly ground building equipment provided by this project.
    e. Coordinate any electrical switchover as to least impact the Project Schedule. This scope is considered "critical path" and is required to be addressed submitted and shop drawing submitted within 2 weeks upon BoE approval.
    f. Provide all power, controls, and standby generator requirements for temporary power that might be required during the renovation upgrade for all other prime contractors working during the shutdown.
    g. Immediately after installation, provide and maintain temporary ID of all circuit breakers and at all shut offs/disconnects until permanent ID is in place.
    h. Exterior lighting and lighting control equipment; provide occupancy sensors and/or timing devices as indicated.
    i. Provide raceways, boxes, cabinets and sleeves through existing and new construction as part of the complete electrical installation.
    j. Provide wire, cable, conduit, boxes, and wiring devices as part of the complete electrical installation.
    k. Provide permanent electrical identification.
       Provide type written panel board schedules.
       Clearly label all panel boards, disconnects, relays, junction boxes, and other electrical devices and equipment.
13. Final connections of utilities are by EC unless noted or assigned otherwise.
14. Final connection of installations or equipment that are provided by others.
    a. Provide final connections to all scheduled equipment furnished by the Owner.
15. Provide Fire Alarm system as indicated in the Construction Documents.

a. EC shall provide Fire Alarm and/ or coordinate as indicated on drawings.

16. Coordinate with Owner and provide confirmation to Construction Manager of low voltage systems, including but not limited to telephone, building access, security, PA/intercom, data and CCTV systems, as indicated in the Construction Documents.
    a. EC shall confirm full operational status of existing low voltage systems following reinstallation of existing devices. Replace and commission all devices and components damaged by construction work.
    b. Provide all components, and their installations required for a complete system.
    c. Provide, terminate, test, and label all point-to-point field wiring.
    d. Provide all associated power circuits and requirements that support these systems, including but not limited to, final connections.
17. Provide sleeves required for piping penetrating walls, slabs and/or decks.
18. Provide through-penetration fire stop systems at all penetrations made by EC. Maintain listed ratings of indicated assemblies. Provide repair of existing through-penetration fire stopping damaged by work of this Prime Contract.
    a. Sleeves with fire stopping are to be installed in sequence with fire-rated construction. This Prime Contract shall be responsible for installing fire stopping material at intersection of sleeve and constructed materials.
19. Provide all testing and adjusting, instruction and guarantees for materials and equipment of this Prime Contract. Refer to Division 00 Section "Project Forms" for applicable documents.
    a. Substantial Completion: Clean all light fixtures and electrical equipment at the time of installation or at Substantial Completion, whichever is later, or as directed by Construction Manager.
20. Coordinate all the preceding requirements, accordingly, with all applicable Alternates indicated in Section 012300 "Alternates."
21. Submission of all required closeout documentation and final application for payment no later than -June 30 2023.
22. **EC-01 is required to work with the districts fire alarm vendor ADT to connect new systems to the existing FA. Contractors pricing shall include all integration into the buildings fire alarm controls. Upon contractor's request, a contact will be provided for coordination.**

H. Applicable Specification Sections: All specification Sections itemized below are to be provided complete by this Prime Contract, unless noted otherwise. In addition to these specifications, the contractor is required to review all specifications included in the overall contract that may contain related scope or detail for this specific contract.
    1. **Divisions 00 and 01 – Procurement and Contracting Requirements & General Requirements.**
    2. **Division 02 – Existing Conditions**
    3. **Division 09 – Finishes**

4. **Division 10 – Specialties**
5. **Division 14 – Special Construction (for integration of electrical components for elevator)**
6. **Division 26 – Electrical**
7. **Division 28 – Electronic Safety and Security**

I. Supplemental Temporary Facilities and Controls by the EC include, but are not limited to:

1. Waste Disposal Facilities: Provided by each contractor.
2. Temporary Interior Barricades: Provide, maintain and eventually remove all temporary barricades per OSHA Regulations, Industry Standards, or as indicated in the Construction Documents. These include, but are not limited to, the following areas:
    a. Roof openings/penetrations.
    b. To isolate Abatement areas.
    c. To isolate renovation areas.
    d. Floor openings/penetrations, including stairwells.
        1) Horizontal Openings: close openings in floors, roof decks, and horizontal surfaces with load bearing, wood and/or steel framed construction per applicable regulations.
3. Temporary Doors, Frames & Wall Assemblies: Provide, maintain and eventually remove all temporary installations where required per OSHA Regulations, Industry Standards, or as indicated in the Construction Documents. Provide fire rated assemblies as required. Provide exit (panic bar/crash bar) devices at locations of egress. Coordinate locations with Construction Exiting Plan, Sequencing/Phasing Plans, and the Construction Manager. Temporary doors shall be constructed using 1/2' plywood and 2x construction, equipped with hasps, locks, handle and latch mechanism, and spring or counter weight installed to allow door to close after opening. Permanent doors will <u>not</u> be used in temporary conditions.
4. Temporary Heat: The existing heating system and ventilation system in the building area are not to be used for temporary heat or ventilation in construction areas. The contractor for General Construction must provide temporary heat in construction in construction areas. Provide submittal for temporary heat strategy that states what equipment will be used and where fuel will be stored. Fuel source cannot be located in the building. Heaters with self-contained fuel sources are not allowed to be placed in the building.
5. Temporary Window Openings: Window openings shall be enclosed using 2x construction, 1/2' plywood, and reinforced polyethylene. Where window opening start at or near the floor, plywood shall be installed from finish floor to minimum of 42" AFF; reinforced poly may be installed from this point up. Should contractor choose to install plywood across the entire opening, sufficient area will be installed

with reinforced poly to allow emergency escape, if required, and to allow natural light into the work area.

a. Installation shall be insulated if temporary heat or cooling is being employed.

6. Temporary Exterior Wall Enclosure: Provide and maintain temporary enclosures for weather protection and security of the construction in progress, where needed, up until completion of permanent installation specified. Enclosures shall protect the building from exposure, foul weather, other construction operations, and similar activities. Provide temporary weather tight enclosure for building exterior.
   a. Where heating and cooling is needed and permanent enclosure is not complete, provide insulated temporary enclosures. Coordinate enclosure with venting and material drying or curing requirements to avoid dangerous conditions and effects.
   b. Install tarpaulins securely; install fire retardant materials only.
   c. Where temporary wood enclosures exceed 100 sq. ft. in area, use fire retardant treated materials for framing and sheathing.
   d. All cost incurred to repair and/or replace materials damaged, due to the failure of EC to provide and maintain weather tight enclosure shall be borne by this Prime Contract. This includes any contamination of materials that may lead to the introduction of mold and mildew.
   e. Immediately notify the Construction Manager, in writing, as to damage to temporary enclosures by "others"; identify responsible party in the submission. Owner shall not be liable for damages caused by "others" if Prime Contract cannot identify responsible party.
7. Temporary Sanitary Facilities: Provided by each contractor.
8. Existing Stair Usage: Use of Owner's existing stairs in unoccupied areas will be permitted, provided that at Substantial Completion, stairs are restored to conditions existing before initial use.
   a. Provide photo documentation of existing stair conditions prior to use by all Prime Contracts. Document during use, and at completion of the Renovation Project in order to document any and all damage to the Owner's property.
   b. Provide protective coverings, barriers, devices, signs, or other procedures to protect stairs and to maintain means of egress. If, despite such protection, stairs become damaged, restore damaged areas so no evidence remains of correction work.
9. Provide all shoring required for Work of this Prime Contract, including but not limited to;
   a. Cutting or altering of existing construction.
   b. Provide protection of all new and existing surfaces during the Work. Do not stand, walk, or work off of any unprotected finished surface above the floor.
10. Maintain temporary fencing and barricading to keep unauthorized persons away from hazardous areas for which this Prime Contract is responsible.

11. Traffic Controls: Provide flagman while any operations of this Prime Contract interfere with traffic flow on adjacent roadways.

END OF SECTION 01 12 01

SECTION 01 12 02 –CONTRACT SUMMARY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes a summary of each Prime Contract, including responsibilities for coordination and temporary facilities and controls. One set of Construction Documents is issued covering the Work of multiple Prime Contracts. Each Prime Contract is responsible to review all drawings and specifications for specific requirements indicated, and for a general understanding and knowledge of the work of other Prime Contracts. All Prime Contracts are responsible for all Work of their Contract no matter what drawing on which the Work appears. All Prime Contracts are responsible to coordinate their work related to the complete set of drawings and specifications, not limited to each prime contractor scope. **All Bidders should acknowledge that for each contract listed below, each contractor is their own General Contractor and subject to all General Contractor requirements.**

1. **Mechanical Contract:** The Mechanical Contractor shall be selected based on the bid procedure as described in the Bid Documents. Contract Bidders are responsible for (a) trade work coordination, (b) the scope contained in drawings listed below and (c) any and all additional scope specifically identified to be performed by the Mechanical Contractor in other Bid Packages in the Contract.

B.

1) Work related to drawings: (*In addition to these drawings, the contractor is required to review all specifications included in the overall contract that may contain related scope or detail for this specific contract.)*
   a) Nanuet Senior High School Elevator Addition

1.3 Related Sections include, but are not limited to, the following:

A. Division 01 Section “Work Restrictions” for use of the Project site and for requirements for continued Owner occupancy of premises.

B. Division 01 Section “Project Management and Coordination” for general coordination requirements.

C. Division 01 Section “Project Forms” for documents required for Testing and Coordination.

D. Division 01 Section "Temporary Facilities and Controls" for specific requirements for temporary facilities and controls

1.4 DEFINITIONS

1.5 MANAGEMENT AND COORDINATION

A. The Owner shall provide a Construction Manager.

1. The Construction Manager shall provide a full time construction site representative recognized as the Construction Manager.

1.6 CONSTRUCTION MANAGER

A. The construction manager shall provide on-site administration of the Contracts for Construction in cooperation with the Architect as set in AIA Document A232 ™ – 2009, General Conditions of the Contract for Construction, Construction Manager as Adviser Edition, as modified.

B. The Construction Manager shall provide administrative, management and related services to coordinate scheduled activities and responsibilities of the Multiple Prime Contractors with each other and with those of the Construction Manager, the Owner and the Architect. The Construction Manager shall coordinate the activities of the Multiple Prime Contractors in accordance with the latest approved Project Schedule and the Contract Documents.

C. Utilizing the construction schedules provided by the Multiple Prime Contractors, the Construction Manager shall update the Project schedule, incorporating the activities of the Owner, Architect, and Multiple Prime Contractors on the Projects, including activity sequences and durations, allocation of labor and materials, processing of Shop Drawings, Product Data and Samples, and delivery and procurement of products, including those that must be ordered will in advance of construction. The Project schedule shall include the Owner’s occupancy requirements showing portions of the Project having occupancy priority.

D. Utilizing information from the Multiple Prime Contractors, the Construction Manager shall schedule and coordinate the sequence of construction and assignment of space in areas where the Multiple Prime Contractors are performing Work, in accordance with the Contract Documents and the latest approved Project Schedule.

1.7 GENERAL REQUIREMENTS OF PRIME CONTRACTS

A. Prime Contracts: The context used in this Section are separate Prime Contracts that represent significant elements of work that is to be performed concurrently and in close coordination with the work of other Prime Contracts for the benefits of the Owner. Each Prime Contract is recognized to be a major part of the Work.

B. Assignment of Work: Should a conflict be indicated, Section 011200 shall take precedence over all scope of work assignments that may be indicated elsewhere within the Construction Documents.

C. Seismic Requirements: Prime Contracts are to be aware that the building(s) is located within a Seismic Zone indicated in the documents and shall provide installations in compliance with all related code requirements.

D. Layout and Installation: Each Prime Contractor shall schedule, layout and install their Work in such manner as not to delay or interfere with, but to compliment the execution of the work of other Prime Contracts, utility companies and Owner's operations.

E. Extent of Contract: The Contract Documents, drawings and specifications each contain more specific descriptions of the Work facilitating which Prime Contract includes specific elements of the Project.

1. Work provided by each Prime Contract shall mean complete and operable systems and assemblies, including products, components, accessories and installations required by the Construction Documents or indicated otherwise.
2. Prime Contractors shall exercise good judgment and perform all work according to related industry standards.
3. The Owner is exempt from payment of Federal, State and local taxes, including sales and compensating use taxes on all materials and supplies incorporated in completing the Work; these taxes are not to be included in the Bid. This exemption does not apply to tools, machinery, equipment or other property leased by, or to, the Contractor or sub-contractor, or to supplies and materials, which even though consumed are not incorporated into the completed work. Prime Contractors, and their sub-contractors, shall be responsible for paying any and all applicable taxes on said tools, machinery, equipment or property, and upon all said unincorporated supplies and materials, whether purchased or leased.
4. Prime Contracts shall understand that time is of the essence, and will adequately staff the Project by employing the appropriate trade's people to perform the Work; these people shall be experienced in their respective trades. A shortage of labor in

the industry shall not be accepted as an excuse for not properly staffing the Project; all efforts shall be made to meet or exceed the schedule, including additional staff and/or labor hours necessary. All cost associated with this item shall be included within the Bid.

5. Local custom and trade union jurisdictional settlements will not control the scope of the Work of each Prime Contract.
    a. When a potential jurisdictional dispute or similar interruption of Work is first identified, or threatened, the affected Prime Contracts shall promptly negotiate a reasonable settlement to avoid or minimize the pending interruption and delays.
    b. Contractor's trade-related issues shall not be grounds for modification or extension of scheduled completion date(s).
6. The Work of all Prime Contracts requires close coordination with other Prime Contracts and construction personnel. Maintain flexibility and cooperation through the Project. "Out of Sequence" and "Delay" claims will only be considered when requirements of Division 01 "Administrative Requirements" have been adhered to. Delay claims must be in writing and forwarded to the Architect, per the requirements of the General Conditions of the Contract. Claims not submitted per these requirements will be rejected and/or denied.
7. The intention of the Work is to follow a logical sequence, however, a Prime Contractor may be required by the Architect or Construction Manager, to temporarily install, omit or leave out a section(s) of Work, out of sequence. All such out of sequence work, and come back time, at these areas shall be performed at no additional cost to the Owner.

F. Substitutions: Per Division 01 Section "Substitution Procedures", each Prime Contractor shall cooperate with the other Prime Contractors involved, to coordinate approved substitutions with remainder of the Work. Contractors shall submit all "Substitutions" at least ten (10) days prior to the date for receipt of Bids as specified in the Instructions to Bidders 002113 Section 3.3 Equivalents or bid will be considered per "basis of design".

G. Construction Schedules: Refer to Divisions 01 Section "Construction Progress Documentation", "Milestone Phasing Schedule" and "Project Management and Coordination" for requirements related to meetings and schedules.

H. Construction Sequencing and Phasing: Prime Contractor shall understand that Sequencing and/or Phasing Plans are contingent upon the work areas being complete/occupied, prior to the next area of Work beginning. Should an area of construction not be complete per the Project Preliminary Schedule, the Project Master Construction Schedule/Sequencing Plans will be adjusted accordingly. The Owner will not be responsible for delay claims due to adjustments being no fault of their own.

1. Prime Contracts may be required to re-sequence the phasing of the project as a result of changes to the schedule. Prime Contracts shall provide these adjustments at no additional cost to the Owner.

I. Existing Conditions: Each Prime Contract shall verify existing conditions in the field prior to work commencing in that area and immediately report conditions to the Architect that are not represented correctly by the Construction Documents.

1. Each Prime Contract is responsible for familiarizing himself with Project Site Logistics and provide a "site logistics plan locating storage area, scaffolds, rubbish areas, stock piles and egress related to all work, included phased construction within 30 days of award.
2. Each Prime Contract has been given ample opportunity to review Existing Conditions related to the Project. Existing Conditions not noted in the Construction Documents that could be easily recognized during pre-bid review that interfere with the respective Prime Contract's work, shall be the responsibility of the respective Prime Contract. This includes all costs associated with removal, patching, relocation or re-fabrication of installations.

J. Hazardous Materials: Each Prime Contract shall familiarize themselves with the Hazardous Materials Sections/Drawings of the Construction Documents and follow DOL/OSHA/EPA/SED regulations while performing their respective Work in these areas. Discovery of non-identified or concealed hazardous materials shall be reported to the Construction Manager immediately and followed up with written documentation of the event.

K. Protection of Installations: Each Prime Contract is responsible for protecting their installations at all times. All costs incurred to repair, replace or clean insufficiently protected materials/installations shall be the responsibility of the installing Prime Contract.

1. Architect shall be notified, in writing, immediately upon material/installation being damaged; notification shall indicate responsible party.
2. Owner will not be liable for damaged materials and/or installations by "others", when "others" cannot be identified.
3. Repair damaged work, clean exposed surfaces or replace construction installations that cannot be repaired.
4. Each Prime Contract shall be responsible for removing all labels not required to remain from their installations.
5. Installations shall be wiped clean and proper protection then installed.
6. Each Prime Contract is responsible to protect another primes work in the event that prime has to work over or on top of that other primes work being complete. The

prime working over the completed work takes full responsibility of that other primes completed work both in condition and operation.

L. Daily Cleaning: All Prime Contracts are responsible for any and all debris caused by their Work, including the Work of their subcontractors. A daily clean up and disposal is required by each Prime Contract for the periods which that Prime Contract, or its sub-contractors, are performing Work on site.

1. Assign at least one person for a daily clean and sweep of the work area(s). Prime Contractor shall allot sufficient manpower and time for this to be completed by the end of each shift. Submit name of this person(s) to Construction Manager.
    a. Construction Manager shall have the authority to give direction to person(s) on the Project Site identified by the Prime Contract as designated for cleanup tasks. This shall include the safety review/securing of the site-work zone after each shift.
    b. This person has check that no construction debris was dumped in any district dumpers during this end of shift site review, if found the contractor must remove immediately the next morning to avoid back charges costs of $1500 per day not removed.
2. Any Prime Contract not providing personnel for Daily Cleaning will be Back Charged for labor provided by the Owner to complete this task.
3. Contractor working solely in an area shall be responsible for clean/sweep of that area.
4. Daily cleaning will not mean any one Prime Contract is responsible for assisting another Prime Contract with removing major quantities of debris created by a particular Prime Contract's Work.
5. Daily cleaning will be mandated to remove from the building any debris created by day-to-day activities. All Prime shall assist in sweeping shared work areas and shared corridors while working on site. Each Prime shall assist in mopping of shared corridors while working on site or as required by the Owner.
6. All prime contractors and subcontractors are required to provide sweeping compound for daily cleaning in their respective exterior and interior work areas. Each Prime Contract shall provide a sufficient number of brooms or other necessary tools, for use by their personnel to adequately fulfill their obligations.
7. All prime contractors shall provide and maintain garbage cans/refuse containers with liners for each construction area of their respective contracts as directed by the Construction Manager and shall be responsible for disposing of these materials to a dumpster.
8. All prime contractors provide the necessary equipment/containers (lull/skip-box) to move daily clean/sweep debris from the building to a dumpster on a daily basis, for each construction area of their respective contracts. Skip-box shall be emptied to a dumpster by 9:00 a.m. the following day.
9. Cleaning shall be deemed a Safety & Health issue, with Prime Contracts being held accountable for fulfilling their contractual obligations.

M. Final Cleaning: At Substantial Completion of each area of construction, each Prime Contract shall wipe/vacuum clean all of their respective installations; All interior contracts performing work inside the buildings shall mop clean all building surrounding areas and finish flooring and remove all marks/blemishes to the finish, for each construction area of their respective contracts. Each area of construction shall be wiped clean of all construction dust and debris prior to turnover to the Owner.

N. Cutting and Patching: All Primes are responsible for cutting and patching required to complete their Work. All repair of existing finish Work (including finish floors) shall be performed by contract requiring work, meeting or exceeding minimum contract requirements for that particular section, specification, or type of work. All concealed openings (piping, ductwork, conduit, etc.) must be repaired to comply with specified wall or deck conditions as well as required fire and sound ratings. All corridor penetrations require fire safing. If contractor elects to install their new work in an existing unrated wall or floor opening, whereas the wall/floor is a fire rated condition, that contractor is responsible to fire rate that opening to match the wall/floor fire rating with new and all other existing wire, piping, ducts etc. Other areas are noted in drawings and specifications.

1.8 Project Schedule. The nature of this project is to complete all the work listed as Phase 3 in the schedule by **the Project Closeout Dates specific to each Prime Contract as listed below**. Each Prime Contractor shall include in their bid proper allowances for foul weather.

A. Bids Received: 8/26/2022

B. Award of Contract: 9/6/2022

C. Notice to Proceed: 9/7/2022

D. Submittals: The following items are to be submitted within 60 business days after Notice to Proceed:
   1. Submittal List and Submission Schedule – **10 Days After NTP**
   2. Field Investigations
   3. Shop Drawings
   4. Long Lead Items – **15 days after NTP**
   5. Schedule of Values and Key Submittal List – **10 Days After NTP**

E. Mobilization: 09/14/2022

F. Substantial Completion and Project Closeout:

1. **Mechanical Contract 01**
    a. Substantial Completion: May 19, 2023.
    b. Project Closeout: June 19, 2023

1.9 TEMPORARY FACILITIES AND CONTROLS OF PRIME CONTRACTS

A. Conditions of Use: Keep temporary services or conditions clean and neat in appearance. Operate in a safe and efficient manner. Relocate temporary facilities as required as work progresses; do not overload facilities or permit them to interfere with progress. Take necessary fire prevention measures; do not allow hazardous, dangerous, or unsanitary conditions to develop or persist on the Project site.

    1. Installation, operation, maintenance, and removal of each temporary service or condition are considered part of the respective Prime Contract's own construction activity, as are costs and use charges associated with each facility.
    2. Locate service or condition where they will serve the Project adequately and with minimum interference of the Work, coordinate with the Construction Manager and the other Prime Contracts prior to installation.

B. Temporary Use of Permanent Facilities: Prime Contract, as installer of each permanent service or condition, shall assume responsibility for its operation, maintenance and protection during use as a construction facility prior to the Owner's acceptance, regardless of previously assigned temporary facilities and controls responsibility.

C. Owner's Facilities: Contractors are not allowed to use the Owner's facilities (toilets, telephones, food service, etc.) for their own benefit or convenience. Prime Contract Superintendents shall enforce this policy with their respective work forces.

    1. Construction personnel parking will be restricted to area as directed and agreed to by the Owner, and to facilitate the completion of the work. Owner reserves the right to remove from their property, unauthorized vehicles occupying unauthorized areas, at respective vehicle owner's expense.

D. Storage on the Project Site: Each Prime Contract shall provide sufficient secure weather-tight storage facilities for their materials and equipment. These storage containers are required to be located on the "site logistics plan." The Owner's facilities and the Project's building areas shall <u>not</u> be used for storage unless agreed upon, in writing, with the Owner via the Construction Manager.

    1. Until permanently incorporated into the Work, all materials on the Project site are considered to be the Prime Contract's responsibility for security and protection.
    2. Prime contractor is required to check on their onsite stored material periodically to ensure that all material continues to be located in the stored location and that it remains protected from all damage, theft, and endangerment to others and ready

to be used on notice for coordination with other contractors. Failure to arrange for materials to be on site to complete coordinated work with other Prime Contractors will result in back charges for delays resulting therefrom.

3. Temporary long-term storage facilities are not available to Prime Contracts by the Owner.
4. Prime Contractors and their subcontractors, shall coordinate deliveries with the Construction Manager to ensure that disruptions and Owner inconvenience are avoided.

E. Tools and Equipment: Each Prime Contractor shall provide all tools and equipment necessary for its own activities; this includes secure lock-up and storage for all items on the Project Site.

1. Provide all construction aids and miscellaneous services and facilities necessary exclusively for its own construction activities; this shall include any additional supplementary power, ventilation, lighting requirements and weather protection.

F. Project Site Communication: Each Prime Contractor shall provide their Project a full time on site at all times Superintendent with a mobile phone for the duration of the Project, as indicated in their Scope of Work. Construction Manager shall be furnished with contact numbers associated with each phone.

G. Safety: Prime Contracts, not the Architect or Construction Manager, are responsible for Project Site Safety, as related to their operations (refer to Section 013150 "Special Procedures" for further requirements).

1. Each Prime Contract shall correct safety hazards and violations immediately. If safety issues are not immediately rectified, the Owner shall secure outside sources to correct the deficiency and back charge the responsible Prime Contract.
2. Maintain unobstructed access/egress to fire extinguishers, fire hydrants, stairways, corridors, ladders and other safety routes/devices.

H. Fire Extinguishers: All Prime Contracts provide and maintain "general use" fire extinguishers for each construction area of their respective contracts; comply with applicable codes for quantities required. Use of the Owner's fire extinguishers to meet this requirement is not permitted. Comply with NFPA for recommended classes for exposure; extinguishers shall be inspected and appropriately tagged prior to being brought on site. Provide stands, painted bright orange, sturdy enough to carry the extinguisher, and built as not to create a tipping hazard.

1. Each Prime Contract shall supplement this requirement by providing additional fire extinguishers specifically related to their work activity (e.g., welding, soldering, abrasive cutting, etc.).
2. Each Prime Contract shall provide and maintain proper fire extinguishers at/in their respective on site office and storage facilities.
3. Store combustible materials in approved containers in fire-safe locations.

I. Welding: Any Prime Contract performing welding, cutting or other activities with open flames or producing sparks shall at a minimum:

1. Coordinate interruption/shutdown of detection system(s) to avoid creating false alarms.
2. All burning and or welding (all hot work) is to be done from 3:30pm to 10:00pm when the public is not in the building.
3. Protect the area and surrounding areas from fire and damage.
4. Maintain fire extinguishers, compatible with activity, at the location of the activity.
5. Provide a continuous Fire Watch during the activity and one-half hour beyond the completion of the activity.
6. Provide all necessary fans and ventilation required for the activity.
7. Any welding, burning and or use of flame the contractor is required to provide all required "hot work permit" to use such equipment prior to start of work. Its mandatory that no "hot work" shall start without these permits issued to the CM and Owner. Failure to this requirement will result to the removal of the project super of that company from all district projects.

J. Temporary Power: Each Prime Contractor shall provide for their own temporary power needs for any scheduled electrical utility shut downs. Each Prime Contractor shall provide for their own temporary generators, power cords and temporary lighting as needed during these periods to continue to perform their work and maintain adherence to the Preliminary Schedule and approved Project Master Schedules. All temporary power equipment shall comply with all applicable codes and regulations.
    1. In all other schools in this phase, known as High School Elevator Addition, have local electrical work, therefore each prime contractor and their sub-contractors are required to provide their own generator power for equipment and lighting to perform their work during these times with no additional cost to the owner.

K. Waste Disposal Facilities:

1. General debris/refuse/construction waste containers (dumpsters) shall be provided by each prime contractor and secured as specified herein this contract.
2. It shall be the responsibility/requirement of each Prime Contract to bring their waste to the dumpsters, including but not limited to all equipment, demolition debris, discarded materials with further identification including the following; construction and demolition debris refers to discarded materials generally considered non-hazardous in nature, including but not limited to steel, glass, brick, concrete, asphalt material, pipe, gypsum wallboard, and lumber, from the construction or destruction of a structure as part of a construction or demolition project or from the renovation of a structure, including such debris from construction of structures at a site remote from the construction or demolition project site.

3. It shall be the responsibility and requirement of each Prime Contract to recycle metals generated by its Work, and the Work of its subcontracts.
4. Joint-effort recycling by all Prime Contracts is encouraged.

L. Temporary Sanitary Facilities: Provide temporary self-contained toilets units for duration of the project.
   1. Temporary Sanitary Facilities:
      a. Each prime contractor is required to provide their own Temporary Sanitary Facilities and secured behind fencing and/or locked after work hours and weekends.
   2. Comply with regulations and health codes for type, number, location, operation, and maintenance of fixtures and facilities.
   3. Provide separate facilities (minimum of one ea.) for male and female personnel in proportion required by OSHA.
   4. Shield toilets to ensure privacy.
   5. Coordinate mobilization and demobilization of units with Construction Manager.
   6. Toilets shall be cleaned at least once per week, with additional facilities or cleanings provided if requested by Construction Manager.
   7. Provide and maintain adequate supply of toilet tissue and hand sanitizer for each facility.

1.10 WORK HOURS & SEQUENCE

A. During the school days, Work is to be performed in this contract during the hours of 3:30pm to 10:00pm on weekdays, and Saturdays and Sundays from 7:00am to 3:30pm. During School breaks, work is to be performed from 7:00am to 10:00pm. There is no additional cost to the owner for working the hours of 3:30pm through 10:00pm, or weekend work during the school year. **Any work done during these times MUST BE COMPLETED, CLEANED, AND TESTED AS NECESSARY FOR STUDENT OCCUPANCY BEFORE THE START OF THE NEXT SCHOOL DAY. Contractors are required to schedule work during school breaks, school days off, and school holidays**.

B. MC is to review the contract logistics plan for the required second shift/weekend work. This work is required to be performed at no additional cost to the owner and shall be priced in the contractor's base bid.

C. There are blackout dates to which contractors may not work due to testing. Consult with CM for these dates.

D. **All MEP-related abatement is by GC-01..**

E. Summer work starts June 28th through August 23rd for 2022. The Summer working hours are from 7:00am to 9:30pm. There is no additional cost to the owner for working the hours of 3:30pm through 9:30pm or on weekends and holidays during the Summer.

F. Contractors are required to start working on site within 30 days of execution of contract, to the extent permitted by contract. Contractors are required to coordinate and perform work simultaneously with other Contractors. Contractors are required to complete their contract work by the designated Substantial Completion and Final Completion end dates as indicated on the Invitation to Bid.

G. Mandatory clean up periods - From August 24th, 2022 to August 31st, 2022 and August 30th , 2022 to September 6th, 2022, contractors shall clean up all interior and exterior areas.

H. Contractors are required per contract to fully staff the project during the work shifts stated above with the required manpower to complete their work within the allowed scheduled time frame. Contractors are required to provide a 72-hour advanced request to the Owner via the Construction Manager for any Saturday and Sunday work. If a project schedule delay has been caused by the fault of the contractor, the contractor is required to provide 3rd shift work from 9pm to 6am to make up the project schedule. All costs for CM, Architect and district personal related to this 3rd shift request will be charged to the contractor at a combined rate for all at $3,000 per 8hr shift.

I. The shifts noted above are not considered overtime or premium time hours.

J. Contract summaries will provide start and end date for each contractor.

K. Additional requirements:

1. Multiple Crews: Each Prime Contract shall provide multiple crews, supervision, cranes, scaffold and other means necessary to perform the Work, and maintain the Project Master Schedules.
2. Interruption of any utility and/or power must be coordinated with the Owner, via the Construction Manager.
3. Any and all -3rd shift, overtime, weekend and/or holiday work required to meet the Project Master Schedules shall be incorporated in the respective Prime Contract's bid.
4. Should a Contractor's progress fall behind, as to schedule, Prime Contractor shall employ additional – 3rd shift and/or overtime and/or weekend workforce until situation is rectified, to the satisfaction of the Architect and Construction Manager, at no additional cost to the Owner, however subject to charges as stated in section 1.8 C for lack of maintaining schedule
5. Should a Prime Contract feel another Prime Contract is delaying them enough time to complete their installations, per the schedule, the Architect and Construction Manager shall be notified in writing immediately of the situation (refer to Conditions of the Contract for protocol). A Prime Contract creating such a delay, that causes a proven burden upon another Prime Contract to maintain schedule, shall bear all costs incurred by the delayed Prime Contract to maintain

the schedule.

6. The Architect and Construction Manager shall not be overburdened as to overtime cost, to monitor the work, due to no cause of his or her own. Owner will compensate the Architect and Construction Manager for all additional cost related to the issue of a Prime Contractor's failing to execute the Contract by fully staffing per the work hours and days noted herein. The Owner reserves the right to back charge the responsible Prime Contract for these fees if incurred.
7. All Asbestos and/or Lead Abatement shall take place to meet the requirements of the Preliminary Schedule and Project Master Schedules and shall be coordinated with the other Prime Contractors prior to commencement.

L. The Work shall be conducted to provide the least possible interference to the activities of the Owner's personnel and the surrounding property owners (neighbors).

1. Prime Contracts are hereby notified that: All Prime Contractors and their subcontractors shall limit excessive noise during 2nd shift known as work extending to 10PM weekdays upon approval by owner and city work hour restrictions. These operations shall not create a disturbance to neighboring properties.

M. Construction access to the site shall be limited to personnel, equipment and deliveries by suppliers relative to the Work of Prime Contractors and their subcontractors. Prime Contracts shall keep the Construction Manager advised of persons accessing the site and shall seek assistance with coordinating parking and storage facility locations for all Prime Contracts.

1. Where applicable, Contractors shall provide Building Site perimeter barricades as described herein the project and all temporary exit doors/lockable gates on the Project, securing these doors, fencing and/or gates at the end of each work shift.
2. When a Prime Contract engages in overtime, weekend or 2nd shift work, during the summer months and or during the normal school year, the respective Prime Contract shall notify Construction Manager of such and be responsible for securing the Project Site at the end of that work shift and perform site walk around the outside of construction area/work zone ensuring all debris is pickup up and there are no construction related hazards of any kind present once the responsible person leaves the site for the evening or weekend. This includes that all materials and equipment are fenced in and keys are removed. All interior projects have the same requirement to ensure that outside the work zone is clean from dust-dirt and that no materials are left outside the work area at any time.

1.11 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.12 DRAWINGS AND SPECIFICATIONS

A. Construction Documents indicate the sum total of the Contract that make up the complete work for the Project. Through this Section "Summary of Work", the intent of the Contractor's scope of Work and responsibility is generally described. Related requirements and conditions that are indicated in the Contract Documents include but are not limited to the following:

1. General Conditions and Requirements.
2. Referenced and applicable Codes, Regulations and Standards.
3. Scheduling and phasing requirements.
4. Existing conditions and restrictions on use of the site and facilities.

B. Drawings and Specifications are cooperative and supplementary. Portions of the Work, which can best be illustrated by Drawings, are not included in the Specifications and portions best described by Specifications are not depicted on Drawings.

1. All items necessary to complete the work shall be furnished whether written or illustrated.
2. All primes shall exercise good judgment and perform all work according to related industry standards.

PART 2 - SCOPE OF WORK

2.1 PRIME CONTRACTS

A. Scope of Work: Work includes but is not limited to, the following:
1. Provide all work identified in the Contract Documents.
2. All Specification Sections provided.
3. All abatement drawings provided for reference.

PART 3 - EXECUTION

3.1 WORK SEQUENCE

A. The Work shall be conducted to provide the least possible interference to the activities of the Owner's personnel, per the Project Preliminary Schedule.

B. Work required during overtime, extended shifts or holidays due to failure of contractor to maintain schedule, will be monitored by Architect/Construction Site representative, and may be monitored by Owners' personnel. Additional costs for Architect/Construction Site Representative and/or Owner personnel will be borne by the Contractor.

C. Coordination of any utility and power interruption must be done with approval of the Architect/Construction Site Representative. Shutdowns must occur during non-occupied timeframes only.

D. Construction access to the site shall be limited to those designated for personnel, equipment and deliveries by the Owner. All contractor staging, parking and storage shall be coordinated with the Construction Site Representative and subject to change.

E. Payments: Each bid that covers more than one school (i.e. one SED project) shall provide completed AIA G732 & G703 by building (for each SED project).

F. No work shall be installed without approved shop drawings. Any work in place without approved shop drawings will be rejected and removed by that contractor at their expense and backed charge all other costs related to.

G. Any work deemed by CM, Architect and District not properly installed by a contractor per the contract drawings and specifications shall be removed immediately and corrected, with all associated costs to be borne solely by that contractor.

H. All prime contractors shall coordinate their contract work with other primes to meet the project schedule and for a complete operational system or area or work.

I. All contractors are to provide within 3 weeks of award a "base line" construction schedule for their work from commencement to completion including all phasing. This schedule is to be updated monthly to show percentage progress of each item listed. This schedule shall be revised to provide a recovery schedule in the event of a delay for any reason. The recovery schedule shall include the "base line" item and the recovery to show how the delay is affecting the overall project schedule. This schedule is to be provided in MS Project or Primavera. Excel schedules are not accepted.

J. Prime contractor "base line" schedules are to be reviewed by each prime contractor and coordinated where work is related and that each prime's work shall be included in each "base line" contractor's schedule as necessary for coordination.

K. All contractors are to provide 2-week look ahead schedules showing work related to the base line and shall be coordinated with other prime 2-week look ahead schedules. These schedules will be Excel format. Format will be provided by the CM.

L. Contractors to provide a full-time supervisor on site 100% of the time. This is not a working foreman. Supervisors are not working with tools they are supervising their workers and coordinating with other contractors and district/ CM. Failure to provide will be default of your contract and subject costs related to and termination.

M. All prime contractors are the provide a project manpower structure showing names and telephone numbers of each responsible person on the project. This shall be updated as needed if personal changes are made.

N. All site equipment and dumpsters are to be behind temporary chain link fence when stored on site and or within the construction work zone where temporary chain link fence has been providing and installed by the prime. Each prime contractor is responsible to provide and install temporary chain link fence around their own stored equipment and dumpsters on site.

O. No equipment, panels or any services shall be turned off for any reason without written request and approval by the district. Project form shall be used for all shutdowns and required a 3-day notice. Other shutdowns may require more time.

P. **CONTRACT MC-01 – MECHANICAL WORK & PLUMBING WORK (MC)** — MECHANICAL/PLUMBING PRIME CONTRACT AT, NANUET SENIOR HIGH SCHOOL, FOR (BUT NOT LIMITED TOO) INTERIOR CABINET UNIT HEATER, MECHANICAL PIPING, PLUMBING AND SUMP PUMP, ANY WORK RELATED TO ROOFING SHALL BE COORDINATED WITH ROOFING CONTRACT INSTALLATION. ALL INTERIOR WORK SHALL BE COORDINATED WITH GENERAL CONTRACTS. SEE MILESTONE & PHASING SCHEDULED FOR MORE DETAILS.

Q. All GVAC louvers/vents are supplied by MC-01. Coordinate opening with other primes.

R. GVAC control wiring is provided and installed by MC-01. Power wiring by EC-01.

S. MC-01 is responsible for making their own through wall or through floor piping penetrations and is responsible for associated patching and firestopping as required.

T. Access doors for plumbing is provided by MC-01 and installed by GC-01.

U. To allow sufficient time for install, MC-01 is to provide GC-01 with any foundation sleeves and a coordinated sketch showing exact height/locations with distance from column line and depth below finished slab. If information is not provided in a timely manor, then MC is responsible for all core drilling to install piping/plumbing.

A. Project Site Superintendent: MC shall provide one (1) full time Project Site Superintendent while any work related to this Contract is being performed on site. Superintendent may be a working Foreman as lon g as the daily requirements of this Contract are maintained, as they relate to the Construction Documents and the Project

Schedule. Construction Manager reserves the right, in their opinion, to revoke this privilege if these requirements are not maintained. Superintendent shall work closely with the Construction Manager, and the other Prime Contract Superintendents and Foremen, in a manner that best promotes the Project Master Schedules and the objectives of the Project.

1. Superintendent shall be on site while Prime Contractor's own forces, and/or their sub-contractors forces, are on site; also while other Prime Contracts are installing work, or require coordination of work, related to this Contract, and/or as requested by the Construction Manager.
2. Superintendent shall be the same individual throughout the Project.
3. Project Site Superintendent shall be an individual with minimum of five (5) years' experience in this field of work.
4. Refer to Section 013100 "Project Management and Coordination" for further requirements.

B. Project Foreman: MC shall provide at least one (1) full time Project Foreman during each shift of work at each school; Foreman shall be able to make binding decisions, as they relate to the daily activities of their crew, as related to achieving the goals of the Project.

C. Site Communications: MC shall provide Project Superintendent with a mobile phone, all costs and service charges paid for by MC; provide Construction Manager with contact number(s).

D. Project Site Field Office: Provide site office facilities for this Contract's Project Superintendent. Site Office shall be equipped with telephone w/answering machine, fax, and e-mail. Contact information shall be provided to the Construction Manager.

1. The Owner reserves the right to seek reimbursement for temporary facilities not provided by this Prime Contract.

E. Scope of Work: Work of the MC includes but is not limited to, the following:

1. Coordination with other Prime Contracts, Owner and Construction Manager as required to adhere to and maintain approved Project Master Schedules. Prior to first payment, this includes submitting the Contractor's Construction Schedule to the Construction Manager for preparation of the Project Master Schedule.
2. All Mechanical demolition and new construction as indicated in the Contract Documents.
3. Mechanical scope is identified in the Contract Documents which include but is not limited to ALL drawings, specifications, this multiple contract summary, etc. This contract includes furnishing and installing access doors for walls and ceiling as required, which may include fire rated conditions., Prior to the submission of shop drawings for mechanical curbs, survey all existing curbs for accurate measurements. Determination of new curb height shall be made in coordination with Contract Documentation..

4. Prior to removal, survey condition of all existing roof top mechanical equipment scheduled to be removed and reinstalled and submit a report of the condition of each piece of existing equipment. Report shall include photographs and a location plan, and be submitted to the Architect and Construction Manager.
5. Removal, safe storage off roof (or outside of work area, as coordinated with BE Contractor), and reinstallation of all existing mechanical roof top equipment as indicated in the Contract Documents. Demolish existing curbs (following asbestos abatement by others) and provide and install new equipment curbs.
6. Reinstallation mechanical scope includes all miscellaneous piping, ductwork extension, low voltage wiring, equipment, hardware and insulation required for a complete and functional reinstallation of existing rooftop equipment. Coordinate any new roof penetrations, if required, with BE Contractor.
7. Reinstallation mechanical scope includes start-up, testing & balancing and recommissioning services for reinstalled mechanical equipment. Submit testing & balancing and commissioning reports to Architect and Construction Manager.
8. Prime Contract shall understand that renovation work may require work to proceed while existing systems are required to be maintained; all cost associated with this sequence shall be anticipated, and incorporated into the Bid.
    a. MC shall be cognizant of phasing and sequencing conditions, that may require MC to make temporary connections or installations of heating system components, in order to maintain operation of existing/new system configuration(s). It shall be the Prime Contract's responsibility to employ its own means and methods of accomplishing any such temporary conditions, at no additional cost to the owner.
    b. All new heating system components must be protected, from potential contamination, by any existing components that are still employed during system operation, should a partial existing/new configuration exist during the required heating period, September 15th – May 31st.
9. Prime Contractor shall read and familiarized themselves with the Lead Sections of the Construction Documents. Lead-based paint has been identified to exist on specific areas/surfaces of the work located within the building(s), and when encountered the Prime Contractor shall follow all applicable regulations while working with this material.
10. Prime Contractor shall read and familiarized themselves with the Asbestos Sections of the Construction Documents. Asbestos Containing Material is scheduled to be abated throughout specific areas of the building(s). Should ACM be encountered (after Abatement is completed), that may interfere with an installation; Prime Contractor shall cease work, and notify Construction Manager immediately.
    a. Penetrations not coordinated with the Prime Contractor responsible for asbestos abatement, prior to abatement of these spaces, shall become the responsibility of the respective Prime Contract requiring the penetration.

b. Contractor is required to review their work in the field prior to starting and advise if ACM is suspect on the work they intend to alter in anyway. There is no delay claim for lack of inspection of work.

11. Environmental Protection: Provide protection, and conduct construction in ways and by methods that comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.
    a. Restrict use of noisemaking tools and equipment to hours that will minimize complaints from persons or firms on or near the Project site.
12. The HVAC drawings are schematic in nature, and the MC will make adequate provisions to accommodate the actual field conditions without additional cost to the Owner.
13. Document on the Record Drawings all ductwork openings and penetrations larger than 2 inches in diameter.
14. Provide all demolition of Mechanical Systems indicated in the Construction Documents, and/or required for Work of this Prime Contract.
    a. Coordinate all demolition with Hazardous Materials documents.
    b. Coordinate with all other Prime Contracts regarding all removals required for the Project.
    c. Demolition of a system shall mean any and all components, removed in their entirety, to the point of origin or source.
15. Provide valves, whether permanent or temporary, to permit shutoff and/or capping of systems to achieve the Work of this Prime Contract.
16. Each Prime Contract shall be responsible for all respective SOG/SOD removals, and related infill thereof (doweled with #4 bar 16”o.c. unless otherwise detailed), that are not indicated on the Architectural Demolition plans.
    a. All concrete/masonry demolition shall be completed using wet saw methods.
17. MC Contractor shall provide all Work associated with creating structural openings or penetrations requiring lintels, for their own work (i.e. ductwork and pipe or conduit penetrations). This applies to all openings/penetrations greater than 5-inches through masonry or concrete walls.
    a. MC shall provide lintels and shop drawings for such openings for review by Design Team. MC shall indicate all required openings/penetrations requiring lintels on their Shop Drawings. Mechanical contractor is required to provide openings/penetrations on the coordination drawings that will require structural openings in accordance with the contract documents at no additional cost. Non-structural openings/penetrations, including those for convenience, shall be self-provided by the respective Prime Contractor.
    b. This assignment applies to new and existing construction areas.
    c. Refer to Structural documents for lintel type/size requirements and Architectural drawings for wall types. Walls not specifically identified in the documents are to be assumed as masonry construction.
    d. All openings/penetrations are to be identified on Record Drawings by the Prime Contract requiring the opening.

e. All scheduled exterior wall louver openings indicated on Architectural and/or Structural documents are to be created by this MC Contractor. MC shall supply and install louver.
f. Exact physical locations shall be laid-out by MC for coordinated sequencing with other respective Prime Contractors.

18. Provide cut and patch work related to that of this Prime Contract,, related to that of their Prime Contract, and at those areas specifically identified on the Construction Documents, regardless of trade creating the area to be patched.
    a. Each Prime Contract is responsible for all other respective Cutting & Patching required of their installations. Refer to Section 017329 "Cutting and Patching" for further information.
    b. Provide cut and patch for all affected materials at building interiors as required to provide access for relocation of existing or installation of new roof drains and rood drain leaders, to point of connection to existing piping or to building exterior, as indicated in Contract Documents.
19. Provide new HVAC system(s), or modifications of existing system(s) as indicated in the Construction Documents, complete and fully operational.
    a. Furnish all disconnects and motor starters (including related "heaters, fuses, and phase protection relays") for all equipment provided under this contract, for coordinated installation by EC.
    b. Provide Instrumentation and Controls (Energy Management System) complete as indicated on the drawings or specifications:
        1) Electrical Contractor shall provide line voltage power wiring to the control panels as indicated in the Contract Documents.
        2) EMS installer shall provide all low voltage wiring of controls, transformers, actuated dampers, motors, etc., as required for a complete operational system.
    c. Provide thermal insulation of all HVAC components provided by this Prime Contract.
20. Final connections of utilities are by MC, EC or PC, unless noted or assigned otherwise.
21. Provide sleeves required for piping penetrating walls, slabs and/or decks.
22. Provide through-penetration fire stop systems at all penetrations made by MC. MC Contractor shall maintain listed ratings of indicated assemblies. Provide repair of existing through-penetration fire stopping damaged by work of this Prime Contract.
    a. Sleeves with fire stopping are to be installed in sequence with fire-rated construction. This Prime Contract shall be responsible for installing fire stopping material at intersection of sleeve and constructed materials.
23. Provide coordination with, and notification to, the Construction Manager for all specified testing, training, commissioning, etc., of the Work of this Prime Contract. Refer to Division 00 Section "Project Forms" for applicable documentation documents.

24. Substantial Completion: Clean all mechanical and plumbing installations and provided equipment at the time of Substantial Completion or as directed by Construction Manager.
25. Coordinate all the preceding requirements, accordingly, with all applicable Alternates indicated in Section 012300 "Alternates".

F. Applicable Specification Sections: All specification Sections itemized below are to be provided complete by this Prime Contract, unless noted otherwise. In addition to these specifications, the contractor is required to review all specifications included in the overall contract that may contain related scope or detail for this specific contract.

1. All Division 00 and 01 – Procurement and Contracting Requirements & General Requirements
2. Division 03 – Concrete Division
3. Division 09 – Finishes
4. Division 22 – Plumbing
5. Division 23 – Heating, Ventilating, and Air Conditioning

END OF SECTION 011200

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SECTION 01 21 00 – ALLOWANCES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements governing allowances.
   1. Selected materials and equipment are specified in the Contract Documents by allowances. In some cases, these allowances include installation. Allowances have been established in lieu of additional requirements and to defer selection of actual materials and equipment to a later date when additional information is available for evaluation. If necessary, additional requirements will be issued by Change Order.

B. Types of allowances include the following:
   1. Lump-sum allowances.
   2. Contingency allowances.

C. Related Sections: The following Sections contain requirements that relate to this Section:
   1. Division 1 Section "Modification Procedures" specifies procedures for submitting and handling Change Orders.
   2. Division 1 Section "Quality Control Services" specifies procedures governing the use of allowances for inspection and testing.

1.3 SELECTION AND PURCHASE

A. At the earliest practical date after award of the Contract, advise the Architect of the date when the final selection and purchase of each product or system described by an allowance must be completed to avoid delaying the Work.

B. At the Architect's request, obtain proposals for each allowance for use in making final selections. Include recommendations that are relevant to performing the Work.

C. Purchase products and systems selected by the Architect from the designated supplier

1.4 SUBMITTALS

A. Submit proposals for purchase of products or systems included in allowances, in the form specified for Change Orders.

B. Submit invoices or delivery slips to show the actual quantities of materials delivered to the site for use in fulfillment of each allowance.

1.5 CONTINGENCY ALLOWANCES

A. Use the contingency allowance only as directed for the Owner's purposes and only by Change Orders that indicate amounts to be charged to the allowance.

B. The Contractor's overhead and profit, including costs for bonds and insurance, delivery, equipment rental and similar costs, for these allowances shall be included in the values of the general requirements of the contract sum and are not chargeable under allowance disbursement.

C. At Project closeout, credit unused amounts remaining in the contingency allowance to the Owner by Change Order.

1.6 UNUSED MATERIALS

A. Return unused materials to the manufacturer or supplier for credit to the Owner, after installation has been completed and accepted.
   1. When requested by the Architect, prepare unused material for storage by Owner where it is not economically practical to return the material for credit. When directed by the Architect, deliver unused material to the Owner's storage space. Otherwise, disposal of unused material is the Contractor's responsibility.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine products covered by an allowance promptly upon delivery for damage or defects.

3.2 PREPARATION

A. Coordinate materials and their installation for each allowance with related materials and installations to ensure that each allowance item is completely integrated and interfaced with related work.

3.3 SCHEDULE OF ALLOWANCES

A. Include a contingency allowance for each Base Bid according to the following schedule:

   1. Contract GC-01 – General Contract Work: Provide a Contingency Allowance of $27,000 for use according to Owner’s instructions.
   2. Contract EC-01 – General Contract Work: Provide a Contingency Allowance of $3,000 for use according to Owner’s instructions.
   3. Contract MC-01 – General Contract Work: Provide a Contingency Allowance of $5,000 for use according to Owner’s instructions.

END OF SECTION 012100

SECTION 01 22 00 - UNIT PRICES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for unit prices.

B. Related Requirements:

1. Section 01 26 00 "Contract Modification Procedures" for procedures for submitting and handling Change Orders.
2. Section 01 45 00 "Quality Requirements" for general testing and inspecting requirements.

1.3 DEFINITIONS

A. Unit price is an amount incorporated in the Agreement, applicable during the duration of the Work as a price per unit of measurement for materials, equipment, or services, or a portion of the Work, added to or deducted from the Contract Sum by appropriate modification, if the scope of Work or estimated quantities of Work required by the Contract Documents are increased or decreased.

1.4 PROCEDURES

A. Unit prices include all necessary material, plus cost for delivery, installation, insurance, overhead, and profit.

B. Measurement and Payment: See individual Specification Sections for work that requires establishment of unit prices. Methods of measurement and payment for unit prices are specified in those Sections.

C. Owner reserves the right to reject Contractor's measurement of work-in-place that involves use of established unit prices and to have this work measured, at Owner's expense, by an independent surveyor acceptable to Contractor.

D. List of Unit Prices: A schedule of unit prices is included in Part 3. Specification Sections referenced in the schedule contain requirements for materials described under each unit price.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 SCHEDULE OF UNIT PRICES

General Contractor – GC-01

A. Unit Price GC-01 #1: Abatement of ACM pipe insulation
   1. Description: Abatement of ACM floor Tile & Mastic (VAT) to be used as an add or deduct from base bid quantities.
   2. Unit of Measurement: Per Linear Foot (LF) of insulation

B. Unit Price GC-01 #2: Unsuitable Soil Removal
   1. Description: All labor and material to excavate, haul, and dispose of any identified unsuitable soil off site to be used as an add to base bid quantities. NOTE: Unsuitable soil is not anticipated.
   2. Unit of Measurement: Per Cubic Yard (CY) of unsuitable soil.

C. Unit Price GC-01 #3: Trench Rock Removal
   1. Description: All labor and material to excavate, haul, and dispose of any identified trench rock off site to be used as an add to base bid quantities. NOTE: Borings do not indicate the presence of rock.
   2. Unit of Measurement: Per Cubic Yard (CY) of trench rock.

D. Unit Price GC-01 #4: Construction Debris Soil Removal
   1. Description: All labor and material to excavate, haul, and dispose of any identified construction debris in soil off site to be used as an add to base bid quantities. Debris includes, but is not limited to: Car parts, buried trash, and unknown drainage structures.
   2. Unit of Measurement: Per Cubic Yard (CY) of soil containing construction debris.

Electrical Contractor – EC-01

A. NONE NOTED

Sitework Contractor – MC-01

B. NONE NOTED

END OF SECTION 01 22 00

SECTION 012500 - SUBSTITUTION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for handling requests for substitutions made after award of the Contract.
   1. Single General Contracts: Provisions of this Section apply to the construction activities of General Contractor.

B. Related Sections: The following Sections contain requirements that relate to this Section:
   1. Division 1 Section "Submittals" specifies requirements for submitting the Contractor's Construction Schedule and the Submittal Schedule.
   2. Division 1 Section "Materials and Equipment" specifies requirements governing the Contractor's selection of products and product options.

1.3 DEFINITIONS

A. Definitions in this Article do not change or modify the meaning of other terms used in the Contract Documents.

B. Substitutions: Changes in products, materials, equipment, and methods of construction required by the Contract Documents proposed by the Contractor after award of the Contract are considered to be requests for substitutions. The following are not considered to be requests for substitutions:
   1. Substitutions requested during the bidding period, and accepted by Addendum prior to award of the Contract, are included in the Contract Documents and are not subject to requirements specified in this Section for substitutions.
   2. Revisions to the Contract Documents requested by the Owner or Architect.
   3. Specified options of products and construction methods included in the Contract Documents.
   4. The Contractor's determination of and compliance with governing regulations and orders issued by governing authorities.

1.4 SUBMITTALS

A. Substitution Request Submittal: The Architect will consider requests for substitution if received within 15 days after commencement of the Work. Requests received more than 15 days after commencement of the Work may be considered or rejected at the discretion of the Architect.
   1. Submit 3 copies of each request for substitution for consideration. Submit requests in the form and according to procedures required for change-order proposals. See 00 43 25 for the Substitution Request From.
   2. Identify the product or the fabrication or installation method to be replaced in each request. Include related Specification Section and Drawing numbers.
   3. Provide complete documentation showing compliance with the requirements for substitutions, and the following information, as appropriate:
      a. Coordination information, including a list of changes or modifications needed to other parts of the Work and to construction performed by the Owner and separate contractors, that will be necessary to accommodate the proposed substitution.

b. A detailed comparison of significant qualities of the proposed substitution with those of the Work specified. Significant qualities may include elements, such as performance, weight, size, durability, and visual effect.
c. Product Data, including Drawings and descriptions of products and fabrication and installation procedures.
d. Samples, where applicable or requested.
e. A statement indicating the substitution's effect on the Contractor's Construction Schedule compared to the schedule without approval of the substitution. Indicate the effect of the proposed substitution on overall Contract Time.
f. Cost information, including a proposal of the net change, if any in the Contract Sum.
g. The Contractor's certification that the proposed substitution conforms to requirements in the Contract Documents in every respect and is appropriate for the applications indicated.
h. The Contractor's waiver of rights to additional payment or time that may subsequently become necessary because of the failure of the substitution to perform adequately.

4. Architect's Action: If necessary, the Architect will request additional information or documentation for evaluation within one week of receipt of a request for substitution. The Architect will notify the Contractor of acceptance or rejection of the substitution within 2 weeks of receipt of the request, or one week of receipt of additional information or documentation, whichever is later. Acceptance will be in the form of a change order.
   a. Use the product specified if the Architect cannot make a decision on the use of a proposed substitute within the time allocated.

PART 2 - PRODUCTS

2.1 SUBSTITUTIONS

A. Conditions: The Architect will receive and consider the Contractor's request for substitution when one or more of the following conditions are satisfied, as determined by the Architect. If the following conditions are not satisfied, the Architect will return the requests without action except to record noncompliance with these requirements.

1. Extensive revisions to the Contract Documents are not required.
2. Proposed changes are in keeping with the general intent of the Contract Documents.
3. The request is timely, fully documented, and properly submitted.
4. The specified product or method of construction cannot be provided within the Contract Time. The Architect will not consider the request if the product or method cannot be provided as a result of failure to pursue the Work promptly or coordinate activities properly.
5. The request is directly related to an "or-equal" clause or similar language in the Contract Documents.
6. The requested substitution offers the Owner a substantial advantage, in cost, time, energy conservation, or other considerations, after deducting additional responsibilities the Owner must assume. The Owner's additional responsibilities may include compensation to the Architect for redesign and evaluation services, increased cost of other construction by the Owner, and similar considerations.
7. The specified product or method of construction cannot receive necessary approval by a governing authority, and the requested substitution can be approved.
8. The specified product or method of construction cannot be provided in a manner that is compatible with other materials and where the Contractor certifies that the substitution will overcome the incompatibility.

9. The specified product or method of construction cannot be coordinated with other materials and where the Contractor certifies that the proposed substitution can be coordinated.
10. The specified product or method of construction cannot provide a warranty required by the Contract Documents and where the Contractor certifies that the proposed substitution provides the required warranty.
11. Where a proposed substitution involves more than one general contractor, each contractor shall cooperate with the other contractors involved to coordinate the Work, provide uniformity and consistency, and assure compatibility of products.

B. The Contractor's submittal and the Architect's acceptance of Shop Drawings, Product Data, or Samples for construction activities not complying with the Contract Documents do not constitute an acceptable or valid request for substitution, nor do they constitute approval.

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 012500

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SECTION 012600 – CONTRACT MODIFICATION PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section specifies administrative and procedural requirements for handling and processing contract modifications.

1. Multiple Prime Contracts: Provisions of this Section apply to the work of each prime contractor.

B. Related Sections: The following Sections contain requirements that relate to this Section:

1. Division 1 Section "Submittals" for requirements for the Contractor's Construction Schedule.
2. Division 1 Section "Applications for Payment" for administrative procedures governing Applications for Payment.
3. Division 1 Section "Substitutions" for administrative procedures for handling requests for substitutions made after award of the Contract.

1.3 MINOR CHANGES IN THE WORK

A. The Architect will issue supplemental instructions authorizing minor changes in the Work, not involving adjustment to the Contract Sum or Contract Time, on AIA Form G710, Architect's Supplemental Instructions.

1.4 SUBMITTALS

A. Every change or allowance proposal (regardless of whom initiated) will be accompanied by the following information:

1. Labor Rate worksheet (attached at the end of this section) must be filled out for each trade and notarized with the required supporting documentation.

2. Full itemized breakdown: All proposals to be broken down by material, labor, man hours, quantities, unit prices, overhead, profit, subcontractor, and supplier quotes attached.

3. If the contractor fails to submit this required information timely, it will be cause for delay and will be addressed as such under the applicable sections of the contract.

1.5 CHANGE ORDER PROPOSAL REQUESTS

A. Owner-Initiated Proposal Requests: The Architect will issue a detailed description of proposed changes in the Work that will require adjustment to the Contract Sum or

Contract Time. If necessary, the description will include supplemental or revised Drawings and Specifications.

1. Proposal requests issued by the Architect are for information only. Do not consider them as an instruction either to stop work in progress or to execute the proposed change.

2. Within 10 days of receipt of a proposal request, submit an estimate of cost necessary to execute the change to the Architect for the Owner's review.

   a. Include an itemized list of quantities of products required and unit costs, with the total amount of purchases to be made. Furnish survey data and backup paperwork to substantiate quantities. Separate labor hours by trade and indicate labor rate.
   b. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.

   c. Include a statement indicating the effect the proposed change in the Work will have on the Contract Time.

B. Contractor-Initiated Proposals: When latent or unforeseen conditions require modifications to the Contract, the Contractor may propose changes by submitting a request for a change to the Architect.

1. Include a statement outlining the reasons for the change and the effect of the change on the Work. Provide a complete description of the proposed change. Indicate the effect of the proposed change on the Contract Sum and Contract Time.
2. Include an itemized list of quantities of products required and unit costs, with the total amount of purchases to be made. Furnish survey data to substantiate quantities.
3. Indicate applicable taxes, delivery charges, equipment rental, and amounts of trade discounts.
4. Comply with requirements in Section "Product Substitutions" if the proposed change requires substitution of one product or system for a product or system specified.

C. Proposal Request Form: Use AIA Document G709 for Change Order Proposal Requests.

1.6 ALLOWANCES

A. Allowance Adjustment: For allowance-cost adjustment, base each Change Order Proposal on the difference between the actual purchase amount and the allowance, multiplied by the final measurement of work-in-place. Where applicable, include reasonable allowances for cutting losses, tolerances, mixing wastes, normal product imperfections, and similar margins.

1. Include installation costs in the purchase amount only where indicated as part of the allowance.
2. When requested, prepare explanations and documentation to substantiate the margins claimed.
3. Submit substantiation of a change in scope of work claimed in the Change Orders related to unit-cost allowances.

4. The Owner reserves the right to establish the actual quantity of work-in-place by independent quantity survey, measure, or count.
5. Contractor's overhead and profit, including costs for bonds & insurances, for these allowances shall be included in the values of the general requirements of contract sum and are not chargeable under allowance disbursement.

B. Submit claims for increased costs because of a change in scope or nature of the allowance described in the Contract Documents, whether for the purchase order amount or the Contractor's handling, labor, installation, overhead, and profit. Submit claims within 15 days of receipt of the Change Order or Construction Change Directive authorizing work to proceed. The Owner will reject claims submitted later than 15 days.

1. Do not include the Contractor's or subcontractor's indirect expense in the Change Order cost amount unless it is clearly shown that the nature or extent of work has changed from what could have been foreseen from information in Contract Documents.
2. No change to the Contractor's indirect expense is permitted for selection of higher or lower-priced materials or systems of the same scope and nature as originally indicated.

1.7 CONSTRUCTION CHANGE DIRECTIVE

A. Construction Change Directive: When the Owner and the Contractor disagree on the terms of a Proposal Request, the Architect may issue a Construction Change Directive on AIA Form G734. The Construction Change Directive instructs the Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.

1. The Construction Change Directive contains a complete description of the change in the Work. It also designates the method to be followed to determine change in the Contract Sum or Contract Time.

B. Documentation: Maintain detailed records on a time and material basis of work required by the Construction Change Directive.

1. After completion of the change, submit an itemized account and supporting data necessary to substantiate cost and time adjustments to the Contract.

1.8 CHANGE ORDER PROCEDURES

A. Upon the Owner's approval of a Proposal Request, the Architect will issue a Change Order for signatures of the Owner and the Contractor on AIA Form G731.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 012600

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SECTION 012900 – PAYMENT PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section specifies administrative and procedural requirements governing each prime contractor's Applications for Payment.

1. Coordinate the Schedule of Values and Applications for Payment with the Contractor's Construction Schedule, Submittal Schedule, and List of Subcontracts.

B. Related Sections: The following Sections contain requirements that relate to this Section.

1. Schedules: The Contractor's Construction Schedule and Submittal Schedule are specified in Division 1 Section "Submittals."

1.3 SCHEDULE OF VALUES

A. Coordination: Each prime Contractor shall coordinate preparation of its Schedule of Values for its part of the Work with preparation of the Contractors' Construction Schedule.

1. Correlate line items in the Schedule of Values with other required administrative schedules and forms, including:

a. Contractor's Construction Schedule.
b. Application for Payment forms, including Continuation Sheets.
c. List of subcontractors.
d. Schedule of allowances.
e. Schedule of alternates.
f. Schedule of submittals.

2. Submit the Schedule of Values to the Construction Manager within 10 days of receipt of Letter of Intent but no later than 7 days before the date scheduled for submittal of the initial Applications for Payment.

B. Format and Content: Use the Project Manual table of contents as a guide to establish the format for the Schedule of Values. Provide at least one line item for each Specification Section.

1. Identification: Include the following Project identification on the Schedule of Values:

a. Project name and location.
b. Name of the Architect.

c. Project number.
d. Contractor's name and address.
e. Date of submittal.

2. Arrange the Schedule of Values in tabular form with separate columns to indicate the following for each item listed:

   a. Related Specification Section or Division.
   b. Description of Work.
   c. Name of subcontractor.
   d. Name of manufacturer or fabricator.
   e. Name of supplier.
   f. Change Orders (numbers) that affect value.
   g. Dollar value.
      1) Percentage of Contract Sum to nearest one-hundredth percent, adjusted to total 100 percent.

3. Provide a breakdown of the Contract Sum in sufficient detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with the Project Manual table of contents. Break principal subcontract amounts down into several line items. All items to have separate material and labor lines. Front end items will be broken out separately and have categories for bonds, insurance, submittals, field supervision, project management, cleanup, final cleanup (allowance – last page / entry). Balance of items separated by spec section and / or work activity (as directed by ARCHITECT).
4. Round amounts to nearest whole dollar; the total shall equal the Contract Sum.
5. Provide a separate line item in the Schedule of Values for each part of the Work where Applications for Payment may include materials or equipment, purchased or fabricated and stored, but not yet installed.

   a. Differentiate between items stored on-site and items stored off-site. Include requirements for insurance and bonded warehousing, if required.

6. Provide separate line items on the Schedule of Values for initial cost of the materials, for each subsequent stage of completion, and for total installed value of that part of the Work.
7. Unit-Cost Allowances: Show the line-item value of unit-cost allowances, as a product of the unit cost, multiplied by the measured quantity. Estimate quantities from the best indication in the Contract Documents.
8. Margins of Cost: Show line items for indirect costs and margins on actual costs only when such items are listed individually in Applications for Payment. Each item in the Schedule of Values and Applications for Payment shall be complete. Include the total cost and proportionate share of general overhead and profit margin for each item.

   a. Temporary facilities and other major cost items that are not direct cost of actual work-in-place may be shown either as separate line items in the Schedule of Values or distributed as general overhead expense, at the Contractor's option.

9. Schedule Updating: Update and resubmit the Schedule of Values prior to the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

1.4 APPLICATIONS FOR PAYMENT

A. Each Application for Payment shall be consistent with previous applications and payments as certified by the Architect and paid for by the Owner.

1. The initial Application for Payment, the Application for Payment at time of Substantial Completion, and the final Application for Payment involve additional requirements.

B. Payment-Application Times: Each progress-payment date is indicated in the Agreement. The period of construction Work covered by each Application for Payment is the period indicated in the Agreement.

C. Payment-Application Times: The date for each progress payment is as designated by the Owner – typically the last Friday of the month). The period covered by each Application for Payment is the previous month. Contractors will submit their pencil copy of the 25th of the month. Late applications will not be processed until the next months billing period.

D. Payment-Application Forms: Use AIA Document G732/CMa and Continuation Sheets G703 as the form for Applications for Payment.

1. Separate Continuation Sheets shall be provided for work which takes place on each building, which will detail that portion of the contract which is attributable to the specific building. The appropriate S.E.D. project number shall be shown on the top of each continuation form.

E. Application Preparation: Complete every entry on the form. Include notarization and execution by a person authorized to sign legal documents on behalf of the Contractor. The Architect will return incomplete applications without action.

1. Entries shall match data on the Schedule of Values and the Contractor's Construction Schedule. Use updated schedules if revisions were made.
2. Include amounts of Change Orders and Construction Change Directives issued prior to the last day of the construction period covered by the application.
3. Provide copies of payrolls which are signed and notarized documenting compliance with prevailing wage laws. Payroll for Prime Contractors is required from the 25th of the previous month to the 24th of the current month. Payroll for Subcontractors is required from the 16th of the previous month to the 15th of the current month.
4. Provide copies of lien waivers for the previous payment. Include certificate of monthly payment for subcontractors for the previous month.

F. Transmittal: Submit 5 signed and notarized original copies of each Application for Payment to the Architect by a method ensuring receipt within 24 hours. Each copy shall be complete, including waivers of lien, certified payroll, OSHA 10 cards, and similar attachments, when required. Application for payments without the required backup will not be signed by the Architect, or owner and thus will not be processed.

G. Waivers of Mechanics Lien: With each Application for Payment, submit waivers of mechanics liens from subcontractors, sub-subcontractors and suppliers for the construction period covered by the previous application.

1. Submit partial waivers on each item for the amount requested, prior to deduction for retainage, on each item.
2. When an application shows completion of an item, submit final or full waivers.

3. The Owner reserves the right to designate which entities involved in the Work must submit waivers.

    a. Submit final Applications for Payment with or preceded by final waivers from every entity involved with performance of the Work covered by the application who is lawfully entitled to a lien.

4. Waiver Forms: Submit waivers of lien on forms, and executed in a manner, acceptable to the Owner.

H. Initial Application for Payment: Administrative actions and submittals, that must precede or coincide with submittal of the first Application for Payment include the following. The initial payment application will not be processed until all of these actions and submittals have been received by the Architect. When preliminary submissions are received with the initial application (items 4 and 7), the final submission for these items must be received and approved by the Architect prior to submission of the second application for payment.

1. List of subcontractors.
2. List of principal suppliers and fabricators.
3. Schedule of Values.
4. Contractor's Construction Schedule (preliminary if not final).
5. Schedule of principal products.
6. Schedule of unit prices.
7. Submittal Schedule (preliminary if not final).
8. List of Contractor's staff assignments.
9. List of Contractor's principal consultants.
10. Copies of building permits.
11. Copies of authorizations and licenses from governing authorities for performance of the Work.
12. Initial progress report.
13. Report of preconstruction meeting.
14. Certificates of insurance and insurance policies.
15. Performance and payment bonds.
16. Data needed to acquire the Owner's insurance.
17. Initial settlement survey and damage report, if required.

I. Application for Payment at Substantial Completion: Following issuance of the Certificate of Substantial Completion, submit an Application for Payment.

1. This application shall reflect Certificates of Partial Substantial Completion issued previously for Owner occupancy of designated portions of the Work.
2. Administrative actions and submittals that shall precede or coincide with this application include:

    a. Occupancy permits and similar approvals.
    b. Warranties (guarantees) and maintenance agreements.
    c. Test/adjust/balance records.
    d. Maintenance instructions.
    e. Meter readings.
    f. Startup performance reports.
    g. Changeover information related to Owner's occupancy, use, operation, and maintenance.
    h. Final cleaning.
    i. Application for reduction of retainage and consent of surety.

j. Advice on shifting insurance coverages.
k. Final progress photographs.
l. List of incomplete Work, recognized as exceptions to Architect's Certificate of Substantial Completion.

J. Final Payment Application: Administrative actions and submittals that must precede or coincide with submittal of the final Application for Payment include the following:

1. Completion of Project closeout requirements.
2. Completion of items specified for completion after Substantial Completion.
3. Ensure that unsettled claims will be settled.
4. Ensure that incomplete Work is not accepted and will be completed without undue delay.
5. Transmittal of required Project construction records to the Owner.
6. Certified property survey.
7. Proof that taxes, fees, and similar obligations were paid.
8. Removal of temporary facilities and services.
9. Removal of surplus materials, rubbish, and similar elements.
10. Change of door locks to Owner's access.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 012900

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SECTION 013100 - PROJECT MANAGEMENT AND COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and supervisory requirements necessary for coordinating construction operations including, but not necessarily limited to, the following:

1. General project coordination procedures.
2. Conservation.
3. Coordination Drawings.
4. Administrative and supervisory personnel.
5. Cleaning and protection.

B. Related Sections: The following Sections contain requirements that relate to this Section:

1. Division 1 Section "Project Meetings" for progress meetings, coordination meetings, and pre-installation conferences.
2. Division 1 Section "Submittals" for preparing and submitting the Contractor's Construction Schedule.
3. Division 1 Section "Materials and Equipment" for coordinating general installation.
4. Division 1 Section "Contract Closeout" for coordinating contract closeout.

1.3 COORDINATION

A. Coordinate construction operations included in various Sections of these Specifications to assure efficient and orderly installation of each part of the Work. Coordinate construction operations included under different Sections that depend on each other for proper installation, connection, and operation.

1. Schedule construction operations in the sequence required to obtain the best results where installation of one part of the Work depends on installation of other components, before or after its own installation.
2. Coordinate installation of different components to assure maximum accessibility for required maintenance, service, and repair.
3. Make provisions to accommodate items scheduled for later installation.
4. Each Prime Contractor is required to coordinate with the General Contract #1, and be on site as walls are being built to lay out all penetrations to walls under construction and install their roughing as the walls are progressing.

B. Where necessary, prepare memoranda for distribution to each party involved, outlining special procedures required for coordination. Include such items as required notices, reports, and attendance at meetings.

1. Prepare similar memoranda for the Owner and separate contractors where coordination of their work is required.

C. Administrative Procedures: Coordinate scheduling and timing of required administrative procedures with other construction activities to avoid conflicts and assure orderly progress of the Work. Such administrative activities include, but are not limited to, the following:

1. Preparation of schedules.
2. Installation and removal of temporary facilities.
3. Processing of submittals and photocopying/delivery to affected contractors.
4. Progress meetings.
5. Project closeout activities.

D. Conservation: Coordinate construction operations to assure that operations are carried out with consideration given to conservation of energy, water, and materials.

1. Salvage materials and equipment involved in performance of, but not actually incorporated in, the Work.

1.4 SUBMITTALS

A. Coordination Drawings: Prepare coordination drawings where careful coordination is needed for installation of products and materials fabricated by separate entities. Prepare coordination drawings where limited space availability necessitates maximum utilization of space for efficient installation of different components.

1. Show the relationship of components shown on separate Shop Drawings.
2. Indicate required installation sequences.
3. Comply with requirements contained in Section "Submittals."
4. A coordination meeting with all Prime Contractors to review completed coordination drawings will be held within 30 days of Contract award.

B. Staff Names: Within 15 days of commencement of construction operations, submit a list of the Contractor's principal staff assignments, including the superintendent and other personnel in attendance at the Project Site. Identify individuals and their duties and responsibilities. List their addresses and telephone numbers.

1. Post copies of the list in the Project meeting room, the temporary field office, and each temporary telephone.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION

3.1 GENERAL COORDINATION PROVISIONS

A. Inspection of Conditions: Require the Installer of each major component to inspect both the substrate and conditions under which Work is to be performed. Do not proceed until unsatisfactory conditions have been corrected in an acceptable manner.

B. Coordinate temporary enclosures with required inspections and tests to minimize the necessity of uncovering completed construction for that purpose.

3.2 CLEANING AND PROTECTION

A. Each Prime Contractor is to clean and protect construction in progress and adjoining materials in place, during handling and installation. Apply protective covering where required to assure protection from damage or deterioration at Substantial Completion.

B. Clean and provide maintenance on completed construction as frequently as necessary through the remainder of the construction period. Adjust and lubricate operable components to assure operability without damaging effects.

C. Limiting Exposures: Supervise construction operations to assure that no part of the construction, completed or in progress, is subject to harmful, dangerous, damaging, or otherwise deleterious exposure during the construction period. Where applicable, such exposures include, but are not limited to, the following:

1. Excessive static or dynamic loading.
2. Excessive internal or external pressures.
3. Excessively high or low temperatures.
4. Thermal shock.
5. Excessively high or low humidity.
6. Air contamination or pollution.
7. Water or ice.
8. Solvents.
9. Chemicals.
10. Light.
11. Radiation.
12. Puncture.
13. Abrasion.
14. Heavy traffic.
15. Soiling, staining, and corrosion.
16. Bacteria.
17. Rodent and insect infestation.
18. Combustion.
19. Electrical current.
20. High-speed operation.
21. Improper lubrication.
22. Unusual wear or other misuse.
23. Contact between incompatible materials.
24. Destructive testing.
25. Misalignment.
26. Excessive weathering.
27. Unprotected storage.
28. Improper shipping or handling.
29. Theft.
30. Vandalism.

END OF SECTION 013100

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SECTION 013119 - PROJECT MEETINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section specifies administrative and procedural requirements for project meetings, including, but not limited to, the following:

1. Preconstruction conferences.
2. Preinstallation conferences.
3. Progress meetings.
4. Coordination meetings.

B. Related Sections: The following Sections contain requirements that relate to this Section:

1. Division 1 Section "Coordination" for procedures for coordinating project meetings with other construction activities.
2. Division 1 Section "Submittals" for submitting the Contractor's Construction Schedule.

1.3 PRECONSTRUCTION CONFERENCE

A. A preconstruction conference will be scheduled before starting construction, at a time convenient to the Owner and the Architect and construction manager, but no later than 14 days after execution of the Agreement. The conference will be held at the Project Site or another convenient location.

B. Attendees: Authorized representatives of the Owner, Architect, construction manager and their consultants; the Contractor and its superintendent; major subcontractors; manufacturers; suppliers; and other concerned parties shall attend the conference. All participants at the conference shall be familiar with the Project and authorized to conclude matters relating to the Work.

C. Agenda: Discuss items of significance that could affect progress, including the following:

1. Tentative construction schedule.
2. Critical work sequencing.
3. Designation of responsible personnel.
4. Procedures for processing field decisions and Change Orders.
5. Procedures for processing Applications for Payment.
6. Distribution of Contract Documents.
7. Submittal of Shop Drawings, Product Data, and Samples.
8. Preparation of record documents.
9. Use of the premises.

10. Parking availability.
11. Office, work, and storage areas.
12. Equipment deliveries and priorities.
13. Safety procedures.
14. First aid.
15. Security.
16. Housekeeping.
17. Working hours.

D. Reporting: Construction Manager shall prepare and issue minutes to attendees and interested parties.

1.4 PREINSTALLATION CONFERENCES

A. Conduct a pre-installation conference at the Project Site before each construction activity that requires coordination with other construction.

B. Attendees: The Installer and representatives of the Prime Contractor, manufacturers and fabricators involved in or affected by the installation, and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise the Construction Manager of scheduled meeting dates.

1. Review the progress of other construction activities and preparations for the particular activity under consideration at each pre-installation conference, including requirements for the following:

a. Contract Documents.
b. Options.
c. Related Change Orders.
d. Purchases.
e. Deliveries.
f. Shop Drawings, Product Data, and quality-control samples.
g. Review of mockups.
h. Possible conflicts.
i. Compatibility problems.
j. Time schedules.
k. Weather limitations.
l. Manufacturer's recommendations.
m. Warranty requirements.
n. Compatibility of materials.
o. Acceptability of substrates.
p. Temporary facilities.
q. Space and access limitations.
r. Governing regulations.
s. Safety.
t. Inspecting and testing requirements.
u. Required performance results.
v. Recording requirements
w. Protection.

2. Record significant discussions and agreements and disagreements of each conference and the approved schedule. Promptly distribute the record of the meeting to everyone concerned, including the Owner and the Architect.

3. Do not proceed with the installation if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of Work and reconvene the conference at the earliest feasible date.
4. Reporting: Prime Contractor or Installer shall issue minutes to attendees, Owner and Architect, and construction manager.

1.5 PROGRESS MEETINGS

A. Progress meetings will be held at the Project Site on a weekly basis.

B. Attendees: In addition to representatives of the Owner and the Architect and Construction Manager, each Prime Contractor shall be represented at these meetings. **Attendance is mandatory at each meeting and a penalty sum of $500.00 per missed meeting will be assessed to the Prime Contractor not attending without prior written authorization from the Architect. This sum can be deducted from the contractors Schedule of Values.** Subcontractors, suppliers, or other entities will be invited at the discretion of the Owner and the Architect. All participants at the conference shall be familiar with the Project and authorized to conclude matters relating to the Work.

C. Agenda: Review and correct or approve minutes of the previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to the status of the Project.

1. Contractor's Construction Schedule: Review progress since the last meeting. Determine where each activity is in relation to the Contractor's Construction Schedule, whether on time or ahead or behind schedule. Determine how construction behind schedule will be expedited; secure commitments from parties involved to do so. Discuss whether schedule revisions are required to insure that current and subsequent activities will be completed within the Contract Time.
2. Review the present and future needs of each entity present, including the following:

    a. Interface requirements.
    b. Time.
    c. Sequences.
    d. Status of submittals.
    e. Deliveries.
    f. Off-site fabrication problems.
    g. Access.
    h. Site utilization.
    i. Temporary facilities and services.
    j. Hours of work.
    k. Hazards and risks.
    l. Housekeeping.
    m. Quality and work standards.
    n. Change Orders.
    o. Documentation of information for payment requests.

D. Reporting: Approximately 5 days after each meeting, Construction Manager will prepare and distribute minutes of the meeting to each party present and to parties who should have been present. Include a brief summary, in narrative form, of progress since the previous meeting and report.

1.6 COORDINATION MEETINGS

A. Conduct project coordination meetings at regular intervals convenient for all parties involved. Project coordination meetings are in addition to specific meetings held for other purposes, such as regular progress meetings and special pre-installation meetings.

B. Request representation at each meeting by every party currently involved in coordination or planning for the construction activities involved.

C. Record meeting results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting.

D. The Owner's Field Manager will conduct daily meetings with all prime contractors performing work. The purpose of the meeting is to provide the opportunity for each prime contractor to communicate to the Field Manager any items relating to their respective construction activity for that day (request for shutdown, deliveries, etc.) The meetings will commence from 7:00 o'clock am until 7:30 o'clock am. The foreman of each Prime Contractor must attend. These meetings are generally informal. The Field Manager will keep minutes of these meetings when appropriate and will be available upon request.

1.7 SAFETY MEETINGS

A. Each Prime Contractor will be responsible to conduct safety meetings on a regular basis (but not less than three times during any thirty day period.)

B. Minutes of the Safety Meeting must be submitted to the construction manager within 4 business days. Failure to conduct and submit meeting minutes will be grounds to reject the Prime Contractor's progress payment.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 013119

SECTION 01 31 50 - SAFETY AND HEALTH

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 PROJECT SITE SAFETY

A. The Prime Contractor, not the Architect, is responsible for Project site safety.

1.3 SAFETY AND HEALTH REGULATIONS

A. The Prime Contractor, and any entity working for the Prime Contractor, shall comply with the U.S. Department of Labor Safety and Health Regulations for construction promulgated under the Occupational Safety and Health Act of 1970 (PL 91-54), latest revisions and with the latest requirements of the "Right to Know" laws and the New York State Labor Law.

B. In order to protect the general public and the lives and health of his/her employees under the Contract, the Prime Contractor shall comply with all pertinent provisions of the latest issues of the Federal Register, Bureau of Labor Standards, Safety and Health Regulations; New York State Industrial Code Rule 30 pertaining to Tunneling Operations; New York State Industrial Code Rule 23 pertaining to Trenching Operations; and the "Manual of Accident Prevention in Construction" issued by the Associated General Contractors of America, Inc., and shall maintain an accurate record of all cases of death, occupational disease, and injury requiring medical attention or causing loss of time from work under this Contract. In case of a conflict between the above noted authorities the most stringent shall prevail.

C. The Prime Contractor shall have on the project site at all times, while work is in progress, at least one person skilled in safety and health procedures and familiar with State and Federal safety and health regulations whose responsibility shall be to observe methods and procedures. He shall have the duty and authority to stop and correct all unsafe and unhealthy conditions.

D. Toxic, noxious or otherwise hazardous fumes, gases or dusts, etc. from welding, cadwelding, painting, grinding, sawing, sweeping or any other operations shall be kept to the absolute minimum and shall be vented directly to the outside by the Contractor, and only used when authorized by the Architect.

E. The Prime Contractor to submit to the Architect, prior to first payment application approval, 2 copies of Material Safety and Data Sheets (MSDS) for all material used on site. The Prime Contractor shall also keep one (1) complete set of Material Safety and Data Sheets (MSDS) onsite at all times.

1. These reference materials shall be updated continuously throughout the Project, as additional materials are added to/brought to the Project site.

1.4 SAFETY AND FIRST AID

A. The Prime Contractor shall at all times exercise caution of his/her operations and shall be responsible for the safety and protection of all persons on or about the site arising out of or relating to his/her Work. All hazards shall be avoided or guarded in accordance with the provisions of the Manual of Accident Prevention in Construction of the AGCA, unless such provisions contravene local law. The safety provisions of all applicable laws, codes and ordinances shall be observed.

B. The Prime Contractor shall provide and maintain at the Site, at each location where work is in progress, as part of his/her plant, an approved first aid kit. Ready access thereto shall be provided at all times when persons are employed on the work site.

C. The Prime Contractor shall take due precautions against infectious diseases and shall arrange for the immediate isolation and removal from the Site of any employee who becomes ill or is injured while engaged on the work site.

D. The Prime Contractor shall, upon request of the Architect, immediately correct all conditions that constitute a clear and present danger to persons as interpreted by the Architect. If such danger is not so corrected, the Owner or the Architect will employ other persons to do such work and the expense thereof shall be deducted from any monies due or to become due to the Prime Contractor.

E. Clean up of the Prime Contractor's, and/or their subcontractor's, materials and/or debris shall be deemed a safety and health issue.

1.5 ACCIDENTS AND ACCIDENT REPORTS

A. Notify Architect immediately of any accidents involving Prime Contractor, subcontractor or supplier personnel on site.

B. Within 24 hours of the occurrence, the Prime Contractor shall submit a written accident report, to the Architect, fully detailing the occurrence.

1.6 TOOL BOX SAFETY MEETINGS

A. The Prime Contractor shall hold weekly toolbox safety meetings with his/her own workers. Records of these meetings shall be forwarded to the Owner, through the Construction Site Coordinator's office, each week.

1. Failure to comply with this requirement shall result in Applications for Payment not being reviewed and processed.

1.7 OTHER SAFETY REQUIREMENTS

A. All prime contractors are required to perform the following safety measures on all project sites and construction zones/areas.
1. Hard hats, safety googles/glasses, and safety vests are mandatory and shall be worn at all times by all persons on the project.
2. All construction workers shall wear photo ID at all times and be visible on the person, failure to do so will result to that employee being asked to leave until such ID has been worn visible.
3. All visitors are required to check in with the CM for any reason and not allowed on site without proper PPE.
4. Any workers not wearing PPE will asked to stop working until PPE is appropriate donned. All second offense of said worker, he /she will be removed from site and all district work. All contractors are required to keep the work areas clean and safe from all hazards at all times.
5. Site contractor is to review provided phasing/logistics plan and assume at a minimum quantities of site fencing/protections indicated in those plans be provided in their contract.
6. All fencing shall have construction sign at every 50 feet stating ''CONSTRUCTION AREA; NO UNAUTHORIZED PERSONAL; NO TRESSPASSING. and continuous scrim.
7. All site contractors are required to clean up outside of their chain link and gated fenced in work zone(s) where construction debris may have fallen on a non-work zone area. Sand bags are not considered anchoring.
8. Where driven anchoring of fencing is not feasible due to protection of installed finishes and existing conditions, contractor shall provide YODOCK barriers around construction sites with integral fence panels above.
9. Contractor shall ensure that all chain link construction fence/barriers around the work zone is closed off to any adjacent structure, building, etc. ending the fence perimeter work zone at all times. These areas are the be checked 3 times a day, once before the start of work, mid shift and before the contractor leaves at the end of shift.
10. All site contractors are to have a 24-hour available emergency contact person available to fix and correct areas that have been compromised after hours, weekends and holidays. Upon notification of such incident the contractor is

required to deploy workers as necessary within 1-2 hours maximum to be on site to correct such matters reported.

11. All gas-powered equipment shall have the spark plugs removed at the end of each day so that these cannot be started in any way.
12. All LULLS, man lifts, and all equipment shall not have keys left inside and all booms shall be lowered when not in use.
13. All site contractors shall have a dedicated site safety experienced (Manager) person responsible for the site safety with a minimum of 30 hours OSHA training certificate. This person shall be responsible to ensure that the perimeter work zones are free from any fallen construction and trip hazards at the minimum of the 3 field surveys as stated in item 9 above and as noted elsewhere in contract. . Site walk logs are to be submitted daily to the CM including safety status and any items found and corrected.
14. All dumpsters are to be fully surrounded with chain link fence if stored outside other fenced/barricaded work areas.
15. All safety observation reports issued to contractors shall be corrected immediately. If the contractor fails to respond and/or correct the condition(s) included in the safety observation report, that contractor will be subject to termination and charged by the District with all costs related to correcting the reported condition(s) and any other items related thereto.
16. All contractors are to conform to 155.5 SED Code.
17. All contractors are to submit their "tool box talks" weekly to the CM.
18. All contractors are to submit daily reports of their activities related to work performed, manpower, equipment onsite and all safety measures put in place that day and any maintenance/monitoring thereof.
19. All contractors are required to provide "egress plans" for both interior and exterior work for locations where work will close off any exits, corridors, pathways, roads, and any access way. These plans are to be provided in advance at least 2 months before work commences in that area, no work shall be started in any manner without approval of such plan. The failure to provide such plan for coordinating and scheduling will result into back charges to the prime(s) involved. These plans must include all locations and details where scaffolding, fencing and all temporary construction barriers are required.
20. All contractors are to provide their corporate safety manuals to the CM prior to commencement of any work. Under no circumstances can any field work can start without receipt of such manual. This shall be provided in a 3-ring binder in PDF format. Contractors shall maintain a copy on site.
21. All personnel who fail to wear the required PPE while onsite will be warned and directed to stop work until PPE is properly worn. In the event that an employee is warned a second time for failure to comply with PPE requirements, said employee will be removed from all New Rochelle School projects. If the company continues to fail with their employees not abiding by the safety contract requirements, that

contractor will be subject to termination for such endangerment of other workers and others.

22. All contractors are required to have a full time flagman(men) as needed at all times escorting construction vehicles into entrances and out of exits to the property/work zone. when . Flagman are required to escort construction vehicles to and from work areas to property lines and public streets. At every gate, the Prime Contractor shall post signage indicating contractor name and contact information including 24-hour emergency telephone number.
23. All contractors storing any materials and equipment on site shall be surrounded with chain link fencing.

END OF SECTION 013150

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SECTION 01 32 33 - PHOTOGRAPHIC DOCUMENTATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes administrative and procedural requirements for the following:

1. Preconstruction photographs.
2. Periodic construction photographs.
3. Final completion construction photographs.
    a. Name of Contractor.
    b. Date photograph was taken.
    c. Description of vantage point, indicating location, direction (by compass point), and elevation or story of construction.
    d. Unique sequential identifier keyed to accompanying key plan.

1.3 USAGE RIGHTS

A. Obtain and transfer copyright usage rights from photographer to Owner for unlimited reproduction of photographic documentation.

PART 2 - PRODUCTS

2.1 PHOTOGRAPHIC MEDIA

A. Digital Images: Provide images in JPG format, produced by a digital camera with minimum sensor size of 8 megapixels, and at an image resolution of not less than 3200 by 2400 pixels.

PART 3 - EXECUTION

3.1 CONSTRUCTION PHOTOGRAPHS

A. General: Take photographs using the maximum range of depth of field, and that are in focus, to clearly show the Work. Photographs with blurry or out-of-focus areas will not be accepted.

1. Maintain key plan with each set of construction photographs that identifies each photographic location.

B. Digital Images: Submit digital images exactly as originally recorded in the digital camera, without alteration, manipulation, editing, or modifications using image-editing software.

1. Date and Time: Include date and time in file name for each image.
2. Field Office Images: Maintain one set of images accessible in the field office at Project site, available at all times for reference. Identify images in the same manner as those submitted to Architect and Construction Manager.

C. Preconstruction Photographs: Before commencement of excavation take photographs of Project site and surrounding properties, including existing items to remain during construction, from different vantage points, as directed by Architect and Construction Manager.

1. Flag construction limits before taking construction photographs.
2. Take 20 photographs to show existing conditions adjacent to property before starting the Work.
3. Take 20 photographs of existing buildings either on or adjoining property to accurately record physical conditions at start of construction.
4. Take additional photographs as required to record settlement or cracking of adjacent structures, pavements, and improvements.

D. Periodic Construction Photographs: Take 20 photographs weekly, with timing each month adjusted to coincide with the cutoff date associated with each Application for Payment. Select vantage points to show status of construction and progress since last photographs were taken.

E. Architect and Construction Manager-Directed Construction Photographs: From time to time, Architect and Construction Manager will instruct photographer about number and frequency of photographs and general directions on vantage points. Select actual vantage points and take photographs to show the status of construction and progress since last photographs were taken.

F. Time-Lapse Sequence Construction Photographs: Take 20 photographs as indicated, to show status of construction and progress since last photographs were taken.

1. Frequency: Take photographs weekly, with timing each month adjusted to coincide with the cutoff date associated with each Application for Payment.
2. Vantage Points: Following suggestions by Architect and Construction Manager and Contractor, photographer to select vantage points. During each of the following construction phases, take not less than two of the required shots from same vantage point each time to create a time-lapse sequence as follows:

a. Commencement of the Work, through completion of subgrade construction.
b. Above-grade structural framing.
c. Exterior building enclosure.
d. Interior Work, through date of Substantial Completion.

G. Final Completion Construction Photographs: Take 20 color photographs after date of Substantial Completion for submission as project record documents. Architect and Construction Manager will inform photographer of desired vantage points.

1. Do not include date stamp.

END OF SECTION 01 32 33

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SECTION 013300 - ELECTRONIC SUBMITTAL PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section includes requirements for the submittal schedule and administrative and procedural requirements for submitting Shop Drawings, Product Data, Samples, and other submittals.

B. Related Sections:

1. Division 01 Section “Payment Procedures” for submitting Applications for Payment and the schedule of values.

2. Division 01 Section “Construction Progress Documentation” for submitting schedules and reports, including Contractor’s construction schedule.

3. Division 01 Section “Operation and Maintenance Data” for submitting operation and maintenance manuals.

1.3 DEFINITIONS

A. Action Submittals: Written and graphic information and physical samples that require Architect’s responsive action. Action submittals are those submittals indicated in individual Specification Sections as action submittals.

B. Informational Submittals: Written and graphic information and physical samples that do not require Architect’s responsive action. Submittals may be rejected for not complying with requirements. Informational submittals are those submittals indicated in individual Specification Sections as informational submittals.

C. File Transfer Protocol (FTP): Communications protocol that enables transfer of files to and from another computer over a network and that serves as the basis for standard Internet protocols. An FTP site is a portion of a network located outside of network firewalls within which internal and external users are able to access files.

D. Portable Document Format (PDF): An open standard file format licensed by Adobe Systems used for representing documents in a device-independent and display resolution-independent fixed-layout document format.

1.4 ACTION SUBMITTALS

A. Submittal Schedule: Submit a schedule of submittals, arranged in chronological order by dates required by construction schedule. Include time required for review, ordering, manufacturing, fabrication, and delivery when establishing dates. Include additional time required for making corrections or modifications to submittals noted by the Architect and additional time for handling and reviewing submittals required by those corrections.

1. Coordinate submittal schedule with list of subcontracts, the schedule of values, and Contractor's construction schedule.

2. Initial Submittal: Submit concurrently with start-up construction schedule. Include submittals required during the first 60 days of construction. List those submittals required to maintain orderly progress of the Work and those required early because of long lead time for manufacture or fabrication.

3. Final Submittal: Submit concurrently with the first complete submittal of Contractor's construction schedule.

    a. Submit revised submittal schedule to reflect changes in current status and timing for submittals.

4. Format: Arrange the following information in a tabular format:

    a. Scheduled date for first submittal.
    b. Specification Section number and title.
    c. Submittal category: Action, informational.
    d. Name of subcontractor.
    e. Description of the Work covered.
    f. Scheduled date for Architect's final release or approval.
    g. Scheduled dates for purchasing.
    h. Scheduled dates for installation.
    i. Activity or event number.

1.5 SUBMITTAL ADMINISTRATIVE REQUIREMENTS

A. Architect's Digital Data Files: Electronic copies of REVIT Drawings of the Contract Drawings will be provided by Architect for Contractor's use in preparing submittals.

1. Architect will furnish Contractor one set of digital data drawing files of the Contract Drawings for use in preparing Shop Drawings and Project record drawings.

    a. Architect makes no representations as to the accuracy or completeness of digital data drawing files as they relate to the Contract Drawings.

    b. Digital Drawing Software Program: The Contract Drawings are available in REVIT Version 2021.

    c. Contractor shall execute a data licensing agreement that will be supplied by Architect.

    d. The following plot files will by furnished for each appropriate discipline:

        1) Floor plans.

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. Submit all submittal items required for each Specification Section concurrently unless partial submittals for portions of the Work are indicated on approved submittal schedule.

3. Submit action submittals and informational submittals required by the same Specification Section as separate packages under separate transmittals.

4. 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. Processing Time: Allow 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 15 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 15 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 21 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 15 days for review of each submittal. Submittal will be returned to Architect before being returned to Contractor.

D. Identification and Information: Identify and incorporate information in each electronic submittal file as follows:

1. Assemble complete submittal package into a single indexed file with links enabling navigation to each item.

2. Name file with submittal number or other unique identifier, including revision identifier.

   a. File name shall use project identifier and Specification Section number followed by a decimal point and then a sequential number (e.g., BR-061000.01 or MH-061000.01). Resubmittals shall include an alphabetic suffix after another decimal point (e.g., BR-061000.01.A or MH-061000.01.A).

3. Provide means for insertion to permanently record Contractor's review and approval markings and action taken by Architect.

4. Include the following information on an inserted cover sheet:

   a. Project name.
   b. Date.
   c. Name and address of Architect.
   d. Name of Contractor.

e. Name of firm or entity that prepared submittal.
f. Name of subcontractor.
g. Name of supplier.
h. Name of manufacturer.
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. Related physical samples submitted directly.
m. Other necessary identification.

5. Include the following information as keywords in the electronic file metadata:

a. Project name.
b. Number and title of appropriate Specification Section.
c. Manufacturer name.
d. Product name.

E. Options: Identify options requiring selection by the Architect.

F. Deviations: Identify deviations from the Contract Documents on submittals.

G. Transmittal: Assemble each submittal individually and appropriately for transmittal and handling. Transmit each submittal using a transmittal form. Contracting Officer 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. Indication of full or partial submittal.
j. Drawing number and detail references, as appropriate.
k. Transmittal number, numbered consecutively.
l. Submittal and transmittal distribution record.
m. Remarks.
n. Signature of transmitter.

2. 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 identification information as related submittal.

H. 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.
3. Resubmit submittals until they are marked with approval notation from Architect's action stamp.

I. 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.

J. Use for Construction: Use only final submittals that are marked with approval notation from Architect's action stamp.

PART 2 - PRODUCTS

2.1 SUBMITTAL PROCEDURES

A. General Submittal Procedure Requirements: Prepare and submit submittals required by individual Specification Sections. Types of submittals are indicated in individual Specification Sections.

1. Submit electronic submittals via email as PDF electronic files.

    a. Architect, through Contracting Officer, will return annotated file. Annotate and retain one copy of file as an electronic Project record document file.

2. Closeout Submittals and Maintenance Material Submittals: Comply with requirements specified in Division 01 Section "Closeout Procedures."

3. Certificates and Certifications Submittals: Provide a 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.

    a. Provide a digital signature with digital certificate on electronically-submitted certificates and certifications where indicated.
    b. Provide a notarized statement on original paper copy certificates and certifications where indicated.

4. Test and Inspection Reports Submittals: Comply with requirements specified in Division 01 Section "Quality Requirements."

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 published 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 the following information, as applicable:

    a. Manufacturer's catalog cuts.
    b. Manufacturer's product specifications.
    c. Standard color charts.
    d. Statement of compliance with specified referenced standards.
    e. Testing by recognized testing agency.
    f. Application of testing agency labels and seals.
    g. Notation of coordination requirements.
    h. Availability and delivery time information.

4. For equipment, include the following in addition to the above, as applicable:

a. Wiring diagrams showing factory-installed wiring.
b. Printed performance curves.
c. Operational range diagrams.
d. Clearances required to other construction, if not indicated on accompanying Shop Drawings.

5. Submit Product Data before or concurrent with Samples.

6. Submit Product Data in the following format:

a. PDF electronic file.

C. 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, unless submittal based upon Architect's digital data drawing files is otherwise permitted.

1. Preparation: Fully illustrate requirements in the Contract Documents. Include the following information, as applicable:

a. Identification of products.
b. Schedules.
c. Compliance with specified standards.
d. Notation of coordination requirements.
e. Notation of dimensions established by field measurement.
f. Relationship and attachment to adjoining construction clearly indicated.
g. Seal and signature of professional engineer if specified.

2. Sheet Size: Except for templates, patterns, and similar full-size drawings, submit Shop Drawings on sheets at least 8-1/2 by 11 inches (215 by 280 mm) but no larger than 30 by 42 inches (750 by 1067 mm).

3. Submit Shop Drawings in the following format:

a. PDF electronic file.

D. 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.

1. Transmit Samples that contain multiple, related components such as accessories together in one submittal package.

2. Identification: Attach label on unexposed side of Samples that includes the following:

a. Generic description of Sample.
b. Product name and name of manufacturer.
c. Sample source.
d. Number and title of applicable Specification Section.

3. 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.

a. 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.

b. Samples not incorporated into the Work, or otherwise designated as Government's property, are the property of Contractor.

4. 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.

   a. Number of Samples: Submit one full set(s) of available choices where color, pattern, texture, or similar characteristics are required to be selected from manufacturer's product line. Architect, through Contracting Officer, will return submittal with options selected.

5. Samples for Verification: Submit full-size units or Samples of size indicated, prepared from same material to be used for the Work, cured and finished in manner specified, and physically identical with material or product proposed for use, and that show full range of color and texture variations expected. Samples include, but are not limited to, the following: partial sections of manufactured or fabricated components; small cuts or containers of materials; complete units of repetitively used materials; swatches showing color, texture, and pattern; color range sets; and components used for independent testing and inspection.

   a. Number of Samples: Submit three sets of Samples. Architect will retain one Sample set; remainder will be returned. Mark up and retain one returned Sample set as a Project record sample.

      1) Submit a single Sample where assembly details, workmanship, fabrication techniques, connections, operation, and other similar characteristics are to be demonstrated.
      2) If variation in color, pattern, texture, or other characteristic is inherent in material or product represented by a Sample, submit at least three sets of paired units that show approximate limits of variations.

E. Product Schedule: 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:

   1. Type of product. Include unique identifier for each product indicated in the Contract Documents.

   2. Manufacturer and product name, and model number if applicable.

   3. Number and name of room or space.

   4. Location within room or space.

   5. Submit product schedule in the following format:

      a. PDF electronic file.

F. Contractor's Construction Schedule: Comply with requirements specified in Division 01 Section "Construction Progress Documentation."

G. Application for Payment: Comply with requirements specified in Division 01 Section "Payment Procedures."

H. Schedule of Values: Comply with requirements specified in Division 01 Section "Payment Procedures."

I. 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:

1. Name, address, and telephone number of entity performing subcontract or supplying products.
2. Number and title of related Specification Section(s) covered by subcontract.
3. Drawing number and detail references, as appropriate, covered by subcontract.
4. Submit subcontract list in the following format:
    a. PDF electronic file.

J. Qualification Data: Prepare written information that demonstrates capabilities and experience of firm or person. Include lists of completed projects with project names and addresses, contact information of architects and owners, and other information specified.

K. Welding Certificates: Prepare written certification that welding procedures and personnel comply with requirements in the Contract Documents. Submit record of Welding Procedure Specification and Procedure Qualification Record on American Welding Society (AWS) forms. Include names of firms and personnel certified.

L. Installer Certificates: Submit 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.

M. Manufacturer Certificates: Submit written statements on manufacturer's letterhead certifying that manufacturer complies with requirements in the Contract Documents. Include evidence of manufacturing experience where required.

N. Product Certificates: Submit written statements on manufacturer's letterhead certifying that product complies with requirements in the Contract Documents.

O. Material Certificates: Submit written statements on manufacturer's letterhead certifying that material complies with requirements in the Contract Documents.

P. Material Test Reports: Submit 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.

Q. Product Test Reports: Submit 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.

R. Research Reports: Submit written evidence, from a model code organization acceptable to authorities having jurisdiction, that product complies with building code in effect for Project. Include the following information:

1. Name of evaluation organization.
2. Date of evaluation.
3. Time period when report is in effect.
4. Product and manufacturers' names.
5. Description of product.
6. Test procedures and results.
7. Limitations of use.

S. Schedule of Tests and Inspections: Comply with requirements specified in Division 01 Section "Quality Requirements."

T. Field Test Reports: Submit reports 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.

U. Maintenance Data: Comply with requirements specified in Division 01 Section "Operation and Maintenance Data."

PART 3 - EXECUTION

3.1 CONTRACTOR'S REVIEW

A. Action and Informational Submittals: 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 Contracting Officer.

B. Project Closeout and Maintenance/Material Submittals: Refer to requirements in Division 01 Section "Closeout Procedures."

C. 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.

3.2 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, as follows:

1. Approved: Where the submittal is marked "Approved," the Work covered by the submittal may proceed provided it complies with the Contract Documents. Final acceptance will depend on that compliance.

2. Approved As Corrected (do not resubmit): Where the submittal is marked "Approved As Corrected" the work covered by the submittal may proceed provided it complies both with Architect's notations and corrections on the submittal and the Contract Documents. Final acceptance will depend on that compliance.

3. Revise and Resubmit (see notes): Where the submittal is marked "Revise and Resubmit" do not proceed with the Work covered by the submittal, including purchasing, fabrication, delivery, or other activity for the product submitted. Revise and prepare a new submittal according to Architect's notations and corrections.

4. Rejected: Where the submittal is marked "Rejected", do not proceed with the Work covered by the submittal. Prepare a new submittal for a product that complies with the Contract Documents.

C. Informational Submittals: Architect will review each submittal and will not return it, or will return it if it does not comply with requirements. Architect will forward each submittal to appropriate party.

5. Submit Specified Item: Where the submittal is marked “Submit Specified Item”, do not proceed with the Work covered by the submittal. Prepare a new submittal for a product that complies with the Contract Documents.

D. Partial submittals prepared for a portion of the Work will be reviewed when use of partial submittals has received prior approval from Architect.

E. Incomplete submittals are not acceptable, will be considered nonresponsive, and will be returned without review.

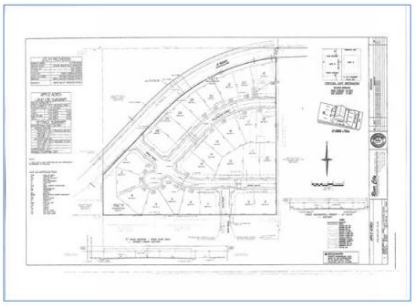
F. Submittals not required by the Contract Documents may not be reviewed and may be discarded.

END OF SECTION 013300

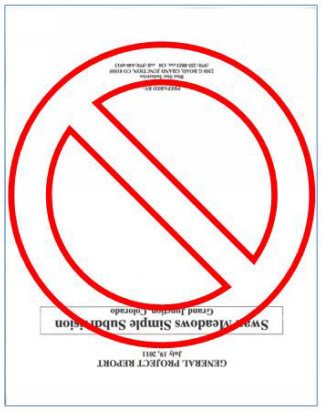
Document Orientation Guide

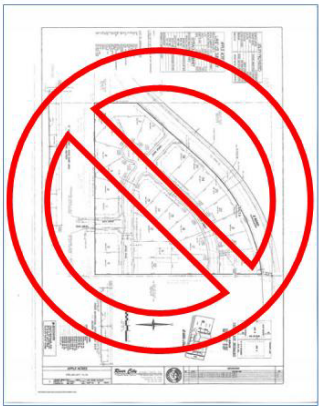
Correct Orientation:





Incorrect Orientation:





No:_____

SUBMITTAL COVERSHEET
Nanuet UFSD –Elevator Addition Project

Architect:
KSQ Architects
215 W 40th Street,15th Floor
New York, NY 10018

Owner:
Nanuet Union Free School District
101 Church Street
Nanuet, NY 10954

Construction Manager:
Jacobs
One Penn Plaza, 54th floor
New York, NY 10019

Contractor: _____ **Contract:** _____

Address: _____ **Telephone:** _____

_____ **Fax:** _____

School Name: _____

Type of Submittal: **Re-submittal: [ ] No [ ] Yes**

[ ] Shop Drawings **[ ]** Product Data **[ ]** Schedule **[ ]** Sample **[ ]** _____
[ ] Test Report **[ ]** Certificate **[ ]** Color Sample **[ ]** Warranty **[ ]** _____

Submittal Description:

Product Name: _____

Manufacturer: _____

Subcontractor/ Supplier: _____

References:

Spec. Section No.: _____ **Drawing No(s):** _____

Paragraph: _____ **Rm. or Detail No(s):** _____

Architect's/ Engineer's Review Stamp	Contractor Review Statement: These documents have been checked for accuracy and coordinated with job conditions and Contract requirements by this office and have been found to comply with the provisions of the Contract Documents. Name: Date: Company Name:

_____
_____
_____
_____
_____

Remarks:

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SECTION 01 4200 – REFERENCES STANDARDS AND DEFINITIONS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 DEFINITIONS

A. General: Basic contract definitions are included in the Conditions of the Contract.

B. "Indicated": The term "indicated" refers to graphic representations, notes, or schedules on the Drawings, or other paragraphs or Schedules in the Specifications, and similar requirements in the Contract Documents. Terms such as "shown," "noted," "scheduled," and "specified" are used to help the reader locate the reference. Location is not limited.

C. "Directed": Terms such as "directed," "requested," "authorized," "selected," "approved," "required," and "permitted" mean directed by the Architect, requested by the Architect, and similar phrases.

D. "Approved": The term "approved," when used in conjunction with the Architect's action on the Contractor's submittals, applications, and requests, is limited to the Architect's duties and responsibilities as stated in the Conditions of the Contract.

E. "Regulations": The term "regulations" includes laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, as well as rules, conventions, and agreements within the construction industry that control performance of the Work.

F. "Furnish": The term "furnish" means supply and deliver to the Project Site, ready for unloading, unpacking, assembly, installation, and similar operations.

G. "Install": The term "install" describes operations at the Project Site including the actual unloading, unpacking, assembly, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.

H. "Provide": The term "provide" means to furnish and install, complete and ready for the intended use.

I. "Installer": An installer is the Contractor or another entity engaged by the Contractor, either as an employee, subcontractor, or contractor of lower tier, to perform a particular construction activity, including installation, erection, application, or similar operations. Installers are required to be experienced in the operations they are engaged to perform.

1. The term "experienced," when used with the term "installer," means having a minimum of 5 previous projects similar in size and scope to this Project, being familiar with the special requirements indicated, and having complied with requirements of authorities having jurisdiction.

2. Trades: Using terms such as "carpentry" does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter." It also does not imply that requirements specified apply exclusively to tradespersons of the corresponding generic name.

3. Assigning Specialists: Certain Sections of the Specifications require that specific construction activities shall be performed by specialists who are recognized exp

erts in those operations. The specialists must be engaged for those activities, and their assignments are requirements over which the Contractor has no option. However, the ultimate responsibility for fulfilling contract requirements remains with the Contractor.

a. This requirement shall not be interpreted to conflict with enforcing building codes and similar regulations governing the Work. It is also not intended to interfere with local trade-union jurisdictional settlements and similar conventions.

J. "Project Site" is the space available to the Contractor for performing construction activities, either exclusively or in conjunction, with others performing other work as part of the Project. The extent of the Project Site is shown on the Drawings and may or may not be identical with the description of the land on which the Project is to be built.

K. "Testing Agencies": A testing agency is an independent entity engaged to perform specific inspections or tests, either at the Project Site or elsewhere, and to report on and, if required, to interpret results of those inspections or tests.

1.3 SPECIFICATION FORMAT AND CONTENT EXPLANATION

A. Specification Format: These Specifications are organized into Divisions and Sections based on CSI's 33-Division format and MasterFormat's numbering system.

B. Specification Content: This Specification uses certain conventions regarding the style of language and the intended meaning of certain terms, words, and phrases when used in particular situations or circumstances. These conventions are explained as follows:

1. Abbreviated Language: Language used in Specifications and other Contract Documents is abbreviated. Words and meanings shall be interpreted as appropriate. Words implied, but not stated, shall be interpolated as the sense requires. Singular words will be interpreted as plural and plural words interpreted as singular where applicable as the context of the Contract Documents indicates.
2. Streamlined Language: The Specifications generally use the imperative mood and streamlined language. Requirements expressed in the imperative mood are to be performed by the Contractor. At certain locations in the Text, subjective language is used for clarity to describe responsibilities that must be fulfilled indirectly by the Contractor or by others when so noted.

a. The words "shall be" are implied where a colon (:) is used within a sentence or phrase.

1.4 INDUSTRY STANDARDS

A. Applicability of Standards: Except where the Contract Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Contract Documents to the extent referenced. Such standards are made a part of the Contract Documents by reference.

B. Publication Dates: Comply with the standards in effect as of the date of the Contract Documents.

C. Conflicting Requirements: Where compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer to the Architect bef

ore proceeding for a decision on requirements that are different but apparently equal, and where it is uncertain which requirement is the most stringent.

1. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum acceptable. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of the requirements. Refer uncertainties to the Architect for a decision before proceeding.

D. Copies of Standards: Each entity engaged in construction on the Project is required to be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Contract Documents.

1. Where copies of standards are needed to perform a required construction activity, the Contractor shall obtain copies directly from the publication source.

E. Abbreviations and Names: Trade association names and titles of general standards are frequently abbreviated. Where such acronyms or abbreviations are used in the Specifications or other Contract Documents, they mean the recognized name of the trade association, standards-generating organization, authorities having jurisdiction, or other entity applicable to the context of the text provision. Refer to Gale Research Co.'s "Encyclopedia of Associations," available in most libraries.

F. Abbreviations and Names: Trade association names and titles of general standards are frequently abbreviated. The following acronyms or abbreviations, as referenced in the Contract Documents, are defined to mean the associated names. Names and addresses are subject to change and are believed, but are not assured, to be accurate and up-to-date as of the date of the Contract Documents.

AA	Aluminum Association 900 19th St., NW, Suite 300 Washington, DC 20006	(202) 862-5104
AABC	Associated Air Balance Council 1518 K St., NW Washington, DC 20005	(202) 737-0202
AAMA	American Architectural Manufacturers Assoc. 1540 E. Dundee Road, Suite 310 Palatine, IL 60067	(708) 202-1350
AAN	American Association of Nurserymen 1250 Eye St., NW, Suite 500 Washington, DC 20005	(202) 789-2900
AASHTO	American Association of State Highway and Transportation Officials 444 North Capitol St., Suite 24 Washington, DC 20001	(202) 624-5800
AATCC	American Association of Textile Chemists and Colorists P.O. Box 12215 Research Triangle Park, NC 27709-2215	(919) 549-8141

ABMA	American Bearing Manufacturers Assoc. 1101 Connecticut Ave., NW, Suite 700 Washington, DC 20036	(202) 429-5155
ACI	American Concrete Institute P.O. Box 19150 Detroit, MI 48219	(313) 532-2600
ACIL	American Council of Independent Laboratories 1629 K St., NW Washington, DC 20006	(202) 887-5872
ACPA	American Concrete Pipe Assoc. 8300 Boone Blvd., Suite 400 Vienna, VA 22182	(703) 821-1990
ADC	Air Diffusion Council One Illinois Center, Suite 200 111 East Wacker Dr. Chicago, IL 60601-4298	(312) 616-0800
AFBMA	Anti-Friction Bearing Manufacturers Assoc. (Now ABMA)	
AFPA	American Forest and Paper Assoc. (American Wood Council of the) 2nd Floor, 1250 Connecticut Ave., NW Washington, DC 20036	(202) 463-2455
AGA	American Gas Assoc. 1515 Wilson Blvd. Arlington, VA 22209	(703) 841-8400
AHA	American Hardboard Assoc. 1210 W. Northwest Highway Palatine, IL 60067	(708) 934-8800
AHAM	Association of Home Appliance Manufacturers 20 N. Wacker Dr., Suite 1500 Chicago, IL 60606	(312) 984-5800
AI	Asphalt Institute Research Park Dr. P.O. Box 14052 Lexington, KY 40512-4052	(606) 288-4960
AIA	The American Institute of Architects 1735 New York Ave., NW Washington, DC 20006	(202) 626-7300
AIA	American Insurance Assoc. 1130 Connecticut Ave., NW, Suite 1000 Washington, DC 20036	(202) 828-7100

AIHA	American Industrial Hygiene Assoc. 2700 Prosperit Ave., Suite 250 Fairfax, VA 22031	(703) 849-8888
AISC	American Institute of Steel Construction One East Wacker Dr., Suite 3100 Chicago, IL 60601-2001	(312) 670-2400
AISI	American Iron and Steel Institute 1101 17th St., NW Washington, DC 20036-4700	(202) 452-7100
AITC	American Institute of Timber Construction 7012 S. Revere Parkway, #140 Englewood, CO 80112	(303) 792-9559
ALI	Associated Laboratories, Inc. c/o HOH Chemicals 500 S. Vermont St. Palatine, IL 60067	(708) 358-7400
ALSC	American Lumber Standards Committee P.O. Box 210 Germantown, MD 20875	(301) 972-1700
AMCA	Air Movement and Control Assoc. 30 W. University Dr. Arlington Heights, IL 60004-1893	(708) 394-0150
ANSI	American National Standards Institute 11 West 42nd St., 13th Floor New York, NY 10036	(212) 642-4900
AOAC	AOAC International 2200 Wilson Blvd., Suite 400 Arlington, VA 22201-3301	(703) 522-3032
AOSA	Association of Official Seed Analysts California State Seed Laboratory 1220 N St. Sacramento, CA 95814	(916) 445-4521
APA	American Plywood Assoc. P.O. Box 11700 Tacoma, WA 98411	(206) 565-6600
API	American Petroleum Institute 1220 L St., NW Washington, DC 20005	(202) 682-8000
ARI	Air-Conditioning and Refrigeration Institute 4301 Fairfax Dr., Suite 425 Arlington, VA 22203	(703) 524-8800

ARMA	Asphalt Roofing Manufacturers Assoc. 6000 Executive Dr., Suite 201 Rockville, MD 20852-3803	(301) 231-9050
ASA	Acoustical Society of America 500 Sunnyside Blvd. Woodbury, NY 11797	(516) 576-2360
ASC	Adhesive and Sealant Council 1627 K St., NW, Suite 1000 Washington, DC 20006-1707	(202) 452-1500
ASHRAE	American Society of Heating, Refrigerating and Air-Conditioning Engineers 1791 Tullie Circle, NE Atlanta, GA 30329	(404) 636-8400
ASME	American Society of Mechanical Engineers 345 East 47th St. New York, NY 10017	(212) 705-7722
ASPA	American Sod Producers Assoc. 1855-A Hicks Rd. Rolling Meadows, IL 60008	(708) 705-9898
ASPE	American Society of Plumbing Engineers 3617 Thousand Oaks Blvd., Suite 210 Westlake, CA 91362	(805) 495-7120
ASSE	American Society of Sanitary Engineering P.O. Box 40362 Bay Village, OH 44140	(216) 835-3040
ASTM	American Society for Testing and Materials 1916 Race St. Philadelphia, PA 19103-1187	(215) 299-5400
ATIS	Alliance for Telecommunications Industry Solutions 1200 G St., NW, Suite 500 Washington, DC 20005	(202) 628-6380
AWCMA	American Window Covering Manufacturers Assoc. (Now WCMA)	
AWI	Architectural Woodwork Institute P.O. Box 1550 13924 Braddock Rd., No. 100 Centerville, VA 22020	(703) 222-1100
AWPA	American Wood Preservers' Assoc. P.O. Box 286 Woodstock, MD 21163-0286	(410) 465-3169
AWPB	American Wood Preservers' Bureau (This organization is now defunct.)	

AWS	American Welding Society 550 LeJeune Rd., NW Miami, FL 33126	(305) 443-9353
AWWA	American Water Works Assoc. 6666 W. Quincy Ave. Denver, CO 80235	(303) 794-7711
BANC	Brick Association of North Carolina P.O. Box 13290 Greensboro, NC 27415-3290	(910) 273-5566
BHMA	Builders' Hardware Manufacturers Assoc. 355 Lexington Ave., 17th Floor New York, NY 10017	(212) 661-4261
BIA	Brick Institute of America 11490 Commerce Park Dr. Reston, VA 22091	(703) 620-0010
BIFMA	The Business and Institutional Furniture Manufacturer's Association 2680 Horizon Dr., SE, Suite A1 Grand Rapids, MI 49546-7500	(616) 285-3963
CAGI	Compressed Air and Gas Institute c/o Thomas Associates, Inc. 1300 Sumner Ave. Cleveland, OH 44115-2851	(216) 241-7333
CAUS	Color Association of the United States 409 W. 44th St. New York, NY 10036	(212) 582-6884
CBHF	State of California, Dept. of Consumer Affairs Bureau of Home Furnishings and Thermal Insulation 3485 Orange Grove Ave. North Highland, CA 95660-5595	(800) 952-5210
CBM	Certified Ballast Manufacturers Assoc. 1422 Euclid Ave., Suite 402 Cleveland, OH 44115-2851	(216) 241-0711
CCC	Carpet Cushion Council P.O. Box 546 Riverside, CT 06878	(203) 637-1312
CDA	Copper Development Association Inc. 260 Madison Ave., 16th Floor New York, NY 10016	(212) 251-7200
CFFA	Chemical Fabrics & Film Association, Inc. c/o Thomas Associates, Inc. 1300 Sumner Ave.	

	Cleveland, OH 44115-2851	(216) 241-7333
CGA	Compressed Gas Assoc. 1725 Jefferson Davis Highway, Suite 1004 Arlington, VA 22202-4100	(703) 412-0900
CISCA	Ceiling and Interior Systems Construction Assoc. 579 W. North Ave., Suite 301 Elmhurst, IL 60126	(708) 833-1919
CISPI	Cast Iron Soil Pipe Institute 5959 Shallowford Rd., Suite 419 Chattanooga, TN 37421	(615) 892-0137
CRI	Carpet and Rug Institute P.O. Box 2048 Dalton, GA 30722	(706) 278-3176
CRSI	Concrete Reinforcing Steel Institute 933 N. Plum Grove Rd. Schaumburg, IL 60173	(708) 517-1200
CTI	Ceramic Tile Institute of America 12061 West Jefferson Blvd. Culver City, CA 90230	(310) 574-7800
DHI	Door and Hardware Institute 14170 Newbrook Dr. Chantilly, VA 22021-2223	(703) 222-2010
DIPRA	Ductile Iron Pipe Research Assoc. 245 Riverchase Parkway East, Suite O Birmingham, AL 35244	(205) 988-9870
DLPA	Decorative Laminate Products Assoc. 13924 Braddock Rd. Centreville, VA 22020	(800) 684-3572
ECSA	Exchange Carriers Standards Assoc. (Now ATIS)	
EIA	Electronic Industries Assoc. 2001 Pennsylvania Ave., NW Washington, DC 20006-1813	(202) 457-4900
EIMA	EIFS Industry Manufacturers Assoc. 2759 State Road 580, Suite 112 Clearwater, FL 34621	(813) 726-6477
EJMA	Expansion Joint Manufacturers Assoc. 25 N. Broadway Tarrytown, NY 10591	(914) 332-0040
ETL	ETL Testing Laboratories, Inc. P.O. Box 2040 3933 Route 11, Industrial Park	

	Cortland, NY 13045	(607) 753-6711
FCI	Fluid Controls Institute P.O. Box 9036 Morristown, NJ 07960	(201) 829-0990
FCIB	Floor Covering Installation Board 310 Holiday Ave. Dalton, GA 30720	(706) 226-5488
FGMA	Flat Glass Marketing Assoc. White Lakes Professional Bldg. 3310 S.W. Harrison St. Topeka, KS 66611-2279	(913) 266-7013
FM	Factory Mutual Systems 1151 Boston-Providence Turnpike P.O. Box 9102 Norwood, MA 02062	(617) 762-4300
FTI	Facing Tile Institute P.O. Box 8880 Canton, OH 44711	(216) 488-1211
GA	Gypsum Association 810 First St., NE, Suite 510 Washington, DC 20002	(202) 289-5440
HEI	Heat Exchange Institute c/o Thomas Associates, Inc. 1300 Sumner Ave. Cleveland, OH 44115-2851	(216) 241-7333
HI	Hydronics Institute P.O. Box 218 35 Russo Place Berkeley Heights, NJ 07922	(908) 464-8200
HI	Hydraulic Institute 9 Sylvan Way Parsippany, NJ 07054-3802	(201) 267-9700
HMA	Hardwood Manufacturers Assoc. 400 Penn Center Blvd. Pittsburgh, PA 15235	(412) 829-0770
HPVA	Hardwood Plywood and Veneer Assoc. 1825 Michael Farraday Dr. P.O. Box 2789 Reston, VA 22090	(703) 435-2900
IBD	Institute of Business Designers 341 Merchandise Mart Chicago, IL 60654	(312) 467-1950

ICEA	Insulated Cable Engineers Association, Inc. P.O. Box 440 South Yarmouth, MA 02664	(508) 394-4424
IEC	International Electrotechnical Commission (Available from ANSI) 1430 Broadway New York, NY 10018	(212) 354-3300
IEEE	Institute of Electrical and Electronic Engineers 345 E. 47th St. New York, NY 10017	(212) 705-7900
IESNA	Illuminating Engineering Society of North America 345 E. 47th St. New York, NY 10017	(212) 705-7913
IGCC	Insulating Glass Certification Council c/o ETL Testing Laboratories, Inc. P.O. Box 2040 Route 11, Industrial Park Cortland, NY 13045	(607) 753-6711
ILI	Indiana Limestone Institute of America Stone City Bank Building, Suite 400 Bedford, IN 47421	(812) 275-4426
IMSA	International Municipal Signal Assoc. 165 E. Union St. Newark, NY 14513	(315) 331-2182
IRI	Industrial Risk Insurers P.O. Box 5010 85 Woodland St. Hartford, CT 06102-5010	(203) 520-7300
ISA	Instrument Society of America P.O. Box 12277 67 Alexander Dr. Research Triangle Park, NC 27709	(919) 549-8411
KCMA	Kitchen Cabinet Manufacturers Assoc. 1899 Preston White Dr. Reston, VA 22091-4326	(703) 264-1690
LIA	Lead Industries Association, Inc. 295 Madison Ave. New York, NY 10017	(212) 578-4750
LPI	Lightning Protection Institute 3365 N. Arlington Heights Rd., Suite J Arlington Heights, IL 60004	(800) 488-6864
MBMA	Metal Building Manufacturer's Assoc.	

	c/o Thomas Associates, Inc. 1300 Sumner Ave. Cleveland, OH 44115-2851	(216) 241-7333
MCAA	Mechanical Contractors Association of America 1385 Piccard Dr. Rockville, MD 20850-4329	(301) 869-5800
MFMA	Maple Flooring Manufacturers Assoc. 60 Revere Dr., Suite 500 Northbrook, IL 60062	(708) 480-9138
MIA	Marble Institute of America 33505 State St. Farmington, MI 48335	(810) 476-5558
ML/SFA	Metal Lath/Steel Framing Assoc. (A Division of the National Association of Architectural Metal Manufacturers) 600 S. Federal St., Suite 400 Chicago, IL 60605	(312) 922-6222
MSS	Manufacturers Standardization Society of the Valve and Fittings Industry 127 Park St., NE Vienna, VA 22180	(703) 281-6613
NAA	National Arborist Assoc. The Meeting Place Mall Route 101, P.O. Box 1094 Amherst, NH 03031-1094	(603) 673-3311
NAAMM	National Association of Architectural Metal Manufacturers 600 S. Federal St., Suite 400 Chicago, IL 60605	(312) 922-6222
NAIMA	North American Insulation Manufacturers Assoc. 44 Canal Center Plaza, Suite 310 Alexandria, VA 22314	(703) 684-0084
NAPA	National Asphalt Pavement Assoc. NAPA Building 5100 Forbes Blvd. Lanham, MD 20706-4413	(301) 731-4748
NAPF	National Association of Plastic Fabricators (Now DLPA)	
NBGQA	National Building Granite Quarries Assoc. P.O. Box 482 Barre, VT 05641	(802) 476-3115

NBHA	National Builders Hardware Assoc. (Now DHI)	
NCMA	National Concrete Masonry Assoc. 2302 Horse Pen Rd. Herndon, VA 22071-3406	(703) 713-1900
NCPI	National Clay Pipe Institute P.O. Box 759 253-80 Center St. Lake Geneva, WI 53147	(414) 248-9094
NCRPM	National Council on Radiation Protection and Measurements 7910 Woodmont Ave., Suite 800 Bethesda, MD 20814	(301) 657-2652
NCSPA	National Corrugated Steel Pipe Association 1255 23rd St., NW, Suite 850 Washington, DC 20037	(202) 452-1700
NEC	National Electrical Code (from NFPA)	
NECA	National Electrical Contractors Assoc. 3 Bethesda Metro Center, Suite 1100 Bethesda, MD 20814	(301) 657-3110
NEII	National Elevator Industry, Inc. 185 Bridge Plaza, North Fort Lee, NJ 07024	(201) 944-3211
NEMA	National Electrical Manufacturers Assoc. 2101 L St., NW, Suite 300 Washington, DC 20037	(202) 457-8400
NETA	International Electrical Testing Assoc. P.O. Box 687 Morrison, CO 80465	(303) 697-8441
NFPA	National Fire Protection Assoc. One Batterymarch Park P.O. Box 9101 Quincy, MA 02269-9101	(617) 770-3000 (800) 344-3555
NFPA	National Forest Products Assoc. (Now AFPA)	
NHLA	National Hardwood Lumber Assoc. P.O. Box 34518 Memphis, TN 38184-0518	(901) 377-1818
NKCA	National Kitchen Cabinet Assoc. (Now KCMA)	
NLGA	National Lumber Grades Authority	

	4400 Dominion St., Suite 103 Burnaby, BC V5G 4G3	(604) 451-7323
NOFMA	National Oak Flooring Manufacturers Assoc. P.O. Box 3009 Memphis, TN 38173-0009	(901) 526-5016
NPA	National Particleboard Assoc. 18928 Premiere Ct. Gaithersburg, MD 20879	(301) 670-0604
NPCA	National Paint and Coatings Assoc. 1500 Rhode Island Ave., NW Washington, DC 20005	(202) 462-6272
NRCA	National Roofing Contractors Assoc. 10255 W. Higgins Rd., Suite 600 Rosemont, IL 60018-5607	(708) 299-9070
NSF	National Sanitation Foundation 3475 Plymouth Rd. P.O. Box 130140 Ann Arbor, MI 48113-0140	(313) 769-8010
NSSEA	National School Supply and Equipment Assoc. 8300 Colesville Rd., No. 250 Silver Spring, MD 20910	(301) 495-0240
NTMA	National Terrazzo and Mosaic Assoc. 3166 Des Plaines Ave., Suite 132 Des Plaines, IL 60018	(708) 635-7744
NWMA	National Woodwork Manufacturers Assoc. (Now NWWDA)	
NWWDA	National Wood Window and Door Assoc. 1400 E. Touhy Ave., #G54 Des Plaines, IL 60018	(708) 299-5200 (800) 223-2301
PATMI	Power Actuated Tool Manufacturers' Institute, Inc. 1000 Fairgrounds Rd., Suite 200 St. Charles, MO 63301	(314) 947-6610
PCA	Portland Cement Assoc. 5420 Old Orchard Rd. Skokie, IL 60077	(708) 966-6200
PCI	Precast/Prestressed Concrete Institute 175 W. Jackson Blvd. Chicago, IL 60604	(312) 786-0300
PDI	Plumbing and Drainage Institute c/o Sol Baker 1106 W. 77th St., South Dr.	

	Indianapolis, IN 46260	(317) 251-6970
PEI	Porcelain Enamel Institute 102 Woodmont Blvd., Suite 360 Nashville, TN 38205	(615) 385-0758
RFCI	Resilient Floor Covering Institute 966 Hungerford Dr., Suite 12-B Rockville, MD 20805	(301) 340-8580
RIS	Redwood Inspection Service 405 Enfrente Dr., Suite 200 Novato, CA 94949	(415) 382-0662
RMA	Rubber Manufacturers Assoc. 1400 K St., NW Washington, DC 20005	(202) 682-4800
SDI	Steel Deck Institute P.O. Box 9506 Canton, OH 44711	(216) 493-7886
SDI	Steel Door Institute 30200 Detroit Rd. Cleveland, OH 44145	(216) 889-0010
SGCC	Safety Glazing Certification Council c/o ETL Testing Laboratories Route 11, Industrial Park Cortland, NY 13045	(607) 753-6711
SHLMA	Southern Hardwood Lumber Manufacturers Assoc. (Now HMA)	
SIGMA	Sealed Insulating Glass Manufacturers Assoc. 401 N. Michigan Ave. Chicago, IL 60611	(312) 644-6610
SJI	Steel Joist Institute 1205 48th Avenue North, Suite A Myrtle Beach, SC 29577	(803) 449-0487
SMA	Screen Manufacturers Assoc. 3950 Lake Shore Dr., Suite 502-A Chicago, IL 60613-3431	(312) 525-2644
SMACNA	Sheet Metal and Air Conditioning Contractors National Assoc. 4201 Lafayette Center Dr. Chantilly, VA 22021	(703) 803-2980
SPIB	Southern Pine Inspection Bureau	

	4709 Scenic Highway Pensacola, FL 32504	(904) 434-2611
SPRI	Single Ply Roofing Institute 20 Walnut St. Wellesley Hills, MA 02181	(617) 237-7879
SSPC	Steel Structures Painting Council 4516 Henry St. Pittsburgh, PA 15213	(412) 687-1113
SSPMA	Sump and Sewage Pump Manufacturers Assoc. P.O. Box 647 Northbrook, IL 60065-0647	(708) 559-9233
STI	Steel Tank Institute 570 Oakwood Rd. Lake Zurich, IL 60047	(708) 438-8265
SWI	Steel Window Institute c/o Thomas Associates, Inc. 1300 Sumner Ave. Cleveland, OH 44115-2851	(216) 241-7333
SWPA	Submersible Wastewater Pump Assoc. 600 S. Federal St., Suite 400 Chicago, IL 60605	(312) 922-6222
TCA	Tile Council of America P.O. Box 326 Princeton, NJ 08542-0326	(609) 921-7050
TIMA	Thermal Insulation Manufacturers Assoc. (This Organization is now defunct. See NAIMA)	
TPI	Truss Plate Institute 583 D'Onofrio Dr., Suite 200 Madison, WI 53719	(608) 833-5900
UL	Underwriters Laboratories 333 Pfingsten Rd. Northbrook, IL 60062	(708) 272-8800
UNI	Uni-Bel PVC Pipe Assoc. 2655 Villa Creek Dr., Suite 155 Dallas, TX 75234	(214) 243-3902
USP	U.S. Pharmacopoeial Convention 12601 Twinbrook Parkway Rockville, MD 20852	(301) 881-0666

WA	Wallcoverings Assoc. 401 N. Michigan Ave. Chicago, IL 60611-4267	(312) 644-6618
WCLIB	West Coast Lumber Inspection Bureau P.O. Box 23145 Portland, OR 97281	(503) 639-0651
WCMA	Window Covering Manufacturers Assoc. 355 Lexington Ave., 17th Floor New York, NY 10017	(212) 661-4261
WIC	Woodwork Institute of California P.O. Box 11428 Fresno, CA 93773-1428	(209) 233-9035
WLPDIA	Western Lath, Plaster, Drywall Industries Assoc. (Formerly California Lath & Plaster Assoc.) 8635 Navajo Rd. San Diego, CA 92119	(619) 229-8307
WRI	Wire Reinforcement Institute 1101 Connecticut Ave. NW, Suite 700 Washington, DC 20036-4303	(202) 429-5125
WSC	Water Systems Council 600 S. Federal St., Suite 400 Chicago, IL 60605	(312) 922-6222
WSFI	Wood and Synthetic Flooring Institute 4415 W. Harrison St., Suite 242-C Hillside, IL 60162	(708) 449-2933
WWPA	Western Wood Products Assoc. Yeon Building 522 SW 5th Ave. Portland, OR 97204-2122	(503) 224-3930
WWPA	Woven Wire Products Assoc. 2515 N. Nordica Ave. Chicago, IL 60635	(312) 637-1359

G. Federal Government Agencies: Names and titles of federal government standard- or Specification-producing agencies are often abbreviated. The following acronyms or abbreviations referenced in the Contract Documents indicate names of standard- or Specification-producing agencies of the federal government. Names and addresses are subject to change and are believed, but are not assured, to be accurate and up-to-date as of the date of the Contract Documents.

CE	Corps of Engineers (U.S. Department of the Army) Chief of Engineers - Referral Washington, DC 20314	(202) 272-0660
CFR	Code of Federal Regulations	

	(Available from the Government Printing Office) N. Capitol St. between G and H St., NW Washington, DC 20402 (Material is usually first published in the "Federal Register")	(202) 783-3238
CPSC	Consumer Product Safety Commission 5401 Westbard Ave. Bethesda, MD 20207	(800) 638-2772
CS	Commercial Standard (U.S. Department of Commerce) Government Printing Office Washington, DC 20402	(202) 783-3238
DOC	Department of Commerce 14th St. and Constitution Ave., NW Washington, DC 20230	(202) 482-2000
DOT	Department of Transportation 400 Seventh St., SW Washington, DC 20590	(202) 366-4000
EPA	Environmental Protection Agency 401 M St., SW Washington, DC 20460	(202) 382-2090
FAA	Federal Aviation Administration (U.S. Department of Transportation) 800 Independence Ave., SW Washington, DC 20590	(202) 366-4000
FCC	Federal Communications Commission 1919 M St., NW Washington, DC 20554	(202) 632-7000
FDA	Food and Drug Administration 5600 Fishers Lane Rockville, MD 20857	(301) 443-1544
FHA	Federal Housing Administration (U.S. Department of Housing and Urban Development) 451 Seventh St., SW Washington, DC 20201	(202) 708-1422
FS	Federal Specification (from GSA) Specifications Unit (WFSIS) 7th and D St., SW Washington, DC 20407	(202) 708-9205
GSA	General Services Administration F St. and 18th St., NW Washington, DC 20405	(202) 708-5082

MIL	Military Standardization Documents (U.S. Department of Defense) Naval Publications and Forms Center 5801 Tabor Ave. Philadelphia, PA 19120	
NIST	National Institute of Standards and Technology (U.S. Department of Commerce) Gaithersburg, MD 20899	(301) 975-2000
OSHA	Occupational Safety and Health Administration (U.S. Department of Labor) 200 Constitution Ave., NW Washington, DC 20210	(202) 219-6091
PS	Product Standard of NBS (U.S. Department of Commerce) Government Printing Office Washington, DC 20402	(202) 783-3238
REA	Rural Electrification Administration (U.S. Department of Agriculture) 14th St. and Independence Ave., SW Washington, DC 20250	(202) 447-2791
USDA	U.S. Department of Agriculture Independence Ave. between 12th St. and 14th St., SW Washington, DC 20250	(202) 720-2791
USPS	U.S. Postal Service 475 L'Enfant Plaza, SW Washington, DC 20260-0010	(202) 268-2000

1.5 GOVERNING REGULATIONS AND AUTHORITIES

A. Copies of Regulations: Obtain copies of the following regulations and retain at the Project Site to be available for reference by parties who have a reasonable need.

1.6 SUBMITTALS

A. Permits, Licenses, and Certificates: For the Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established in conjunction with compliance with standards and regulations bearing upon performance of the Work.

PART 2 - PRODUCTS (Not Applicable)

PART 3 - EXECUTION (Not Applicable)

END OF SECTION 01 4200

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SECTION 014500 - QUALITY REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

1. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for quality-control services.

B. Quality-control services include inspections, tests, and related actions, including reports performed by Contractor, by independent agencies, and by governing authorities. They do not include contract enforcement activities performed by Architect.

C. Inspection and testing services are required to verify compliance with requirements specified or indicated. These services do not relieve Contractor of responsibility for compliance with Contract Document requirements.

D. Requirements of this Section relate to customized fabrication and installation procedures, not production of standard products.

1. Specific quality-control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.
2. Specified inspections, tests, and related actions do not limit Contractor's quality-control procedures that facilitate compliance with Contract Documents. Requirements.
3. Requirements for Contractor to provide quality-control services required by Architect, Owner, or authorities having jurisdiction are not limited by provisions of this Section.

E. Related Sections: The following Sections contain requirements that relate to this Section:

1. Division 1 Section "Cutting and Patching" specifies requirements for repair and restoration of construction disturbed by inspection and testing activities.
2. Division 1 Section "Submittals" specifies requirements for development of a schedule of required tests and inspections.

F. Referenced Standards: If compliance with two or more standards is specified and the standards establish different or conflicting requirements, comply with the most stringent requirement. Refer uncertainties to Architect for a decision.

G. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum. The actual installation may exceed the minimum within reasonable limits. Indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect for a decision.

H. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, notices, receipts for fee payments, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

I. Testing Agency Qualifications: An independent agency with the experience and capability to conduct testing and inspecting indicated; and where required by authorities having jurisdiction, that is acceptable to authorities.

J. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that replaced Work that failed to comply with the Contract Documents.

K. Testing Agency Responsibilities: Cooperate with Architect and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.

1. Promptly notify Architect and Contractor of irregularities or deficiencies in the Work observed during performance of its services.
2. Do not release, revoke, alter, or increase requirements of the Contract Documents or approve or accept any portion of the Work.
3. Do not perform any duties of Contractor.

L. Associated Services: Cooperate with testing agencies and provide reasonable auxiliary services as requested. Provide the following:

1. Access to the Work.
2. Incidental labor and facilities necessary to facilitate tests and inspections.
3. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
4. Facilities for storage and field curing of test samples.
5. Security and protection for samples and for testing and inspecting equipment.

M. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and -control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.

1. Schedule times for tests, inspections, obtaining samples, and similar activities.

1.3 RESPONSBILITIES

A. Contractor Responsibilities: Unless otherwise indicated as the responsibility of another identified entity, Contractor shall provide inspections, tests, and other quality-control services specified elsewhere in the Contract Documents and required by authorities having jurisdiction. Costs for these services are included in the Contract Sum.

1. Where individual Sections specifically indicate that certain inspections, tests, and other quality-control services are the Contractor’s responsibility, the Contractor shall employ and pay a qualified independent testing agency to perform quality-control services. Costs for these services are included in the Contract Sum.
2. Where individual Sections specifically indicate that certain inspections, tests, and other quality-control services are the Owner’s responsibility, the Owner will employ and pay a qualified independent testing agency to perform those services.
3. Where individual Sections specifically indicate that certain inspections, tests, and other quality-control services are the Owner’s responsibility, the Owner will engage the services of a qualified independent testing agency to perform those services. Payment for these services will be made from the Inspection and Testing Allowance, as authorized by Change Orders.

a. Where the Owner has engaged a testing agency for testing and inspecting part of the Work, and the Contractor is also required to engage an entity for the same or related element, the Contractor shall not employ the entity engaged by the Owner, unless agreed to in writing by the Owner.

B. Retesting: The Contractor is responsible for retesting where results of inspections, tests, or other quality-control services prove unsatisfactory and indicate noncompliance with Contract Document requirements, regardless of whether the original test was Contractor's responsibility.

1. The cost of retesting construction, revised or replaced by the Contractor, is the Contractor's responsibility where required tests performed on original construction indicated noncompliance with Contract Document requirements.

C. Associated Services: Cooperate with agencies performing required inspections, tests, and similar services, and provide reasonable auxiliary services as requested. Notify the agency sufficiently in advance of operations to permit assignment of personnel. Auxiliary services required include, but are not limited to, the following.

1. Provide access to the Work.
2. Furnish incidental labor and facilities necessary to facilitate inspections and tests.
3. Take adequate quantities of representative samples of materials that require testing or assist the agency in taking samples.
4. Provide facilities for storage and curing of test samples.
5. Deliver samples to testing laboratories.
6. Provide the agency with a preliminary design mix proposed for use for materials mixes that require control by the testing agency.
7. Provide security and protection of samples and test equipment at the Project Site.

D. Duties of the testing Agency: The independent agency engaged to perform inspections, sampling, and testing of materials and construction specified in individual Sections shall cooperate with the Architect, and the Contractor in performance of the agency's duties. The testing agency shall provide qualified personnel to perform required inspections and tests.

1. The agency shall notify the Architect, and the Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
2. The agency is not authorized to release, revoke, alter or enlarge requirements of the Contract Documents or approve or accept any portion of the Work.
3. The agency is not authorized to release, revoke, alter or enlarge requirements of the Contract Documents or approve or accept any portion of the Work.

E. Coordination: Coordinate the sequence of activities to accommodate required services with a minimum of delay.

1. Coordinate activities to avoid the necessity of removing and replacing construction to accommodate inspections and tests.
2. The Architect is responsible for scheduling times for inspections tests, taking samples, and similar activities.

1.4 SUBMITTALS

A. Unless the Contractor is responsible for this service, the independent testing agency shall submit a certified written report, induplicate, of each inspection, test, or similar service through the Contractor.

1. Submit additional copies of each written report directly to the governing authority, when the authority so directs.
2. Report Data: Written reports of each inspection, test, or similar service include, but are not limited to, the following:

    a. Date of issue.
    b. Project title and number.
    c. Name, address, and telephone number of testing agency.
    d. Dates and locations of samples and tests or inspections.
    e. Names of individuals making the inspection or test.
    f. Designation of the Work and test method.
    g. Identification of product and Specification Section.
    h. Complete inspection or test data.
    i. Test results and an interpretations of test results.
    j. Ambient conditions at the time of sample taking and testing.
    k. Comments or professional opinion on whether inspected or tested Work complies with Contract document requirements.
    l. Name and signature of laboratory inspector.
    m. Recommendations on retesting.

1.5 QUALITY ASSURANCE

A. Qualifications for Service Agencies: Engage inspection and testing service agencies, including independent testing laboratories, that are pre-qualified as complying with the American Council of Independent Laboratories “Recommended Requirements for Independent Laboratory Qualification” and that specialize in the types of inspections and test to be performed.

1. Each independent inspection and testing agency engaged on the Project shall be authorized by authorities having jurisdiction to operate in the state where the project is located.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 REPAIR AND PROTECTION

A. General: Upon completion of inspection, testing, sample taking and similar services, repair damaged construction and restore substrates and finishes. Comply with Contract Document requirements for Division 1 Section “Cutting and Patching.”

B. Protect construction exposed by or for quality-control service activities, and protect repaired construction.

C. Repair and protection is Contractor’s responsibility, regardless of the assignment of responsibility for inspection, testing, or similar services.

END OF SECTION 014500

SECTION 01 50 00 – TEMPORARY FACILITIES AND CONTROLS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes requirements for temporary utilities, support facilities, and security and protection facilities.

B. Related Sections include the following:

1. Division 01 Section "Summary of Work" for limitations on utility interruptions and other work restrictions.
2. Division 01 Section "Submittal Procedures" for procedures for submitting copies of implementation and termination schedule and utility reports.
3. Division 01 Section "Execution" for progress cleaning requirements.

1.3 DEFINITIONS

A. Permanent Enclosure: As determined by Architect, exterior walls are insulated and weathertight; and all openings are closed with permanent construction or substantial temporary closures.

1.4 USE CHARGES

A. General: Cost or use charges for temporary facilities shall be included in the Contract Sum. Allow other entities to use temporary services and facilities without cost, including, but not limited to, Owner's construction forces, Architect, occupants of Project, testing agencies, and authorities having jurisdiction.

B. Water Service: Water from Owner's existing water system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.

C. Electric Power: Owner shall supply single-phase electric power from existing building distribution systems for use by all Prime Contracts, for each Phased building area.

1. EC shall install temporary facilities as outlined in their Scope of Work and related Division 01. EC SHALL PROVIDE ALL POWER CONNECTIONS AS REQUIRED FOR GC & MC TEMPORARY PANELS.
2. Owner shall not be responsible for supplying temporary three-phase power.
3. Staging Area Power: The Owner shall be responsible for all power use charges associated with this facility; the Prime Contract shall enforce power conservation measures with their facilities and those of their sub-contractors.

D. Telephone/Internet: Each Prime Contract shall be responsible for use charges associated with their respective telephone and internet access requirements.

1.5 SUBMITTALS

A. Site Plan: Show temporary facilities, egress plans, utility hookups, staging areas, and parking areas for construction personnel.

All contractors are required to provide "egress plans" for both interior and exterior work for locations where work will close off any exits, corridors, pathways, roads, and any access way. These plans are to be provided in advance at least 2 months before work commences in that area, no work shall be started in any manner without approval of such plan. The failure to provide such plan for coordinating and scheduling will result into back charges to the prime(s) involved. These plans must include all locations and details where scaffolding, fencing and all temporary construction barriers are required.

1.6 QUALITY ASSURANCE

A. Electric Service: Comply with NECA, NEMA, and UL standards and regulations for temporary electric service. Install service to comply with NFPA 70.

B. Tests and Inspections: Arrange for authorities having jurisdiction to test and inspect each temporary utility before use. Obtain required certifications and permits.

1.7 PROJECT CONDITIONS

A. A. Temporary Use of Permanent Facilities: Prime Contract, as installer of each permanent service shall assume responsibility for its operation, maintenance, and protection during use as a construction facility prior to the Owner's acceptance, regardless of previously assigned temporary facilities and controls responsibility.

B. Owner's Facilities: Contractors are <u>not</u> allowed to use the Owner's facilities (toilets, telephone, food service, etc.) for their own benefit. Prime Contract Superintendents shall enforce this policy with their respective work forces.

1. Parking will be restricted to an area determined by the Owner. Owner reserves the right to remove from their property, unauthorized vehicles occupying unauthorized areas, at respective Contractors' expense.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Chain-Link Fencing: Minimum 2 inch, 0.148 inch thick, galvanized steel, chain-link fabric fencing; minimum 6 feet high with galvanized steel pipe posts; minimum 2-3/8 inch OD line posts and 2-7/8 inch OD corner and pull posts.

1. Provide gate openings to accommodate vehicle delivery traffic or as noted. Install gateposts in sizes required for support gates.

B. Yodock barriers may be provided by the contractor as substitution to fence with driven post. If site conditions or pace of work do not allow for typical fence with driven post, then the contractor is responsible to provide Yodock barriers. This is at the sole discretion of the construction manager.

C. Gypsum Board: Minimum 5/8 inch thick by 48 inches wide by maximum available lengths; regular-type panels with tapered edges. Comply with ASTM C 36/C 36M.

D. Insulation: Unfaced mineral-fiber blanket, manufactured from glass, slag wool, or rock wool; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively.

2.2 TEMPORARY FACILITIES

A. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment for construction operations.

1. Store combustible materials apart from building.

B. Porta-jons.: Contractors are not permitted to use the owners toilets facilities unless given permission by the construction manager. The contractor will be required to provide temporary toilet facilities as required for its workforce. Location to be determined by the construction manager.

2.3 EQUIPMENT

A. Fire Extinguishers: Portable, UL rated; with class and extinguishing agent as required by locations and classes of fire exposures. Comply with applicable codes for quantities required. Comply with NFPA for recommended classes for exposure; extinguishers shall

be inspected and appropriately tagged prior to being brought on site. Provide stands, painted bright orange, sturdy enough to carry the extinguisher, and built as not to create a tipping hazard.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Locate facilities where directed by site coordinator and where they will serve Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work and when directed by the Construction Site Coordinator at no additional cost to the owner.

1. Locate facilities to limit site disturbance as specified in Division 01 Section "Summary of Work."

B. Provide each facility ready for use when needed to avoid delay. Do not remove until facilities are no longer needed or are replaced by authorized use of completed permanent facilities.

3.2 TEMPORARY UTILITY INSTALLATION

A. General: Install temporary service or connect to existing service.

1. Arrange with utility company, Owner, and existing users for time when service can be interrupted, if necessary, to make connections for temporary services.

B. Sewers and Drainage: Provide temporary utilities to remove effluent lawfully.

1. Connect temporary sewers to municipal system as directed by authorities having jurisdiction.

C. Water Service: Use of Owner's existing water service facilities will be permitted, as long as facilities are cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore these facilities to condition existing before initial use.

1. Where installations below an outlet might be damaged by spillage or leakage, provide a drip pan of suitable size to minimize water damage. Drain accumulated water promptly from pans.

D. Heating: Provide temporary heating required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of low temperatures or high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed.

E. Ventilation and Humidity Control: Provide temporary ventilation required by construction activities for curing or drying of completed installations or for protecting installed construction from adverse effects of high humidity. Select equipment that will not have a harmful effect on completed installations or elements being installed. Coordinate ventilation requirements to produce ambient condition required and minimize energy consumption.

F. Electric Power Service: Use of Owner's existing single phase electric power service will be permitted, as long as equipment is maintained in a condition acceptable to Owner.

1. See Section 011000 for additional requirements.

G. Lighting: Provide temporary lighting with local switching that provides adequate illumination for construction operations, observations, inspections, and traffic conditions.

1. Install and operate temporary lighting that fulfills security and protection requirements without operating entire system.
2. See Section 011000 for additional requirements.

3.3 SUPPORT FACILITIES INSTALLATION

A. General: Comply with the following:

1. Provide incombustible construction for offices, shops, and sheds located within construction area or within 30 feet of building lines. Comply with NFPA 241.
2. Maintain support facilities until near Substantial Completion. Remove before Substantial Completion. Personnel remaining after Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to Owner.

B. Traffic Controls: Comply with requirements of authorities having jurisdiction.

1. Protect existing site improvements to remain including curbs, pavement, and utilities.
2. Maintain access for fire-fighting equipment and access to fire hydrants.

C. Parking: Parking will be restricted to an area determined by the Owner. Owner reserves the right to remove from their property, unauthorized vehicles occupying unauthorized areas, at respective Contractors' expense.

D. Project Identification and Temporary Signs: Provide Project identification and other signs. Install signs where indicated to inform public and individuals seeking entrance to Project. Unauthorized signs are not permitted.

1. Provide temporary, directional signs for construction personnel and visitors.

2. Maintain and touchup signs so they are legible at all times.

E. Waste Disposal Facilities: Comply with requirements specified in Division 01 Section "Construction Waste Management and Disposal" and Section 011200, "Summary of Work."

F. Waste Disposal Facilities: Provide waste-collection containers in sizes adequate to handle waste from construction operations. Comply with requirements of authorities having jurisdiction. Comply with Division 01 Section "Execution" for progress cleaning requirements.

G. Lifts and Hoists: Provide facilities necessary for hoisting materials and personnel.

1. Truck cranes and similar devices used for hoisting materials are considered "tools and equipment" and not temporary facilities.

H. Existing Stair Usage: Use of Owner's existing stairs will be permitted, as long as stairs are protected, cleaned and maintained in a condition acceptable to Owner. At Substantial Completion, restore stairs to no less than condition existing before initial use.

1. Provide protective coverings, barriers, devices, signs, or other procedures to protect stairs and to maintain means of egress. If, despite such protection, stairs become damaged, restore damaged areas so no evidence remains of correction work.

3.4 SECURITY AND PROTECTION FACILITIES INSTALLATION

A. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.

1. Comply with work restrictions specified in Division 01 Section "Multiple Contract Summary."
2. Inspect, repair, and maintain erosion and sedimentation control measures during construction until permanent vegetation has been established.

B. Pest Control: Engage pest-control service to recommend practices to minimize attraction and harboring of rodents, roaches, and other pests and to perform extermination and control procedures at regular intervals so Project will be free of pests and their residues at Substantial Completion. Obtain extended warranty for Owner. Perform control operations lawfully, using environmentally safe materials.

C. Security Enclosure and Lockup: Install substantial temporary enclosure around partially completed areas of construction. Provide lockable entrances to prevent unauthorized entrance, vandalism, theft, and similar violations of security.

1. Refer to Section 011200, "Multiple Contract Summary" for additional information.
2. All site contractors are to have a 24hr available emergency contact person available to fix and correct areas that have been compromised after hours, weekends and holidays. Upon notification of such incident, the contractor is required to deploy workers as necessary within 1-2 hours maximum to be on site to correct such matter reported. Emergency personnel contact information shall be submitted within 2 weeks of Notice to Proceed.

3.

D. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.
1. Yodock barriers are to be furnished and installed around all site construction zones with chain link fencing panels, posts and signage. All entries to sites are to have lockable gates.
2. Contractor shall ensure that all chain link safety fencings around the work zone are closed off to any adjacent structure, building, etc. at all times.
3. All contractors storing any materials and/or equipment on site shall be fenced in with secured chain link fencing.

E. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary weathertight enclosure for building exterior.

1. Where heating or cooling is required and permanent enclosure is not complete, insulate temporary enclosures.

F. Temporary Partitions: Provide floor-to-ceiling dustproof partitions to limit dust and dirt migration and to separate areas occupied by Owner from fumes and noise.

1. Construct dustproof partitions with gypsum wallboard with joints taped on occupied side, and fire-retardant plywood on construction operations side.

2. Construct dustproof partitions with 2 layers of 3 mil polyethylene sheet on each side. Cover floor with 2 layers of 3 mil polyethylene sheet, extending sheets 18 inches up the sidewalls. Overlap and tape full length of joints. Cover floor with fire-retardant plywood.
    a. Construct vestibule and airlock at each entrance through temporary partition with not less than 48 inches between doors. Maintain water-dampened foot mats in vestibule.
3. Insulate partitions to provide noise protection to occupied areas.
4. Seal joints and perimeter. Equip partitions with dustproof doors with exit device, closer and security locks.
5. Protect air-handling equipment.
6. Weather strip openings.
7. Provide walk-off mats at each entrance through temporary partition.

G. Temporary Fire Protection: Install and maintain temporary fire-protection facilities of types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 241.

1. Prohibit smoking within 50 feet of all school property.
2. Supervise welding operations, combustion-type temporary heating units, and similar sources of fire ignition according to requirements of authorities having jurisdiction.
3. Develop and supervise an overall fire-prevention and protection program for personnel at Project site. Review needs with local fire department and establish procedures to be followed. Instruct personnel in methods and procedures. Post warnings and information.
4. Provide temporary standpipes and hoses for fire protection. Hang hoses with a warning sign stating that hoses are for fire-protection purposes only and are not to be removed. Match hose size with outlet size and equip with suitable nozzles.

3.5 OPERATION, TERMINATION, AND REMOVAL

A. Supervision: Enforce strict discipline in use of temporary facilities. To minimize waste and abuse, limit availability of temporary facilities to essential and intended uses.

B. Maintenance: Maintain facilities in good operating condition until removal.

1. Maintain operation of temporary enclosures, heating, cooling, humidity control, ventilation, and similar facilities on a 24-hour basis where required to achieve indicated results and to avoid possibility of damage.

C. Temporary Facility Changeover: Do not change over from using temporary security and protection facilities to permanent facilities until Substantial Completion.

D. Termination and Removal: Remove each temporary facility when need for its service has ended, when it has been replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with temporary facility. Repair damaged Work, clean exposed surfaces, and replace construction that cannot be satisfactorily repaired.

1. Materials and facilities that constitute temporary facilities are property of Contractor. Owner reserves right to take possession of Project identification signs.
2. Remove temporary paving not intended for or acceptable for integration into permanent paving. Where area is intended for landscape development, remove soil and aggregate fill that do not comply with requirements for fill or subsoil. Remove materials contaminated with road oil, asphalt and other petrochemical compounds, and other substances that might impair growth of plant materials or lawns. Repair or replace street paving, curbs, and sidewalks at temporary entrances, as required by authorities having jurisdiction.
3. At Substantial Completion, clean and renovate permanent facilities used during construction period. Comply with final cleaning requirements specified in Division 01 Section "Closeout Procedures."

END OF SECTION 015000

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SECTION 01 60 00 – PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements governing the Contractor's selection of products for use in the Project.
   1. Single Prime Contract: Provisions of this Section apply to the construction activities of each prime contractor.

B. Related Sections: The following Sections contain requirements that relate to this Section:
   1. Division 1 Section "Electronic Submittal Procedures" specifies requirements for submittal of the Contractor's Construction Schedule and the Submittal Schedule.
   2. Division 1 Section "Substitution Procedures" specifies administrative procedures for handling requests for substitutions made after award of the Contract.

1.3 DEFINITIONS

A. Definitions used in this Article are not intended to change the meaning of other terms used in the Contract Documents, such as "specialties," "systems," "structure," "finishes," "accessories," and similar terms. Such terms are self-explanatory and have well-recognized meanings in the construction industry.
   1. "Products" are items purchased for incorporation in the Work, whether purchased for the Project or taken from previously purchased stock. The term "product" includes the terms "material," "equipment," "system," and terms of similar intent.
      a. "Named Products" are items identified by the manufacturer's product name, including make or model number or other designation, shown or listed in the manufacturer's published product literature, that is current as of the date of the Contract Documents.
   2. "Materials" are products substantially shaped, cut, worked, mixed, finished, refined or otherwise fabricated, processed, or installed to form a part of the Work.
   3. "Equipment" is a product with operational parts, whether motorized or manually operated, that requires service connections, such as wiring or piping.

1.4 QUALITY ASSURANCE

A. Source Limitations: To the fullest extent possible, provide products of the same kind from a single source.

1. When specified products are available only from sources that do not, or cannot, produce a quantity adequate to complete project requirements in a timely manner, consult with the Architect to determine the most important product qualities before proceeding. Qualities may include attributes, such as visual appearance, strength, durability, or compatibility. When a determination has been made, select products from sources producing products that possess these qualities, to the fullest extent possible.

B. Compatibility of Options: When the Contractor is given the option of selecting between 2 or more products for use on the Project, the product selected shall be compatible with products previously selected, even if previously selected products were also options.
   1. Each prime contractor is responsible for providing products and construction methods that are compatible with products and construction methods of other prime or separate contractors.
   2. If a dispute arises between prime contractors over concurrently selectable, but incompatible products, the Architect will determine which products shall be retained and which are incompatible and must be replaced.

C. Nameplates: Except for required labels and operating data, do not attach or imprint manufacturer's or producer's nameplates or trademarks on exposed surfaces of products that will be exposed to view in occupied spaces or on the exterior.
   1. Labels: Locate required product labels and stamps on concealed surfaces or, where required for observation after installation, on accessible surfaces that are not conspicuous.
   2. Equipment Nameplates: Provide a permanent nameplate on each item of service-connected or power-operated equipment. Locate on an easily accessible surface that is inconspicuous in occupied spaces. The nameplate shall contain the following information and other essential operating data:
      a. Name of product and manufacturer.
      b. Model and serial number.
      c. Capacity.
      d. Speed.
      e. Ratings.

1.5 PRODUCT DELIVERY, STORAGE, AND HANDLING

A. Deliver, store, and handle products according to the manufacturer's recommendations, using means and methods that will prevent damage, deterioration, and loss, including theft.
   1. Schedule delivery to minimize long-term storage at the site and to prevent overcrowding of construction spaces.
   2. Coordinate delivery with installation time to assure minimum holding time for items that are flammable, hazardous, easily damaged, or sensitive to deterioration, theft, and other losses.
   3. Deliver products to the site in an undamaged condition in the manufacturer's original sealed container or other packaging system, complete with labels and instructions for handling, storing, unpacking, protecting, and installing.
   4. Inspect products upon delivery to ensure compliance with the Contract Documents and to ensure that products are undamaged and properly protected.
   5. Store products at the site in a manner that will facilitate inspection and measurement of quantity or counting of units.
   6. Store heavy materials away from the Project structure in a manner that will not endanger the supporting construction.
   7. Store products subject to damage by the elements above ground, under cover in a weathertight enclosure, with ventilation adequate to prevent condensation. Maintain temperature and humidity within range required by manufacturer's instructions.

PART 2 - PRODUCTS

2.1 PRODUCT SELECTION

A. General Product Requirements: Provide products that comply with the Contract Documents, that are undamaged and, unless otherwise indicated, new at the time of installation.
   1. Provide products complete with accessories, trim, finish, safety guards, and other devices and details needed for a complete installation and the intended use and effect.
   2. Standard Products: Where available, provide standard products of types that have been produced and used successfully in similar situations on other projects.

B. Product Selection Procedures: The Contract Documents and governing regulations govern product selection. Procedures governing product selection include the following:
   1. Nonproprietary Specifications: When Specifications list products or manufacturers that are available and may be incorporated in the Work, but do not restrict the Contractor to use of these products only, the Contractor may propose any available product that complies with Contract requirements. Comply with Contract Document provisions concerning "substitutions" to obtain approval for use of an unnamed product.
   2. Descriptive Specification Requirements: Where Specifications describe a product or assembly, listing exact characteristics required, with or without use of a brand or trade name, provide a product or assembly that provides the characteristics and otherwise complies with Contract requirements.
   3. Performance Specification Requirements: Where Specifications require compliance with performance requirements, provide products that comply with these requirements and are recommended by the manufacturer for the application indicated.
   4. Manufacturer's recommendations may be contained in published product literature or by the manufacturer's certification of performance.
   5. Compliance with Standards, Codes, and Regulations: Where Specifications only require compliance with an imposed code, standard, or regulation, select a product that complies with the standards, codes, or regulations specified.
   6. Visual Matching: Where Specifications require matching an established Sample, the Architect's decision will be final on whether a proposed product matches satisfactorily.
   7. Where no product available within the specified category matches satisfactorily and complies with other specified requirements, comply with provisions of the Contract Documents concerning "substitutions" for selection of a matching product in another product category.
   8. Visual Selection: Where specified product requirements include the phrase "... as selected from manufacturer's standard colors, patterns, textures ..." or a similar phrase, select a product and manufacturer that complies with other specified requirements. The Architect will select the color, pattern, and texture from the product line selected.
   9. Allowances: Refer to individual Specification Sections and "Allowance" provisions in Division 1 for allowances that control product selection and for procedures required for processing such selections.

PART 3 - EXECUTION

3.1 INSTALLATION OF PRODUCTS

A. Comply with manufacturer's instructions and recommendations for installation of products in the applications indicated. Anchor each product securely in place, accurately located and aligned with other Work.

1. Clean exposed surfaces and protect as necessary to ensure freedom from damage and deterioration at time of Substantial Completion.

END OF SECTION 01 60 00

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SECTION 017329 - CUTTING AND PATCHING

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes administrative and procedural requirements for cutting and patching.

B. Definition: "Cutting and patching" includes cutting into existing construction to provide for the installation or performance of other work and subsequent fitting and patching required to restore surfaces to their original condition, and does not apply to new construction procedures, except when new construction is already completed and must be cut and patched due to incorrect sequencing of work and/or improper coordination.

C. Multiple Prime Contracts: Provisions of this Section apply to the construction activities of each prime Contractor.

D. Related Sections: The following Sections contain requirements that relate to this Section:
   1. Division 1 Section "Coordination" for procedures for coordinating cutting and patching with other construction activities.
   2. Refer to other Sections for specific requirements and limitations applicable to cutting and patching individual parts of the Work.
      a. Requirements of this Section apply to mechanical and electrical installations. Refer to Division 15 and 16 Sections for other requirements and limitations applicable to cutting and patching mechanical and electrical installations.

1.2 RESPONSIBILITIES

A. General: Each Prime Contractor is responsible to perform cutting and patching for their portion of the Work. Patching work shall restore surfaces to original condition including paint, ceramic, tile, masonry, EIFS, VCT flooring, terrazzo flooring, gypsum wallboard ceilings and walls, etc. The requirements of this section apply to all Prime Contractors, even though certain items of work may be applicable to a specific Prime Contractor.

B. Cutting and patching of completed new construction required due to out of sequence construction and/or improper coordination is the responsibility of the prime Contractor responsible for the out of sequence construction or improper coordination. Cutting and patching of new construction for these purposes shall be accomplished by the Contractor for General Work and shall be paid for by the prime Contractor responsible. The Architect shall be the sole judge of the responsibility for such cutting and patching, and shall prepare change orders to delete monies from the Contract of the responsible prime Contractor and credit those monies to the Contractor for General Work.
   1. Contractor for General Work shall cooperate with Architect and other Contractors to accomplish this cutting and patching with minimal disruption to construction and at reasonable costs.

1.3 SUBMITTALS:

A. Cutting and Patching Proposal: Submit a plan describing procedures well in advance of the time cutting and patching will be performed if the Owner requires approval of these procedures before proceeding. Request approval to proceed. Include the following information, as applicable, in the proposal:

1. Describe the extent of cutting and patching required. Show how it will be performed and indicate why it cannot be avoided.

2. Describe anticipated results in terms of changes to existing construction. Include changes to structural elements and operating components as well as changes in the building's appearance and other significant visual elements.

3. List products to be used and firms or entities that will perform Work.

4. Indicate dates when cutting and patching will be performed.

5. Utilities: List utilities that cutting and patching procedures will disturb or affect. List utilities that will be relocated and those that will be temporarily out-of-service. Indicate how long service will be disrupted.

6. Where cutting and patching involves adding reinforcement to structural elements, submit details and engineering calculations showing integration of reinforcement with the original structure.

7. Approval by the Architect to proceed with cutting and patching does not waive the Architect's right to later require complete removal and replacement of unsatisfactory work.

1.4 QUALITY ASSURANCE:

A. Requirements for Structural Work: Do not cut and patch structural elements in a manner that would change their load-carrying capacity or load-deflection ratio.

1. Obtain approval of the cutting and patching proposal before cutting and patching the following structural elements:
   a. Foundation construction.
   b. Bearing and retaining walls.
   c. Structural concrete.
   d. Structural steel.
   e. Lintels.
   f. Timber and primary wood framing.
   g. Structural decking.
   h. Stair systems.
   i. Miscellaneous structural metals.
   j. Exterior curtain-wall construction.
   k. Equipment supports.
   l. Piping, ductwork, vessels, and equipment.
   m. Structural systems of special construction in Division 13 Sections.

B. Operational Limitations: Do not cut and patch operating elements or related components in a manner that would result in reducing their capacity to perform as intended. Do not cut and patch operating elements or related components in a manner that would result in increased maintenance or decreased operational life or safety.

1. Obtain approval of the cutting and patching proposal before cutting and patching the following operating elements or safety related systems:
   a. Primary operational systems and equipment.
   b. Air or smoke barriers.

c. Water, moisture, or vapor barriers.
d. Membranes and flashings.
e. Fire protection systems.
f. Noise and vibration control elements and systems.
g. Control systems.
h. Communication systems.
i. Conveying systems.
j. Electrical wiring systems.
k. Operating systems of special construction.

C. Visual Requirements: Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in the Architect's opinion, reduce the building's aesthetic qualities. Do not cut and patch construction in a manner that would result in visual evidence of cutting and patching. Remove and replace construction cut and patched in a visually unsatisfactory manner.

1. If possible retain the original Installer or fabricator to cut and patch the exposed Work listed below. If it is impossible to engage the original Installer or fabricator, engage another recognized experienced and specialized firm.
   a. Processed concrete finishes.
   b. Stonework and stone masonry.
   c. Ornamental metal.
   d. Matched-veneer woodwork.
   e. Preformed metal panels.
   f. Firestopping.
   g. Window wall system.
   h. Stucco and ornamental plaster.
   i. Acoustical ceilings.
   j. Terrazzo.
   k. Finished wood flooring.
   l. Fluid-applied flooring.
   m. Carpeting.
   n. Aggregate wall coating.
   o. Wall covering.
   p. Swimming pool finishes

1.5 WARRANTY:

A. Existing Warranties: Replace, patch, and repair material and surfaces cut or damaged by methods and with materials in such a manner as not to void any warranties required or existing.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL:

A. Use materials identical to existing materials. For exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible if identical materials are unavailable or cannot be used. Use materials whose installed performance will equal or surpass that of existing materials.

PART 3 - EXECUTION

3.1 INSPECTION:

A. Examine surfaces to be cut and patched and conditions under which cutting and patching is to be performed before cutting. If unsafe or unsatisfactory conditions are encountered, take corrective action before proceeding.

1. Before proceeding, meet at the Project Site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

3.2 PREPARATION:

A. Temporary Support: Provide temporary support of work to be cut, including shoring, lumber, plywood, etc.

B. Protection: Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of the Project that might be exposed during cutting and patching operations.

C. Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

D. Avoid cutting existing pipe, conduit, or ductwork serving the building but scheduled to be removed or relocated until provisions have been made to bypass them.

3.3 PERFORMANCE:

A. General: Employ skilled workmen to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time and complete without delay.

1. Cut existing construction to provide for installation of other components or performance of other construction activities and the subsequent fitting and patching required to restore surfaces to their original condition.

B. Cutting: Cut existing construction using methods least likely to damage elements retained or adjoining construction. Where possible, review proposed procedures with the original Installer; comply with the original Installer's recommendations.

1. In general, where cutting, use hand or small power tools designed for sawing or 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. To avoid marring existing finished surfaces, cut or drill from the exposed or finished side into concealed surfaces.

3. Cut through concrete and masonry using a cutting machine, such as a Carborundum saw or a diamond-core drill. (Do not overcut.)

4. Comply with requirements of applicable Division 2 Sections where cutting and patching requires excavating and backfilling.

5. Where services are required to be removed, relocated, or abandoned, by-pass utility services, such as pipe or conduit, before cutting. 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 by-passing and cutting.

6. Existing electric and plumbing lines are located beneath floor areas. Contractor will trace out these items and proceed with caution so that existing utilities are not damaged by cutting / demolition.

C. Patching: Patch with durable seams that are as invisible as possible. Comply with specified tolerances.

1. Where feasible, inspect and test patched areas to demonstrate integrity of the installation.

2. 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.

3. Where removing walls or partitions extends one finished area into another, patch and repair floor and wall surfaces in the new space. Provide an even surface of uniform color and appearance. Remove existing floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and appearance.
   a. Where patching occurs in a smooth painted surface, extend final paint coat over entire unbroken surface containing the patch after the area has received primer and second coat.

4. Patch, repair, or re-hang existing ceilings as necessary to provide an even-plane surface of uniform appearance.

3.4 CLEANING:

A. Clean areas and spaces where cutting and patching are performed. Completely remove paint, mortar, oils, putty, and similar items. Thoroughly clean piping, conduit, and similar features before applying paint or other finishing materials. Restore damaged pipe covering to its original condition.

END OF SECTION 017329

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SECTION 017423 – CLEANING UP

PART 1 - GENERAL

1.1 Description of Work:

A. The work of this section relates to the following:

1. Maintain premises and public properties and roadways free from accumulations of waste, debris, dirt, mud and rubbish caused by operations.
2. At completion of work, remove waste materials, rubbish tools, equipment, machinery and surplus materials, and clean all sight exposed surfaces; leave project clean and ready for occupancy.
3. Remove all overspray caused by construction operations from adjacent construction, surfaces and vehicles.

B. Related Requirements Specified Elsewhere

1. Summary of work: Section 01 10 00
2. Cutting and Patching: Section 01 73 29
3. Cleaning for Specific Products or Work: the respective sections of the specifications:

1.2 Safety Requirements

A. Standards: Maintain project in accord with safety and insurance standards.

B. Hazard Control

1. Store volatile waste in covered metal containers and remove from premises daily.
2. Prevent accumulations of waste which create hazardous conditions.
3. Provide adequate ventilation during use of volatile or noxious substances.

C. Conduct cleaning and disposal operations to comply with local ordinances and anti-pollution laws.

1. Do not burn or bury rubbish and waste materials on project site.
2. Do not dispose of volatile waste such as mineral spirits, oil, or paint thinner in storm or sanitary drains.
3. Do not dispose of waste into streams or waterways.

PART 2 - PRODUCTS

2.1 Materials: Use only cleaning materials recommended by manufacturer of surface to be cleaned.

PART 3 - EXECUTION

3.1 During Construction Each Contract Shall:

A. Execute daily cleaning to ensure that building, grounds, and public properties and roadways are maintained free from accumulations of waste materials, rubbish, dirt and mud.

B. Wet down dry materials and rubbish to lay dust and prevent blowing dust. Erect dustproof barriers to keep dust from drifting through the building.

C. Each day, all contractors shall affect the following:

1. Areas of intense activity, such as cutting and sawing must be swept clean and reorganized at the end of each day.
2. Areas of moderate activity such as installation of plumbing, ductwork, electrical work must be returned to good order at the end of each day.
3. Debris below scaffolds (and shoring/re-shoring) must at all time, be kept sufficiently consolidated to keep walkways free of tripping hazards. These work areas must also be swept clean immediately upon removal of scaffolds.
4. All swept up debris, waste materials, and packing must be removed and placed in the dumpster by noon of the following workday.
5. All sorted material must be kept in good order.
6. As portions of the work are completed, all used and excess materials must be removed promptly.
7. Daily Clean-up and good housekeeping is the responsibility of each contractor individually and will be monitored by the Construction Manager.
8. Contractors shall promptly comply with requests to organize scatted materials.

D. Each contractor is responsible for furnishing all dumpsters or other such containers as required for collection, storage and legal disposal of all debris and rubbish resultant from the construction operation. The Construction Manager shall locate, maintain and move such containers as necessary and legally dispose of waste as containers are filled. Separate and recycle as required authorities and regulations.

E. Vacuum clean interior building areas when ready to receive finish painting, and continue vacuum cleaning on an as needed basis until building is ready for Substantial Completion or occupancy.

F. Handle materials in a controlled manner with as few handlings as possible; do not drop or throw materials from heights.

G. Schedule cleaning operations so that dust and other containment resulting from cleaning process will not fall on wet, newly painted surfaces.

3.2 FINAL CLEANING

A. Each Contractor Shall:

1. Employ experienced workmen, or professional cleaners, for final cleaning.
2. In preparation for substantial completion or occupancy, conduct final inspection of sight exposed interior and exterior surfaces, and of concealed spaces.
3. Remove grease, dust, dirt, stains, labels, fingerprints, and other foreign materials form sight-exposed interior and exterior finished surfaces; polish surface so designated to shine finish.
4. Maintain cleaning until project, or portion thereof, is occupied by owner.
5. Repair, patch and touch up marred surfaces to specified finish, to match adjacent surfaces.

B. General Work Contractor shall complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or portion of Project:

1. Wash all transparent materials including mirrors and glass in doors and windows (inside and out).
2. Vacuum clean carpeting and epoxy flooring.
3. Wash & wax resilient tile floors.
4. Wash and polish all terrazzo and ceramic tile.
5. Dust/ clean all finished surfaces including casework, window sills, toilet partitions/ accessories, hardware, specialties, etc.
6. Restoration of any lawn areas disturbed by construction operations.

C. Mechanical Work Contractor shall complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or portion of Project:
1. Restoration of any lawn areas disturbed by construction operations.
2. Replace disposable filters on HVAC units. Clean permanent air filters.
3. Clean ducts, blowers and coils if dusty/ soiled during construction process
4. Final clean surfaces of all HVAC equipment including dust, paint, taping compound, mortar droppings, etc. (Unit ventilators, unit heaters, convectors, fintube, diffusers/ grills, etc).

D. Electrical Work Contractor shall complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or portion of Project:

1. Clean light fixtures, lamps, globes & reflectors. Replace burned out bulbs, noisy starters, etc.
2. Clean surfaces of all electrical equipment.

3.3 RECYCLING DEMOLITION AND CONSTRUCTION WASTE, GENERAL

A. General: Recycle paper and beverage containers used by on-site workers.

B. Procedures: Separate recyclable waste from other waste materials, trash, and debris. Separate recyclable waste by type.

1. Provide appropriately marked containers or bins for controlling recyclable waste until removed from Project site. Include list of acceptable and unacceptable materials at each container and bin.

2. Remove recyclable waste from Owner's property and transport to recycling receiver or processor.

3.4 RECYCLING DEMOLITION AND CONSTRUCTION WASTE

A. Recycle demolition and construction waste at local recycling centers where reasonable.

3.5 DISPOSAL OF WASTE

A. General: Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to authorities having jurisdiction.

B. Disposal: Remove waste materials from Owner's property and legally dispose of them.

END OF SECTION 017423

SECTION 01 77 00 - EXECUTION AND CLOSEOUT REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for contract closeout including, but not limited to, the following:

1. Inspection procedures.
2. Project record document submittal.
3. Operation and maintenance manual submittal.
4. Submittal of warranties.
5. Final cleaning.

B. Closeout requirements for specific construction activities are included in the appropriate Sections.

C. Multiple Prime Contracts: Provisions of this Section apply to the construction activities of each Prime Contractor.

1.3 SUBSTANTIAL COMPLETION

A. Preliminary Procedures: Before requesting inspection for certification of Substantial Completion, complete the following. List exceptions in the request.

1. In the Application for Payment that coincides with, or first follows, the date Substantial Completion is claimed, show 100 percent completion for the portion of the Work claimed as substantially complete.

    a. Include supporting documentation for completion as indicated in these Contract Documents and a statement showing an accounting of changes to the Contract Sum.
    b. If 100 percent completion cannot be shown, include a list of incomplete items, the value of incomplete construction, and reasons the Work is not complete.

2. Advise the Owner of pending insurance changeover requirements.
3. Submit specific warranties, workmanship bonds, maintenance agreements, final certifications, and similar documents.
4. Obtain and submit releases enabling the Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.
5. Submit record drawings, maintenance manuals, final project photographs, damage or settlement surveys, property surveys, and similar final record information.

6. Deliver tools, spare parts, extra stock, and similar items.
7. Make final changeover of permanent locks and transmit keys to the Owner. Advise the Owner's personnel of changeover in security provisions.
8. Complete startup testing of systems and instruction of the Owner's operation and maintenance personnel. Discontinue and remove temporary facilities from the site, along with mockups, construction tools, and similar elements.
9. Complete final cleanup requirements, including touchup painting.
10. Touch up and otherwise repair and restore marred, exposed finishes.

B. Inspection Procedures: On receipt of a request for inspection, the Architect will either proceed with inspection or advise the Contractor of unfilled requirements. The Architect will prepare the Certificate of Substantial Completion following inspection or advise the Contractor of construction that must be completed or corrected before the certificate will be issued.

1. The Architect will repeat inspection when requested and assured that the Work is substantially complete.
2. Results of the completed inspection will form the basis of requirements for final acceptance.

1.4 FINAL ACCEPTANCE

A. Preliminary Procedures: Before requesting final inspection for certification of final acceptance and final payment, complete the following. List exceptions in the request.

1. Submit the final payment request with releases and supporting documentation not previously submitted and accepted. Include insurance certificates for products and completed operations where required.
2. Submit an updated final statement, accounting for final additional changes to the Contract Sum.
3. Submit a certified copy of the Architect's final inspection list of items to be completed or corrected, endorsed and dated by the Architect. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance and shall be endorsed and dated by the Architect.
4. Submit final meter readings for utilities, a measured record of stored fuel, and similar data as of the date of Substantial Completion or when the Owner took possession of and assumed responsibility for corresponding elements of the Work.
5. Submit consent of surety to final payment.
6. Submit a final liquidated damages settlement statement.
7. Submit evidence of final, continuing insurance coverage complying with insurance requirements.

B. Re-inspection Procedure: The Architect will re-inspect the Work upon receipt of notice that the Work, including inspection list items from earlier inspections, has been completed, except for items whose completion is delayed under circumstances acceptable to the Architect.

1. Upon completion of re-inspection, the Architect will prepare a certificate of final acceptance. If the Work is incomplete, the Architect will advise the Contractor of Work that is incomplete or of obligations that have not been fulfilled but are required for final acceptance.
2. If necessary, re-inspection will be repeated, but may be chargeable to the Owner and back-chargeable to the Contractor in conditions within his control.

1.5 RECORD DOCUMENT SUBMITTALS

A. General: Do not use record documents for construction purposes. Protect record documents from deterioration and loss in a secure, fire-resistant location. Provide access to record documents for the Architect's reference during normal working hours.

B. Record Drawings: Maintain a clean, undamaged set of blue or black line white-prints of Contract Drawings and Shop Drawings. Mark the set to show the actual installation where the installation varies substantially from the Work as originally shown. Mark which drawing is most capable of showing conditions fully and accurately. Where Shop Drawings are used, record a cross-reference at the corresponding location on the Contract Drawings. Give particular attention to concealed elements that would be difficult to measure and record at a later date.

1. Mark record sets with red erasable pencil. Use other colors to distinguish between variations in separate categories of the Work.
2. Mark new information that is important to the Owner but was not shown on Contract Drawings or Shop Drawings.
3. Note related change-order numbers where applicable.
4. Organize record drawing sheets into manageable sets. Bind sets with durable-paper cover sheets; print suitable titles, dates, and other identification on the cover of each set.

C. Record Specifications: Maintain one complete copy of the Project Manual, including addenda. Include with the Project Manual one copy of other written construction documents, such as Change Orders and modifications issued in printed form during construction.

1. Mark these documents to show substantial variations in actual Work performed in comparison with the text of the Specifications and modifications.
2. Give particular attention to substitutions and selection of options and information on concealed construction that cannot otherwise be readily discerned later by direct observation.
3. Note related record drawing information and Product Data.
4. Upon completion of the Work, submit record Specifications to the Architect for the Owner's records.

D. Record Product Data: Maintain one copy of each Product Data submittal. Note related Change Orders and markup of record drawings and Specifications.

1. Mark these documents to show significant variations in actual Work performed in comparison with information submitted. Include variations in products delivered to the site and from the manufacturer's installation instructions and recommendations.
2. Give particular attention to concealed products and portions of the Work that cannot otherwise be readily discerned later by direct observation.
3. Upon completion of markup, submit complete set of record Product Data to the Architect for the Owner's records.

E. Record Sample Submitted: Immediately prior to Substantial Completion, the Contractor shall meet with the Architect and the Owner's personnel at the Project Site to determine which Samples are to be transmitted to the Owner for record purposes. Comply with the Owner's instructions regarding delivery to the Owner's Sample storage area.

F. Miscellaneous Record Submittals: Refer to other Specification Sections for requirements of miscellaneous record keeping and submittals in connection with actual performance of the Work. Immediately prior to the date or dates of Substantial Completion, complete miscellaneous records and place in good order. Identify miscellaneous records properly and

bind or file, ready for continued use and reference. Submit to the Architect for the Owner's records.

G. Maintenance Manuals: 3 copies required. Organize operation and maintenance data into suitable sets of manageable size. Bind properly indexed data in individual, heavy-duty, 2-3 inch, 3-ring, vinyl-covered binders, with pocket folders for folded sheet information. Mark appropriate identification on front and spine of each binder. Include the following types of information:

1. Emergency instructions.
2. Spare parts list.
3. Copies of warranties.
4. Wiring diagrams.
5. Recommended "turn-around" cycles.
6. Inspection procedures.
7. Shop Drawings and Product Data.
8. Fixture lamping schedule.

H. Waivers, guarantees, certification letters, AIA documents, etc.: See checklist attachment at the end of this section

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 CLOSEOUT PROCEDURES

A. Operation and Maintenance Instructions: Arrange for each Installer of equipment that requires regular maintenance to meet with the Owner's personnel to provide instruction in proper operation and maintenance. Provide instruction by manufacturer's representatives if installers are not experienced in operation and maintenance procedures. Include a detailed review of the following items:

1. Maintenance manuals.
2. Record documents.
3. Spare parts and materials.
4. Tools.
5. Lubricants.
6. Fuels.

7. Identification systems.

8. Control sequences.

9. Hazards.

10. Cleaning.

11. Warranties and bonds.

12. Maintenance agreements and similar continuing commitments.

B. As part of instruction for operating equipment, demonstrate the following procedures:

1. Startup.

2. Shutdown.

3. Emergency operations.

4. Noise and vibration adjustments.

5. Safety procedures.

6. Economy and efficiency adjustments.

7. Effective energy utilization.

C. Record "As-Built" Drawings

1. Upon completion of the work, and review of the record drawings by the Architect, prepare a final set of record drawings using reproducible mylar or vellum. Submit final set of transparencies to Architect.

2. The cost of furnishing above prints and preparing these record drawings shall be included in the contract price

3.2 FINAL CLEANING

A. General: The General Conditions require general cleaning during construction. Regular site cleaning is included in Division 1 Section “Temporary Facilities and Controls."

B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to the condition expected in a normal, commercial building cleaning and maintenance program. Comply with manufacturer's instructions.

1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion.

a. Remove labels that are not permanent labels.

b. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other substances that are noticeable vision-

obscuring materials. Replace chipped or broken glass and other damaged transparent materials.

c. Clean exposed exterior and interior hard-surfaced finishes to a dust-free condition, free of stains, films, and similar foreign substances. Restore reflective surfaces to their original condition. Leave concrete floors broom clean. Vacuum carpeted surfaces.

d. Wipe surfaces of mechanical and electrical equipment. Remove excess lubrication and other substances. Clean plumbing fixtures to a sanitary condition. Clean light fixtures and lamps.

e. Clean the site, including landscape development areas, of rubbish, litter, and other foreign substances. Sweep paved areas broom clean; remove stains, spills, and other foreign deposits. Rake grounds that are neither paved nor planted to a smooth, even-textured surface.

C. Pest Control: Engage an experienced, licensed exterminator to make a final inspection and rid the Project of rodents, insects, and other pests.

D. Removal of Protection: Remove temporary protection and facilities installed for protection of the Work during construction.

E. Compliance: Comply with regulations of authorities having jurisdiction and safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on the Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from the site and dispose of lawfully.

1. Where extra materials of value remain after completion of associated Work, they become the Owner's property. Dispose of these materials as directed by the Owner.

3.3 DEMONSTRATION AND TRAINING

A. Engage qualified instructors to instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system. Arrange for three separate days of training, each separated by a minimum of two weeks covering all systems and equipment. Include a detailed review of the following:

1. Include instruction for basis of system design and operational requirements, review of documentation, emergency procedures, operations, adjustments, troubleshooting, maintenance, and repairs.

2. All owner training sessions to be recorded to DVD by the contractor and shall be of sufficient quality to allow the DVD to serve as a training guide for new employees. Contractor will provide 3 copies of each DVD in their closeout submittal.

3.4 CLOSEOUT CHECKLIST

A. See attached checklist for required wage & supplements, lien release, guarantee / warranties, etc.

END OF SECTION 017700

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SECTION 01 77 01 - CHECKLIST FOR PROJECT CLOSEOUT AND PROCESSING OF FINAL PAYMENT

PART 1 - GENERAL

1.1 Final payment will not be processed until all items indicated are received in accordance with Section 01 77 00 - EXECUTION AND CLOSEOUT REQUIREMENTS.

1.2 Close-Out Submittals:

1. [ ] Wage & Supplements Verification Form from prime and subcontractors (copy attached).
2. [ ] Three (3) bound, hard cover, 3-ring binder brochures of Operation and Maintenance. Manuals for all equipment installed on the project:
3. [ ] Typed or printed instructions covering the care and operations of equipment and systems furnished and installed.
4. [ ] Manufacturers instruction books, diagrams, spare parts lists covering all equipment.
5. [ ] Instruction of Owner's Representative in care and maintenance of new equipment.
6. [ ] All approved shop drawings.
7. [ ] Certificates of compliance and inspection. (Where applicable - electric, elevator, etc.)
8. [ ] Spare parts and Maintenance Materials.
9. [ ] Evidence of compliance with requirements of governing authorities (Certificates of Inspection for Electrical).
10. [ ] Certificates of insurance for products and completed operations.
11. [ ] Notarized statement that only non-asbestos materials were installed on this project.
12. [ ] Fully executed certificate of substantial completion: AIA G734.
13. [ ] Contractor's written Two-year warranty and extended warranties (if any required).
14. [ ] Project Record Documents: Section 01 7700.
15. [ ] As-Built Drawings.

1.3 Evidence of Payments and Release of Liens:

1. [ ] Contractor's Affidavit of Payment of Debts and Claims: AIA G706.
2. [ ] Contractor's Affidavit of Release of Liens - AIA G706A with:
3. [ ] Separate written releases of waivers and liens for subcontractors, suppliers, and others with lien rights against the property of owner, together with a list of those parties – AIA G706A.
4. [ ] Contractor's written release or waiver of lien upon payment to the Contractor pursuant to New York State lien law.
5. [ ] Consent of Surety to Final Payment: AIA G707.

END OF SECTION 017701

Nanuet Union Free School District

Contractor Wage and Supplement Certification

I _____ am an officer

of_____ (Prime Contractor)

and I am duly authorized to make this affidavit for the Public Contract for the Nanuet Union Free School District.

That I fully comprehend the terms and provisions of section 220-1 of the Labor Law.

That I have been issued a copy of the schedule of Wages and Supplements, as specified in the project manual.

That I agree to pay the applicable Prevailing Wage and will pay or provide the supplements specified.

_____ _____
Contractor Signature

_____
Print Name

_____
President

ACKNOWLEDGMENT:

STATE OF NEW YORK
COUNTY OF _____:SS.:

On this _____ day of _____, 20___before me personally came

_____ to me known and known to me to be the person described in and who executed the foregoing instrument and acknowledged that he executed the same.

_____
Notary Public

_____
County

Nanuet Union Free School District

Subcontractor Wage and Supplement Certification

That I am an officer of _____ and am duly authorized to make

this affidavit on behalf of the Subcontract to _____

(Prime Contractor) on Public Contract for the Nanuet Union Free School District.

That I fully comprehend the terms and provisions of section 220-1 of the Labor Law.

That I have been issued a copy of the schedule of Wages and Supplements, as specified in the project manual.

That I agree to pay the applicable Prevailing Wage and will pay or provide the supplements specified.

_____ _____
Subcontractor Signature

_____
Print Name

_____
President

ACKNOWLEDGMENT:

STATE OF NEW YORK
COUNTY OF _____:SS.:

On this _____ day of _____, 20___before me personally came

_____ to me known and known to me to be the person described in and who executed the foregoing instrument and acknowledged that he executed the same.

_____
Notary Public

_____
County

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SECTION 01 78 23 - OPERATION AND MAINTENANCE DATA

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for preparing operation and maintenance manuals, including the following:

1. Operation and maintenance documentation directory.
2. Emergency manuals.
3. Operation manuals for systems, subsystems, and equipment.
4. Maintenance manuals for the care and maintenance of products, materials, and finishes and systems and equipment.

1.3 DEFINITIONS

A. System: An organized collection of parts, equipment, or subsystems united by regular interaction.

B. Subsystem: A portion of a system with characteristics similar to a system.

1.4 SUBMITTALS

A. Initial Submittal: Submit 2 draft copies of each manual at least 15 days before requesting inspection for Substantial Completion. Include a complete operation and maintenance directory. Architect will return one copy of draft and mark whether general scope and content of manual are acceptable.

B. Final Submittal: Submit four of each manual in final form at least 15 days before final inspection. Architect will return copy with comments within 15 days after final inspection.

1.5 COORDINATION

A. Where operation and maintenance documentation includes information on installations by more than one factory-authorized service representative, assemble and coordinate information furnished by representatives and prepare manuals.

PART 2 - PRODUCTS

2.1 OPERATION AND MAINTENANCE DOCUMENTATION DIRECTORY

A. Organization: Include a section in the directory for each of the following:

1. List of documents.
2. List of systems.
3. List of equipment.
4. Table of contents.

B. List of Systems and Subsystems: List systems alphabetically. Include references to operation and maintenance manuals that contain information about each system.

C. List of Equipment: List equipment for each system, organized alphabetically by system. For pieces of equipment not part of system, list alphabetically in separate list.

D. Tables of Contents: Include a table of contents for each emergency, operation, and maintenance manual.

E. Identification: In the documentation directory and in each operation and maintenance manual, identify each system, subsystem, and piece of equipment with same designation used in the Contract Documents. If no designation exists, assign a designation according to ASHRAE Guideline 4, "Preparation of Operating and Maintenance Documentation for Building Systems."

2.2 MANUALS, GENERAL

A. Organization: Unless otherwise indicated, organize each manual into a separate section for each system and subsystem, and a separate section for each piece of equipment not part of a system. Each manual shall contain the following materials, in the order listed:

1. Title page.
2. Table of contents.
3. Manual contents.

B. Title Page: Enclose title page in transparent plastic sleeve. Include the following information:

1. Subject matter included in manual.
2. Name and address of Project.
3. Name and address of Owner.
4. Date of submittal.
5. Name, address, and telephone number of Contractor.
6. Name and address of Architect.
7. Cross-reference to related systems in other operation and maintenance manuals.

C. Table of Contents: List each product included in manual, identified by product name, indexed to the content of the volume, and cross-referenced to Specification Section number in Project Manual.

1. If operation or maintenance documentation requires more than one volume to accommodate data, include comprehensive table of contents for all volumes in each volume of the set.

D. Manual Contents: Organize into sets of manageable size. Arrange contents alphabetically by system, subsystem, and equipment. If possible, assemble instructions for subsystems, equipment, and components of one system into a single binder.

1. Binders: Heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, sized to hold 8-1/2 by11 inch paper; with clear plastic sleeve on spine to hold label describing contents and with pockets inside covers to hold folded oversize sheets.
   a. If two or more binders are necessary to accommodate data of a system, organize data in each binder into groupings by subsystem and related components. Cross-reference other binders if necessary to provide essential information for proper operation or maintenance of equipment or system.
   b. Identify each binder on front and spine, with printed title "OPERATION AND MAINTENANCE MANUAL," Project title or name, and subject matter of contents. Indicate volume number for multiple-volume sets.
2. Dividers: Heavy-paper dividers with plastic-covered tabs for each section. Mark each tab to indicate contents. Include typed list of products and major components of equipment included in the section on each divider, cross-referenced to Specification Section number and title of Project Manual.
3. Protective Plastic Sleeves: Transparent plastic sleeves designed to enclose diagnostic software diskettes for computerized electronic equipment.
4. Supplementary Text: Prepared on 8-1/2 by 11 inch white bond paper.
5. Drawings: Attach reinforced, punched binder tabs on drawings and bind with text.
   a. If oversize drawings are necessary, fold drawings to same size as text pages and use as foldouts.
   b. If drawings are too large to be used as foldouts, fold and place drawings in labeled envelopes and bind envelopes in rear of manual. At appropriate locations in manual, insert typewritten pages indicating drawing titles, descriptions of contents, and drawing locations.

2.3 EMERGENCY MANUALS

A. Content: Organize manual into a separate section for each of the following:

1. Type of emergency.
2. Emergency instructions.
3. Emergency procedures.

B. Type of Emergency: Where applicable for each type of emergency indicated below, include instructions and procedures for each system, subsystem, piece of equipment, and component:

1. Fire.
2. Flood.
3. Gas leak.
4. Water leak.
5. Power failure.
6. Water outage.
7. System, subsystem, or equipment failure.
8. Chemical release or spill.

C. Emergency Instructions: Describe and explain warnings, trouble indications, error messages, and similar codes and signals. Include responsibilities of Owner's operating personnel for notification of Installer, supplier, and manufacturer to maintain warranties.

D. Emergency Procedures: Include the following, as applicable:

1. Instructions on stopping.
2. Shutdown instructions for each type of emergency.
3. Operating instructions for conditions outside normal operating limits.
4. Required sequences for electric or electronic systems.
5. Special operating instructions and procedures.

2.4 OPERATION MANUALS

A. Content: In addition to requirements in this Section, include operation data required in individual Specification Sections and the following information:

1. System, subsystem, and equipment descriptions.
2. Performance and design criteria if Contractor is delegated design responsibility.
3. Operating standards.
4. Operating procedures.
5. Operating logs.
6. Wiring diagrams.
7. Control diagrams.
8. Piped system diagrams.
9. Precautions against improper use.
10. License requirements including inspection and renewal dates.

B. Descriptions: Include the following:

1. Product name and model number.
2. Manufacturer's name.
3. Equipment identification with serial number of each component.
4. Equipment function.
5. Operating characteristics.
6. Limiting conditions.
7. Performance curves.
8. Engineering data and tests.
9. Complete nomenclature and number of replacement parts.

C. Operating Procedures: Include the following, as applicable:

1. Startup procedures.
2. Equipment or system break-in procedures.
3. Routine and normal operating instructions.
4. Regulation and control procedures.
5. Instructions on stopping.
6. Normal shutdown instructions.
7. Seasonal and weekend operating instructions.

8. Required sequences for electric or electronic systems.
9. Special operating instructions and procedures.

D. Systems and Equipment Controls: Describe the sequence of operation, and diagram controls as installed.

E. Piped Systems: Diagram piping as installed, and identify color-coding where required for identification.

2.5 PRODUCT MAINTENANCE MANUAL

A. Content: Organize manual into a separate section for each product, material, and finish. Include source information, product information, maintenance procedures, repair materials and sources, and warranties and bonds, as described below.

B. Source Information: List each product included in manual, identified by product name, and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual.

C. Product Information: Include the following, as applicable:

1. Product name and model number.
2. Manufacturer's name.
3. Color, pattern, and texture.
4. Material and chemical composition.
5. Reordering information for specially manufactured products.

D. Maintenance Procedures: Include manufacturer's written recommendations and the following:

1. Inspection procedures.
2. Types of cleaning agents to be used and methods of cleaning.
3. List of cleaning agents and methods of cleaning detrimental to product.
4. Schedule for routine cleaning and maintenance.
5. Repair instructions.

E. Repair Materials and Sources: Include lists of materials and local sources of materials and related services.

F. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

1. Include procedures to follow and required notifications for warranty claims.

2.6 SYSTEMS AND EQUIPMENT MAINTENANCE MANUAL

A. Content: For each system, subsystem, and piece of equipment not part of a system, include source information, manufacturers' maintenance documentation, maintenance procedures, maintenance

and service schedules, spare parts list and source information, maintenance service contracts, and warranty and bond information, as described below.

B. Source Information: List each system, subsystem, and piece of equipment included in manual, identified by product name, and arranged to match manual's table of contents. For each product, list name, address, and telephone number of Installer or supplier and maintenance service agent, and cross-reference Specification Section number and title in Project Manual.

C. Manufacturers' Maintenance Documentation: Manufacturers' maintenance documentation including the following information for each component part or piece of equipment:

1. Standard printed maintenance instructions and bulletins.
2. Drawings, diagrams, and instructions required for maintenance, including disassembly and component removal, replacement, and assembly.
3. Identification and nomenclature of parts and components.
4. List of items recommended to be stocked as spare parts.

D. Maintenance Procedures: Include the following information and items that detail essential maintenance procedures:

1. Test and inspection instructions.
2. Troubleshooting guide.
3. Precautions against improper maintenance.
4. Disassembly; component removal, repair, and replacement; and reassembly instructions.
5. Aligning, adjusting, and checking instructions.
6. Demonstration and training videotape, if available.

E. Maintenance and Service Schedules: Include service and lubrication requirements, list of required lubricants for equipment, and separate schedules for preventive and routine maintenance and service with standard time allotment.

1. Scheduled Maintenance and Service: Tabulate actions for daily, weekly, monthly, quarterly, semiannual, and annual frequencies.
2. Maintenance and Service Record: Include manufacturers' forms for recording maintenance.

F. Spare Parts List and Source Information: Include lists of replacement and repair parts, with parts identified and cross-referenced to manufacturers' maintenance documentation and local sources of maintenance materials and related services.

G. Maintenance Service Contracts: Include copies of maintenance agreements with name and telephone number of service agent.

H. Warranties and Bonds: Include copies of warranties and bonds and lists of circumstances and conditions that would affect validity of warranties or bonds.

1. Include procedures to follow and required notifications for warranty claims.

PART 3 - EXECUTION

3.1 MANUAL PREPARATION

A. Operation and Maintenance Documentation Directory: Prepare a separate manual that provides an organized reference to emergency, operation, and maintenance manuals.

B. Emergency Manual: Assemble a complete set of emergency information indicating procedures for use by emergency personnel and by Owner's operating personnel for types of emergencies indicated.

C. Product Maintenance Manual: Assemble a complete set of maintenance data indicating care and maintenance of each product, material, and finish incorporated into the Work.

D. Operation and Maintenance Manuals: Assemble a complete set of operation and maintenance data indicating operation and maintenance of each system, subsystem, and piece of equipment not part of a system.

1. Engage a factory-authorized service representative to assemble and prepare information for each system, subsystem, and piece of equipment not part of a system.
2. Prepare a separate manual for each system and subsystem, in the form of an instructional manual for use by Owner's operating personnel.

E. Manufacturers' Data: Where manuals contain manufacturers' standard printed data, include only sheets pertinent to product or component installed. Mark each sheet to identify each product or component incorporated into the Work. If data include more than one item in a tabular format, identify each item using appropriate references from the Contract Documents. Identify data applicable to the Work and delete references to information not applicable.

1. Prepare supplementary text if manufacturers' standard printed data are not available and where the information is necessary for proper operation and maintenance of equipment or systems.

F. Drawings: Prepare drawings supplementing manufacturers' printed data to illustrate the relationship of component parts of equipment and systems and to illustrate control sequence and flow diagrams. Coordinate these drawings with information contained in Record Drawings to ensure correct illustration of completed installation.

1. Do not use original Project Record Documents as part of operation and maintenance manuals.
2. Comply with requirements of newly prepared Record Drawings in Division 01 Section "Project Record Documents."

G. Comply with Division 01 Section "Closeout Procedures" for schedule for submitting operation and maintenance documentation.

END OF SECTION 017823

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SECTION 017836 - WARRANTIES

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes administrative and procedural requirements for warranties required by the Contract Documents, including manufacturer's standard warranties on products and special warranties.
   1. Refer to the General Conditions for terms of the Contractor's period for correction of the Work.
B. Related Sections: The following Sections contain requirements that relate to this Section:
   1. Division 1 Section "Submittals" specifies procedures for submitting warranties.
   2. Division 1 Section "Execution and closeout requirements" specifies contract closeout procedures.
   3. Divisions 2 through 33 Sections for specific requirements for warranties on products and installations specified to be warranted.
   4. Certifications and other commitments and agreements for continuing services to Owner are specified elsewhere in the Contract Documents.
C. Disclaimers and Limitations: Manufacturer's disclaimers and limitations on product warranties do not relieve the Contractor of the warranty on the Work that incorporates the products. Manufacturer's disclaimers and limitations on product warranties do not relieve suppliers, manufacturers, and subcontractors required to countersign special warranties with the Contractor.
D. Separate Prime Contracts: Each prime contractor is responsible for warranties related to its own contract.

1.2 DEFINITIONS

A. Standard product warranties are preprinted written warranties published by individual manufacturers for particular products and are specifically endorsed by the manufacturer to the Owner.
B. Special warranties are written warranties required by or incorporated in the Contract Documents, either to extend time limits provided by standard warranties or to provide greater rights for the Owner.

1.3 WARRANTY REQUIREMENTS

A. Related Damages and Losses: When correcting failed or damaged warranted construction, remove and replace construction that has been damaged as a result of such failure or must be removed and replaced to provide access for correction of warranted construction.
B. Reinstatement of Warranty: When Work covered by a warranty has failed and been corrected by replacement or rebuilding, reinstate the warranty by written endorsement. The reinstated warranty shall be equal to the original warranty with an equitable adjustment for depreciation.
C. Replacement Cost: Upon determination that Work covered by a warranty has failed, replace or rebuild the Work to an acceptable condition complying with requirements of the Contract Documents. The Contractor is responsible for the cost of replacing or rebuilding defective Work regardless of whether the Owner has benefited from use of the Work through a portion of its anticipated useful service life.
D. Owner's Recourse: Expressed warranties made to the Owner are in addition to implied warranties and shall not limit the duties, obligations, rights, and remedies otherwise available under the law. Expressed warranty periods shall not be interpreted as limitations on the time in which the Owner can enforce such other duties, obligations, rights, or remedies.

1. Rejection of Warranties: The Owner reserves the right to reject warranties and to limit selection to products with warranties not in conflict with requirements of the Contract Documents.

E. Where the Contract Documents require a special warranty, or similar commitment on the Work or part of the Work, the Owner reserves the right to refuse to accept the Work, until the Contractor presents evidence that entities required to countersign such commitments are willing to do so.

1.4 SUBMITTALS

A. Submit written warranties to the Architect prior to the date certified for Substantial Completion. If the Architect's Certificate of Substantial Completion designates a commencement date for warranties other than the date of Substantial Completion for the Work, or a designated portion of the Work, submit written warranties upon request of the Architect.
   1. When a designated portion of the Work is completed and occupied or used by the Owner, by separate agreement with the Contractor during the construction period, submit properly executed warranties to the Architect within 15 days of completion of that designated portion of the Work.

B. When the Contract Documents require the Contractor, or the Contractor and a subcontractor, supplier or manufacturer to execute a special warranty, prepare a written document that contains appropriate terms and identification, ready for execution by the required parties. Submit a draft to the Owner, through the Architect, for approval prior to final execution.
   1. Refer to Divisions 2 through 16 Sections for specific content requirements and particular requirements for submitting special warranties.

C. Form of Submittal: At Final Completion compile 2 copies of each required warranty properly executed by the Contractor, or by the Contractor, subcontractor, supplier, or manufacturer. Organize the warranty documents into an orderly sequence based on the table of contents of the Project Manual.

D. Bind warranties and bonds in heavy-duty, commercial-quality, durable 3-ring, vinyl-covered loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch(115-by-280-mm) paper.
   1. Provide heavy paper dividers with celluloid covered tabs for each separate warranty. Mark the tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product, and the name, address, and telephone number of the Installer.
   2. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project title or name, and name of the Contractor.
   3. When warranted construction requires operation and maintenance manuals, provide additional copies of each required warranty, as necessary, for inclusion in each required manual.

PART 2 - PRODUCTS (Not used)

PART 3 - EXECUTION (Not used)

END OF SECTION 017836

Request for Shutdown

PROJECT	Nanuet Union Free School District – Elevator Addition Project	**DATE**	
		CONTRACT NO.	
KSQ PROJ. # 2111005.01		**CONTRACT FOR**	

CONTRACTOR REQUEST		
Contractor Name:		
Foreman:		Emergency Phone:
Type (electrical, etc.):		
Area Affected (room, building, etc.):		
Reason for Shutdown:		
1) Date Requested	From Time:	To Time:
2) Date Requested	From Time:	To Time:
3) Date Requested	From Time:	To Time:
4) Date Requested	From Time:	To Time:
Send to: **Jacobs**, **ATTN:**		

OWNER'S REMARKS

Owner's Remarks:

Owner's Signature of Approval: _____ Date: _____

PLEASE NOTIFY ALL AFFECTED!

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Daily Report Cover

PROJECT	Nanuet Union Free School District – Elevator Addition Project	**DATE**
		CONTRACT NO.
KSQ PROJ. # 2111005.01		**CONTRACT FOR**

	7:00 AM	Noon	3:30 PM
Temperature			
Weather			

PERSONNEL (list by trade or attach daily time sheet)

SUBCONTRACTORS / PERSONNEL

EQUIPMENT

Send to: Jacobs

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Two Week Look-Ahead Schedule

PROJECT Nanuet Union Free School District – High School Elevator Addition Project	**DATE** **CONTRACT #**
KSQ PROJ. # 2111005.01	**WORK AREA**

MONTH/YEAR _____

DATES											COMMENTS/NOTES

Send to: Jacobs

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Submittal Schedule

PROJECT: NANUET UNION FREE SCHOOL DISTRICT

KSQ PROJ. # 2111005.01

SECTION	SUBMITTAL TYPE												DATE SUBMIT	DATE RETURN	ACTION	COMMENT
	Product Data	Shop Drawings	Samples	Certificates	Qualification Data	Test Reports	Pre-Install conference	Maintenance Data	Warranty	Inspection Report	O&M Data	Demo & Training				

SECTION 02 31 32 – GEOTECHNICAL DATA

PART 1 - GENERAL

1.1 GEOTECHNICAL DATA

A. This Document with its referenced attachments is part of the Procurement and Contracting Requirements for Project. They provide Owner's information for Bidders' convenience and are intended to supplement rather than serve in lieu of Bidders' own investigations. They are made available for Bidders' convenience and information but are not a warranty of existing conditions. This Document and its attachments are not part of the Contract Documents.

1. Geotechnical Recommendations for the Proposed High School Additions for Nanuet Schools Nanuet, New York, prepared by Daniel G. Loucks, P.E. Geotechnical Engineering, dated March 3, 2022.

PART 2 – MATERIALS (Not Used)

PART 3 – EXECUTION (Not Used)

END OF SECTION 02 31 32

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DANIEL G. LOUCKS, P.E.

GEOTECHNICAL ENGINEERING

3 March 2022

Mario Spagnuolo
Nanuet Union Free School District

Re: Geotechnical Recommendations for the Proposed High School Additions for Nanuet Schools
Nanuet, New York
File No. 4060

I have included recommendations for the allowable soil bearing pressures for designing the foundations for the project. These recommendations are based on the test pit information and my own experience.

The scope of my services is limited to observing the excavation of the test pits at the site and providing recommendations for the allowable soil bearing pressure for designing foundations for the proposed building. Recommendations for earthwork for the site have not been included. I also provided test pit logs for the proposed playgrounds at the elementary school.

The recommendations contained in this letter report are based on the information that was provided up to the date the letter report was completed. Any changes in the design of the project or changes to the recommendations provided in this letter report should be brought to my attention to determine if there needs to be any revision of the geotechnical recommendations. I am not responsible for any changes in the recommendations provided in this letter report unless I have provided written approval of the changes.

It is my understanding that the proposed additions will include an elevator and a new entrance. The elevator will extend two stories and the entrance will be single story with a slab on grade design. The loading will be less than 2 kips per foot. The settlement tolerances are slightly less than normal because the high school structures will be additions. I understand that the playground equipment will be lightly loaded and designed to be supported on piers. The footings and floor slab recommendations contained in the report consider up to 3/4 inch of total settlement and 1/2 inch of differential settlement within 20 feet acceptable.

The test pit investigation included the excavation of four (4) test pits at the sites. The test pit for the elevator encountered 9 feet of old sand with gravel fill adjacent to the existing foundation wall and footing. The edge of the footing extended approximately 12 inches out from the foundation wall. The test pit was not extended deeper due to the limitations of the equipment.

The test pit for the addition extended through old fill soils to a depth of approximately 5.5 feet where virgin sand with some gravel and a trace to some clayey silt was encountered. The top of the footing was encountered at 4.5 feet below the existing ground surface and it extended approximately 4 inches from the foundation wall.

14 AMBER WAY, BALLSTON SPA, NY 12020 ■ 518-369-9453 ■ E-MAIL: DGLGEOENG@GMAIL.COM

It is my understanding that the proposed elevator and entrance addition have been designed to be supported by spread footing foundations. All footings should rest on firm virgin, inorganic, soils or on controlled fill which, in turn, rests on these virgin materials. Footings can be designed for a maximum, net, allowable soil bearing pressure of 2500 psf.

As noted, there is approximately 9 feet of uncontrolled fill at the elevator location and a pipe that extends into the proposed location. I understand that the foundation wall will extend around the pipe. I recommend that a minimum off a 1 inch gap be placed, in the foundation wall, over the pipe to allow for settlements in the foundation for the elevator. The uncontrolled fill under the elevator foundation should be removed and replaced with controlled fill that extends a minimum of 5 feet past the edge of the footing.

Another foundation approach for the proposed elevator would be to support the elevator on helical piles that extend into the virgin soils and then support the bearing walls for the elevator on the helical piles. This approach would reduce the amount of over excavation required to properly support the foundation on controlled fill that in turn rests on virgin soils.

Footing subgrades should be tamped to compact any soils disturbed during the excavation process. The footing subgrade should be observed by me or a qualified engineer to verify that the subgrade conditions are similar to the soils described in the soil test pit logs and are adequate for the recommended allowable soil bearing pressure and that all the uncontrolled fill has been removed. If the footing subgrade soils become disturbed or saturated and soft all soft soils should be removed and replaced with controlled fill and I should be contacted.

A minimum footing width of 1.75 feet is recommended for load-bearing strip footings. Isolated footings should be at least 2.0 feet wide. Exterior footings or footings in unheated areas should have a minimum of 4.0 feet of embedment for protection from frost action. All fill placed within the proposed building should be placed in lifts as controlled fill.

I understand that for the playground areas that the equipment is designed to be supported on pier foundations. These piers should extend a minimum of 4 feet below grade for frost protection and should be a minimum of 1 foot in diameter. All piers should rest on firm undisturbed virgin soils. Pier can be designed to a maximum net allowable soil bearing pressure or 1500 psf.

If you have any questions, please call.

Yours truly,

Daniel G. Loucks
N.Y.P.E. 068389

Enc: Test Pit Logs

Test Pit Logs
Nanuet School District
Nanuet, NY
24 February 2022

Test Pit # 1 High School Elevator
0.0 – 9.0 ft Brown Sand, some Gravel, trace to some Clayey Silt (SM) FILL
No Water Observed
Top of 12 inch wide footing at 9.0 ft

Test Pit # 2 High School Entrance
0.0 – 0.5 ft Dark Brown Clayey Silt, some Sand (ML)Topsoil FILL
0.5 – 1.5 ft Brick, Mortar, Sand FILL
1.5 – 5.0 ft Brown Sand, trace to some Clayey Silt, Gravel (SM) FILL
5.0 – 5.5 ft Brown Sand, some Gravel, trace to some Clayey Silt (SM)
No Water Observed
Top of 4 inch wide footing at 4.5 ft

Test Pit # 3 Elementary School Front Playground
0.0 – 2.5 ft Brown Sand, some Gravel, trace to some Silt (SM) FILL
2.5 – 3.0 ft Dark Brown Sand, trace to some Clayey Silt (SM) Topsoil
3.0 – 4.0 ft Brown Sand, some Clayey Silt, trace to some Gravel (SM)
No Water Observed

Test Pit # 4 Elementary School Side Playground
0.0 – 1.5 ft Wood Chips FILL
1.5 – 1.5 ft Geotextile
1.5 – 1.8 ft Pea Stone (GP)
1.8 – 2.1 ft Asphalt Pavement
2.1 – 4.0 ft Brown Sand, some Gravel, trace to some Clayey Silt (SM)
No Water Observed

SECTION 02 33 13 – UNDERGROUND UTILITY LOCATOR SERVICE

PART 1 - GENERAL

1.1 DESCRIPTION

A. Contractor is to retain an independent utility locator service company with a minimum of five (5) years experience to field locate, mark, and stakeout existing underground utilities and service connections.

1. Include a minimum of 4 hours of “locator service” to locate underground utilities.

2. If required determine the exact location of utilities by hand excavated test pits or through vacuum methods. Support and protect all utilities to remain in place.

3. Contractor shall field locate, mark, and stakeout underground utilities prior to excavation.

4. Contractor will be responsible for the location of all utilities within areas of excavation, and all costs associated with the repair of utilities hit/damaged during construction.

5. Contractor shall locate and identify invert elevation of sewers at proposed connection points prior to installation of new pipes and structures.

1.2 SUBMITTALS

A. Submit detailed experience and qualifications description of underground utility locator service. Experience and qualifications package should include a description of the types of utility locator equipment and experience that can be provided.

1.3 DELIVERABLES

A. At the conclusion of this project, provide three (3) sets of paper and one (1) copy of electronic plans documenting all utilities located and identified. All documentation shall be referenced to existing data (horizontal and vertical) previously established.

1.4 COORDINATION AND SCHEDULING

A. General Location: Within areas of excavations all utilities shall be field located/marked.

B. Exact Location: The performance of hand excavated test pits or vacuum excavations to determine the utilities exact location shall be performed just prior to performing the work to minimize the time that excavated areas will be exposed to erosive conditions.

C. Coordinate work with Utility Providers and the District to minimize utility disruptions and facility operations. Utility Providers and the District shall be notified at least three (3) working days prior to performing the work and should be provided a schedule for the works progression.

PART 2 - (Not Used)

PART 3 - EXECUTION

3.1 WORK AREAS AND PERFORMANCE

A. The District may limit or restrict scheduling of the utility locator service based upon project progress.

END OF SECTION 02 33 13

SECTION 02 4100 – SELECTIVE DEMOLITION

PART 1 - GENERAL

SECTION INCLUDES

A. Selective demolition of building elements for alteration purposes.

1.1 SUMMARY

A. Section 01 1000 - Summary: Limitations on Contractor's use of site and premises.

B. Section 01 7700 - Execution and Closeout Requirements: Project conditions; protection of bench marks, survey control points, and existing construction to remain; reinstallation of removed products; temporary bracing and shoring.

1.2 REFERENCE STANDARDS

A. 29 CFR 1926 - U.S. Occupational Safety and Health Standards; current edition.

B. NFPA 241 - Standard for Safeguarding Construction, Alteration, and Demolition Operations; 2013.

1.3 SUBMITTALS

A. See Section 01 3300 - Administrative Requirements, for submittal procedures.

1.4 QUALITY ASURRANCE

A. Demolition Firm Qualifications: Company specializing in the type of work required.

PART 2 PRODUCTS

2.1 REPAIR MATERIALS

A. Use repair materials identical to existing materials. Where identical materials are unavailable or cannot be used for exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible.

B. Use materials whose installed performance equals or surpasses that of existing materials.

PART 3 EXECUTION

3.1 GENERAL PROCEDURES AND PROJECT CONDITIONS

A. Comply with applicable codes and regulations for demolition operations and safety of adjacent structures and the public.

1. Obtain required permits.
2. Comply with applicable requirements of NFPA 241.
3. Use of explosives is not permitted.
4. Take precautions to prevent catastrophic or uncontrolled collapse of structures to be removed; do not allow worker or public access within range of potential collapse of unstable structures.
5. Provide, erect, and maintain temporary barriers and security devices.
6. Use physical barriers to prevent access to areas that could be hazardous to workers or the public.
7. Conduct operations to minimize effects on and interference with adjacent structures and occupants.
8. Do not close or obstruct roadways or sidewalks without permit.
9. Conduct operations to minimize obstruction of public and private entrances and exits; do not obstruct required exits at any time; protect persons using entrances and exits from removal operations.

B. Do not begin removal until receipt of notification to proceed from Owner.

C. Do not begin removal until built elements to be salvaged or relocated have been removed.

D. 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.

E. Minimize production of dust due to demolition operations; do not use water if that will result in ice, flooding, sedimentation of public waterways or storm sewers, or other pollution.

F. If hazardous materials are discovered during removal operations, stop work and notify Architect and Owner; hazardous materials include regulated asbestos containing materials, lead, PCB's, and mercury.

G. Perform demolition in a manner that maximizes salvage and recycling of materials.

1. Comply with requirements of Section 01 7419 - Waste Management.
2. Dismantle existing construction and separate materials.
3. Set aside reusable, recyclable, and salvageable materials; store and deliver to collection point or point of reuse.

3.2 EXISTING UTILITIES

A. Coordinate work with utility companies; notify before starting work and comply with their requirements; obtain required permits.

B. Protect existing utilities to remain from damage.

C. Do not disrupt public utilities without permit from authority having jurisdiction.

D. 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.

3.3 SELECTIVE DEMOLITION FOR ALTERATIONS

A. Drawings showing existing construction and utilities are based on casual field observation and existing record documents only.

1. Verify that construction and utility arrangements are as shown.
2. Report discrepancies to Architect before disturbing existing installation.
3. Beginning of demolition work constitutes acceptance of existing conditions that would be apparent upon examination prior to starting demolition.

B. Separate areas in which demolition is being conducted from other areas that are still occupied.

1. Provide, erect, and maintain temporary dustproof partitions of construction specified in Section 01 5000 in locations indicated on drawings.

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 HVAC, Plumbing, Fire Protection, Electrical, and Telecommunications): 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.
4. Patch as specified for patching new work.

3.4 DEBRIS AND WASTE REMOVAL

A. Remove debris, junk, and trash from site.

B. Remove from site all materials not to be reused on site; comply with requirements of Section 01 7419 - Waste Management.

C. Leave site in clean condition, ready for subsequent work.

D. Clean up spillage and wind-blown debris from public and private lands.

END OF SECTION

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SECTION 02 82 00 – Asbestos Abatement Specification

PART 1 GENERAL

1.01 SCOPE OF WORK

A. This asbestos abatement Project will consist of the removal and disposal of asbestos containing materials (ACM) and Presumed ACM (PACM) regarding the elevator addition project at the Nanuet High School, 103 Church Street, Nanuet, NY as indicated in the asbestos removal plans.

B. The work shall include but not be limited to the removal of the below asbestos-containing materials (See Attachment 1 - project drawing HS-ASB1 for types, locations and approximate quantities per Green Path Environmental, Inc's asbestos survey report dated March 14, 2022). The asbestos abatement removal procedure will be in accordance with 12 NYCRR Part 56 - 8.6 for all interior work and 12 NYCRR Part 56 - 11.6 for all exterior work.

Nanuet High School – East Wing (First and Second Floors)

Location	Material	Estimated Quantity
Exterior Wall Foundation	Waterproofing Black Tar	240 Square Feet
Exterior Wall	Waterproofing Black Tar Paper Behind Brick	300 Square Feet
Exterior Windows Frame	Black Caulking	8 Square Feet
Interior Radiator - 1st Floor	Waterproofing Black Tar Paper Behind Metal Cover	13 Square Feet
Interior Radiator -1st Floor	Grey Pipe Insulation Between the Floors	2 Linear Feet
Interior Radiator – 2nd Floor	Waterproofing Black Tar Paper Behind Metal Cover	13 Square Feet
Interior Radiator – 2nd Floor	Grey Pipe Insulation Between the Floors	2 Linear Feet
	TOTAL ACM	**574 SF**
		4 LF

C. **The Contractor shall be aware of all conditions of the Project and is responsible for verifying quantities and locations of all Work to be performed. Failure to do so shall not relieve the Contractor of its obligation to furnish all labor and materials necessary to perform the Work.**

D. All Work shall be performed in strict accordance with the Project Documents and all governing codes, rules, and regulations. Where conflicts occur between the Project Documents and applicable codes, rules, and regulations, the more stringent shall apply.

E. Working hours shall be as required and approved by the Owner. Asbestos abatement activities including, but not limited to, work area preparation, gross removal activities, cleaning activities,

waste removal, etc. may need to be performed during 'off-hours' (including nights and weekends). In addition, multiple mobilizations may be required to perform the work identified in this project. The Contractor shall coordinate and schedule all Work with the facility and Owner's representative.

1.02 SPECIAL JOB CONDITIONS

A. Any special job conditions are described below.

1. The contractor shall field verify the amount of ACM and familiarize himself in all variable field conditions in the building before the submission of their bid. See drawings (HS-ASB1) for locations, types and approximate quantities.
2. Abatement activities shall be performed during weekdays and weekends and as permitted by owner.
3. The abatement contractor is responsible for filing and acquiring all notifications and variances in connection with this abatement work.
4. Any waste transported through the building shall use canvas carts covered and lined with plastic sheeting.
5. The contractor shall notify the local Fire Department of any obstruction to the outside leading to the exit stair, obstruction to any fire rated corridor and disengagement or obstruction to any exit signage or lighting system.
6. All connections/disconnections to existing electrical panels, fixtures, etc. shall be conducted by a licensed electrician/restricted asbestos handler.
7. Temporary water and power connections to internal sources shall be extended at ceiling level and disconnected when not in use.
8. The contractor shall assume that all components in direct contact with concealed and exposed ACM and/or assumed ACM is contaminated and is to be disposed of as ACM-containing waste. In lieu of disposing these materials as such, the contractor may opt to decontaminate these components if they are non-porous, and dispose of as regular C&D waste at no additional cost to the authority.
9. The asbestos contractor shall be responsible for protecting all areas (floor and fixed items) around the containment.
10. The asbestos contractor shall be responsible for all repairs to finish surfaces which are damaged during the course of the abatement work which are not included in the proposed scope of work.
11. Abatement will take place in the identified work areas separately and sequentially unless approved otherwise by the Owner.

1.03 PERMITS AND COMPLIANCE

A. The Contractor shall assume full responsibility and liability for compliance with all applicable Federal, State, and local laws, rules, and regulations pertaining to Work practices, protection of Workers, authorized visitors to the site, persons, and property adjacent to the Work.

B. Perform asbestos related Work in accordance with New York State Industrial Code Rule 56 (herein referred to as Code Rule 56), 40 CFR 61, and 29 CFR 1926. Where more stringent requirements are specified, adhere to the more stringent requirements.

C. The Contractor must maintain current licenses pursuant to New York State Department of Labor and Department of Environmental Conservation for all Work related to this Project, including the removal, handling, transport, and disposal of asbestos containing materials.

E. The Contractor must have and submit proof upon request that any persons employed by the Contractor to engage in or supervise Work on any asbestos Project have a valid NYS asbestos handling certificate pursuant to Code Rule 56.

F. Failure to adhere to the Project Documents shall constitute a breach of the Contract and the Owner shall have the right to and may terminate the Contract provided, however, the failure of the Owner to so terminate shall not relieve the Contractor from future compliance.

1.04 SUBMITTALS

A. Pre-Work Submittals: Within 7 days prior to the pre-construction conference, the Contractor shall submit 3 copies of the documents listed below, with 1 copy going directly to the Owner's representative for review and approval prior to the commencement of asbestos abatement activities:
   1. Contractor license issued by New York State Department of Labor.
   2. A list of Projects 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 firm's name, contact persons, address, and phone number.
   3. Progress Schedule:
      a. Show the complete sequence of abatement activities and the sequencing of Work within each building or building section.
      b. Show the dates for the beginning and completion of each major element of Work including substantial completion dates for each Work Area, building, or phase.
   4. Project Notifications: As required by Federal and State regulatory agencies together with proof of transmittal (i.e. certified mail return receipt).
   5. Building Occupant Notification: As required by regulatory agencies.
   6. Abatement Work Plan: Provide plans that clearly indicate the following:
      a. All Work Areas/containments numbered sequentially.
      b. Locations and types of all decontamination enclosures.
      c. Entrances and exits to the Work Areas/containments.
      d. Type of abatement activity/technique for each Work Area/containment.
      e. Number and location of negative air units and exhaust. Also provide calculations for determining number of negative air pressure units.
      f. Proposed location and construction of storage facilities and field office.
      g. Location of water and electrical connections to building services.
      h. Waste transport routes through the building to the waste storage container.
   7. Disposal Site/Landfill Permit from applicable regulatory agency.
   8. NYS Department of Environmental Conservation Waste Transporter Permit.

B. On-Site Submittals: Refer to Part 3.01.C for all submittals, documentation, and postings required to be maintained on-site during abatement activities.

C. Project Close-out Submittals: Within 30 days of the completion of each abatement phase, the Contractor shall submit 4 copies of the documents listed below. One set of the documents shall be transmitted to the Facility and one set to the Owner's representative for review and approval prior to the Contractor's final payment.
   1. **Originals** of all waste disposal manifests, seals, and disposal logs.
   2. OSHA compliance air monitoring records conducted during the Work.
   3. Daily progress log, including the entry/exit log.
   4. A list of all Workers used in the performance of the Project, including name, social security number, NYS DOL certification number and type of certification (i.e. supervisor, asbestos handler, etc.).
   5. For each Worker used in the performance of the Project, submit the Worker's Acknowledgment Statement.
   6. Disposal Site/Landfill Permit from applicable regulatory agency.
   7. Project notifications, amended notifications and any Variances.

1.05 PRE-CONSTRUCTION CONFERENCE

A. Prior to start of preparatory Work under this Contract, the Contractor shall attend a pre-construction conference attended by Owner, Facility Personnel, and Green Path Environmental, Inc (Environmental Consultant).

B. Agenda for this conference shall include but not necessarily be limited to:
   1. Contractor's scope of Work, Work plan, and schedule to include number of workers and shifts.
   2. Contractor's safety and health precautions including protective clothing and equipment and decontamination procedures.
   3. Environmental Consultant's duties, functions, and authority.
   4. Contractor's Work procedures including:
      a. Methods of job site preparation and removal methods.
      b. Respiratory protection.
      c. Disposal procedures.
      d. Cleanup procedures.
      e. Fire exits and emergency procedures.
   5. Contractor's required pre-work and on-site submittals, documentation, and postings.
   6. Contractor's plan for twenty-four (24) hour Project security both for prevention of theft and for barring entry of unauthorized personnel into Work Areas.
   7. Temporary utilities.
   8. Handling of furniture and other moveable objects.
   9. Storage of removed asbestos containing materials.
   10. Waste disposal requirements and procedures, including use of the Owner supplied waste manifest and container seals.

C. In conjunction with the conference the Contractor shall accompany the Owner and Environmental Consultant on a pre-construction walk-through documenting existing condition of finishes and furnishings, reviewing overall Work plan, location of fire exits, fire protection equipment, water supply and temporary electric tie-in.

1.06 APPLICABLE STANDARDS AND REGULATIONS

A. The Contractor shall comply with the following codes and standards, except where more stringent requirements are shown or specified:

B. Federal Regulations:
1. 29 CFR 1910.1001, "Asbestos" (OSHA)
2. 29 CFR 1910.1200, "Hazard Communication" (OSHA)
3. 29 CFR 1910.134, "Respiratory Protection" (OSHA)
4. 29 CFR 1910.145, "Specification for Accident Prevention Signs and Tags" (OSHA)
5. 29 CFR 1926, "Construction Industry" (OSHA)
6. 29 CFR 1926.1101, "Asbestos, Tremolite, Anthophyllite, and Actinolite" (OSHA)
7. 29 CFR 1926.500 "Guardrails, Handrails and Covers" (OSHA)
8. 40 CFR 61, Subpart A, "General Provisions" (EPA)
9. 40 CFR 61, Subpart M, "National Emission Standard for Asbestos" (EPA)
10. 49 CFR 171-172, Transportation Standards (DOT)

C. New York State Regulations:
1. 12 NYCRR, Part 56, "Asbestos", Industrial Code Rule 56 (DOL) (amended March 21, 2007).
2. 6 NYCRR, Parts 360, 364, Disposal and Transportation (DEC)
3. 10 NYCRR, Part 73, "Asbestos Safety Program Requirements" (DOH)

D. Standards and Guidance Documents:
1. American National Standard Institute (ANSI) Z88.2-80, Practices for Respiratory Protection
2. ANSI Z9.2-79, Fundamentals Governing the Design and Operation of Local Exhaust Systems
3. EPA 560/585-024, Guidance for Controlling Asbestos Containing Materials in Buildings (Purple Book)
4. EPA 530-SW-85-007, Asbestos Waste Management Guidance
5. ASTM Standard E1368 “Standard Practice for Visual Inspection of Asbestos Abatement Projects.”

1.07 NOTICES

A. The Contractor shall provide notification of intent to commence asbestos abatement activities as indicated below.
1. At least ten (10) Working days prior to beginning abatement activities, send written notification to:
U.S. Environmental Protection Agency
National Emissions Standards for Hazardous Air Pollutants (NESHAPS) Coordinator
26 Federal Plaza
New York, NY 10007
2. At least ten (10) days prior to beginning abatement activities send written notification to:
New York State Department of Labor
Division of Safety and Health, Asbestos Control Program.
State Office Campus
Building 12 - Room 454
Albany, NY 12240

B. The Contractor is required to send notifications to regulatory agencies via mail or package delivery service that will provide proof of delivery and receipt.

C. The Contractor shall be responsible for maintaining current project filings with regulatory agencies for the duration of the project.

D. The Contractor shall post and/or provide Building Occupant Notification at least 10 days prior to beginning abatement activities as required by Code Rule 56.

1.08 PROJECT MONITORING AND AIR SAMPLING

A. The Owner has engaged the services of Green Path Environmental, Inc (Environmental Consultant) who shall serve as the Owner's Representative in regard to the performance of the asbestos abatement Project and provide direction as required throughout the entire abatement Project period.

B. The Contractor is required to ensure cooperation of its personnel with the Consultant for the air sampling and Project monitoring functions described in this section. The Contractor shall comply with all direction given by the Consultant during the course of the Project.

C. The Consultant shall provide the following administrative services:

1. Review and approve or disapprove all submittals, shop drawings, schedules, and samples.
2. Assure that all notifications to governmental agencies by the Contractor are submitted in a timely manner and are correct in content.

D. The Consultant shall staff the Project with a trained and certified person (s) to act on the Owner's behalf at the job site. This individual shall be designated as the Abatement Project Monitor (APM).
   1. The APM shall be on-site at all times the Contractor is on-site. The Contractor shall not be permitted to conduct any Work unless the APM is on-site (except for inspection of barriers and negative air system during non-working days).
   2. The APM shall have the authority to direct the actions of the Contractor verbally and in writing to ensure compliance with the Project documents and all regulations. The APM shall have the authority to Stop Work when gross Work practice deficiencies or unsafe practices are observed, or when ambient fiber concentrations outside the removal area exceed .01 f/cc or background level.
      a. Such Stop Work order shall be effective immediately and remain in effect until corrective measures have been taken and the situation has been corrected.
      b. Standby time required to resolve the situation shall be at the Contractor's expense.
   3. The APM shall provide the following services:
      a. Inspection of the Contractor's Work, practices, and procedures, including temporary protection requirements, for compliance with all regulations and Project specifications.
      b. Provide abatement Project air sampling as required by applicable regulations (NYS, AHERA) and the Owner. Sampling will include background, work area preparation, asbestos handling, and final cleaning and clearance air sampling.
      c. Verify daily that all Workers used in the performance of the Project are certified by the appropriate regulatory agency.
      d. Monitor the progress of the Contractor's Work, and report any deviations from the schedule to the Owner.
      e. Monitor, verify, and document all waste load-out operations.
      f. Verify that the Contractor is performing personal air monitoring daily, and that results are being returned and posted at the site as required.

g. The APM shall maintain a log on site that documents all project related and Consultant and Contractor actions, activities, and occurrences.

4. The following minimum inspections shall be conducted by the APM. Additional inspections shall be conducted as required by Project conditions. Progression from one phase of Work to the next by the Contractor is only permitted with the written approval of the APM.
   a. Pre-Construction Inspection: The purpose of this inspection is to verify the existing conditions of the Work Areas and to document these conditions.
   b. Pre-Commencement Inspection: The purpose of this inspection is to verify the integrity of each containment system prior to disturbance of any asbestos containing material. This inspection shall take place only after the Work Area is fully prepped for removal.
   c. Work Inspections: The purpose of this inspection is to monitor the Work practices and procedures employed on the Project and to monitor the continued integrity of the containment system. Inspections within the removal areas shall be conducted by the APM during all preparation, removal, and cleaning activities at least twice every Work shift. Additional inspections shall be conducted as warranted.
   d. Pre-Encapsulation Inspection: The purpose of this inspection is to ensure the complete removal of Asbestos Containing Material (ACM), from all surfaces in the Work Area prior to encapsulation.
   e. Visual Clearance Inspection: The purpose of this inspection is to verify that: all materials in the scope of work have been properly removed; no visible asbestos debris/residue remains; no pools of liquid or condensation remains; and all required cleanings are complete. This inspection shall be conducted before final air clearance testing.
   f. Post-Clearance Inspection: The purpose of this inspection is to ensure the complete removal of ACM, including debris, from the Work Area after satisfactory final clearance sampling and removal of all isolation and critical barriers and equipment from the Work Area.
   g. Punch List Inspection: The purpose of this inspection is to verify the Contractor's certification that all Work has been completed as contracted and the existing condition of the area prior to its release to the Owner.

E. The Consultant shall provide abatement Project air sampling and analysis as required by applicable regulations (New York State and/or AHERA). Sampling will include background, work area preparation, asbestos handling, and final cleaning and clearance air sampling.
   1. Unless otherwise required by applicable regulations, the Consultant shall have samples analyzed by Phase Contrast Microscopy (PCM). Results shall be available within 24 hours of completion of sampling.
   2. Samples shall be collected as required by applicable regulations (New York State and/or AHERA) and these specifications. If Transmission Electron Microscopy (TEM) clearance air sampling is utilized by the owner, the clearance criteria and sampling protocols must be in compliance with AHERA. If PCM air sample analysis results exceed the satisfactory clearance criteria, then TEM analysis of the entire set of clearance air samples may be used, provided that a standard NIOSH/ELAP accepted laboratory analysis method is utilized that shall report each air sample result in fibers per cubic centimeter.
   3. If the air sampling during any phase of the abatement project reveals airborne fiber levels at or above .01 fibers/cc or the established background level, whichever is greater, outside

the regulated Work Area, Work shall stop immediately and corrective measures required by Code Rule 56 shall be initiated. Notify all employers and occupants in adjacent areas. The Contractor shall bear the burden of any and all costs incurred by this delay.

4. The Environmental Consultant shall submit copies of all elevated air sampling results collected during abatement and all final air clearance results to the Commissioner of Labor.

1.09 CONTRACTOR AIR SAMPLING

A. In addition to the requirements of OSHA 1926.1101, the Contractor shall be required to perform personal air monitoring every Work shift in each Work Area during which abatement activities occur in order to determine that appropriate respiratory protection is being worn and utilized.

B. The Contractor shall conduct air sampling that is representative of both the 8-hour time weighted average and 30-minute short-term exposures to indicate compliance with the permissible exposure and excursion limits.

C. The Contractor's laboratory analysis of air samples shall be conducted by an NYS DOH ELAP approved laboratory.

D. Results of personnel air sample analyses shall be available, verbally, within twenty-four (24) hours of sampling and shall be posted upon receipt. Written laboratory reports shall be delivered and posted at the Work site within five (5) days. Failure to comply with these requirements may result in all work being stopped until compliance is achieved.

1.10 PROJECT SUPERVISOR

A. The Contractor shall designate a full-time Project Supervisor who shall meet the following qualifications:
   1. The Project Supervisor shall hold New York State certification as an Asbestos Supervisor.
   2. The Project Supervisor shall meet the requirements of a "Competent Person" as defined by OSHA 1926.1101 and shall have a minimum of one year experience as a supervisor.
   3. The Project Supervisor must be able to speak, read, and write English fluently, as well as communicate in the primary language of the Workers.

B. If the Project Supervisor is not on-site at any time whatsoever, all Work shall be stopped. The Project Supervisor shall remain on-site until the Project is complete. The Project Supervisor cannot be removed from the Project without the written consent of the Owner and the Environmental Consultant. The Project Supervisor shall be removed from the Project if so requested by the Owner.

C. The Project Supervisor shall maintain the bound Daily Project Log that also includes the entry/exit logs as required by New York State Department of Labor and section 2.03 of the specifications and the Waste Disposal Log required by section 4.04 of the specifications.

D. The Project Supervisor shall be responsible for the performance of the Work and shall represent the Contractor in all respects at the Project site. The Supervisor shall be the primary point of contact for the Asbestos Project Monitor.

1.11 MEDICAL REQUIREMENTS

A. Before exposure to airborne asbestos fibers, provide Workers with a comprehensive medical examination as required by 29 CFR 1910.1001, and 29 CFR 1926.1101.

1. This examination is not required if adequate records show the employee has been examined as required by 29 CFR 1910.1001, and 29 CFR 1926.1101 within the past year.
2. The same medical examination shall be given on an annual basis to employees engaged in an occupation involving asbestos fibers and within thirty (30) calendar days before or after the termination of employment in such occupations.

1.12 TRAINING

A. As required by applicable regulations, prior to assignment to asbestos Work instruct each employee with regard to the hazards of asbestos, safety and health precautions, and the use and requirements of protective clothing and equipment.

B. Establish a respirator program as required by ANSI Z88.2 and 29 CFR 1910.134, and 29 CFR 1926.1101. Provide respirator training and fit testing.

1.13 RESPIRATORY PROTECTION

A. Select respirators from those approved by the Mine Safety and Health Administration (MSHA), and the National Institute for Occupational Safety and Health (NIOSH), Department of Health and Human Services.

B. Respirators shall be individually fit-tested to personnel under the direction of an Industrial Hygienist on a yearly basis. Fit-tested respirators shall be permanently marked to identify the individual fitted, and use shall be limited to that individual. Fit-test records shall be maintained on site for each employee.

C. Where fiber levels permit, and in compliance with regulatory requirements, half-faced respirators are the minimum allowable respiratory protection permitted to be utilized during gross removal operations of OSHA Class I or OSHA Class II ACM.

D. No respirators shall be issued to personnel without such personnel participating in a respirator training program.

E. High Efficiency Particulate Air (HEPA) respirator filters shall be approved by NIOSH and shall conform to the OSHA requirements in 29 CFR 1910.134 and 29 CFR 1926.1101.

F. A storage area for respirators shall be provided by the Contractor in the clean room side of the personnel decontamination enclosure where they will be kept in a clean environment.

G. The Contractor shall provide and make available a sufficient quantity of respirator filters so that filter changes can be made as necessary during the work day. Filters will be removed and discarded during the decontamination process. Filters cannot be reused. Filters must be changed if breathing becomes difficult.

H. Filters used with negative pressure air purifying respirators shall not be used any longer than one eight (8) hour work day.

I. Any authorized visitor, Worker, or supervisor found in the Work Area not wearing the required respiratory protection shall be removed from the Project site and not be permitted to return.

J. The Contractor shall have at least two (2) half-faced respirators stored on site designated for authorized visitors use. Appropriate respirator filters for authorized visitors shall be made available by the Contractor.

1.14 DELIVERY AND STORAGE

A. Deliver all materials to the job site in original packages with containers bearing manufacturer's name and label.

B. Store all materials at the job site in a suitable and designated area.
   1. Store materials subject to deterioration or damage away from wet or damp surfaces and under cover.
   1. Protect materials from unintended contamination and theft.
   2. Storage areas shall be kept clean and organized.

C. Remove damaged or deteriorated materials from the job site. Materials contaminated with asbestos shall be disposed of as asbestos debris as herein specified.

1.15 TEMPORARY UTILITIES

A. Shut down and lock out all electrical power to the asbestos Work Areas.

B. Provide temporary 120–240-volt, single phase, three wire, 100-amp electric service with Ground Fault Circuit Interrupters (GFCI) for all electric requirements within the asbestos Work Area.
   1. Where available, obtain from Owner's existing system. Otherwise provide power from other sources (i.e. generator).
   2. Provide temporary wiring and "weatherproof" receptacles in sufficient quantity and location to serve all HEPA equipment and tools.
   3. Provide wiring and receptacles as required by the Environmental Consultant for air sampling equipment.
   4. All power to the Work Area shall be brought in from outside the area through GFCI's at the source.

C. Provide temporary lighting with "weatherproof" fixtures for all Work Areas including decontamination chambers.
   1. The entire Work Area shall be kept illuminated at all times.
   2. Provide lighting as required by the Environmental Consultant for the purposes of performing required inspections.

D. All temporary devices and wiring used in the Work Area shall be capable of decontamination procedures including HEPA vacuuming and wet-wiping.

E. Utilize domestic water service, if available, from Owner's existing system. Provide hot water heaters with sufficient capacity to meet Project demands.

PART 2 PRODUCTS

2.01 PROTECTIVE CLOTHING

A. Provide personnel utilized during the Project with disposable protective whole body clothing, head coverings, gloves and foot coverings. Provide disposable plastic or rubber gloves to protect hands. Cloth gloves may be worn inside the plastic or rubber for comfort, but shall not be used alone. Make sleeves secure at the wrists and make foot coverings secure at the ankles by the use of tape, or provide disposable coverings with elastic wrists or tops.

B. Provide sufficient quantities of protective clothing to assure a minimum of four (4) complete disposable outfits per day for each individual performing abatement Work.

C. Eye protection and hard hats shall be provided and made available for all personnel entering any Work Area.

B. Authorized visitors shall be provided with suitable protective clothing, headgear, eye protection, and footwear whenever they enter the Work Area.

2.02 SIGNS AND LABELS

A. Provide warning signs and barrier tapes at all approaches to asbestos Work Areas. Locate signs at such distance that personnel may read the sign and take the necessary protective steps required before entering the area.

1. Provide danger signs in vertical format conforming to 29 CFR 1926.1101, minimum 20" x 14" displaying the following legend.

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

2. Provide 3" wide yellow barrier tape printed with black lettered, "DANGER ASBESTOS REMOVAL". Locate barrier tape across all corridors, entrances and access routes to asbestos Work Area. Install tape 3' to 4' AFF.

B. Provide asbestos danger labels affixed to all asbestos materials, scrap, waste, debris and other products contaminated with asbestos.

1. Provide asbestos danger labels of sufficient size to be clearly legible, displaying the following legend:

DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD

2. Provide the following asbestos labels, of sufficient size to be clearly legible, for display on waste containers (bags or drums) which will be used to transport asbestos contaminated material in accordance with United States Department of Transportation 49 CFR Parts 171 and 172: (Note: Include “RQ” for friable asbestos waste only.)

RQ, (WASTE) ASBESTOS, 9, NA2212, PGIII

3. Generator identification information shall be affixed to each waste container indicating the following printed in indelible ink:

Generator Name
Facility Name
Facility Address

2.03 DAILY PROJECT LOG

A. Provide a Daily Project Log. The log shall contain on title page the Project name, name, address and phone number of Owner; name, address and phone number of Environmental Consultant; name, address and phone number of Abatement Contractor; emergency numbers including, but

not limited to local Fire/Rescue department and all other New York State Department of Labor requirements.

B. All entries into the log shall be made in non-washable, permanent ink and such pen shall be strung to or otherwise attached to the log to prevent removal from the log-in area. Under no circumstances shall pencil entries be permitted.

C. All persons entering and exiting the Work Area shall sign the log and include name, title, work performed and time.

D. The Project Supervisor shall document all Work performed daily and note all inspections required by Code Rule 56, i.e. testing and inspection of barriers and enclosures.

2.04 SCAFFOLDING AND LADDERS

A. Provide all scaffolding and/or staging as necessary to accomplish the Work of this Contract. Scaffolding may be of suspension type or standing type such as metal tube and coupler, tubular welded frame, pole or outrigger type or cantilever type. The type, erection and use of all scaffolding and ladders shall comply with all applicable OSHA construction industry standards.

B. Provide scaffolding and ladders as required by the Environmental Consultant for the purposes of performing required inspections.

2.05 SURFACTANT (AMENDED WATER)

A. Wet all asbestos-containing materials prior to removal with surfactant mixed and applied in accordance with manufacturer's printed instructions.

2.06 ENCAPSULANT

A. Encapsulant shall be tinted or pigmented so that application when dry is readily discernible.

B. The encapsulant solvent or vehicle shall not contain a volatile hydrocarbon.

2.07 DISPOSAL BAGS, DRUMS, AND CONTAINERS

A. Provide 6 mil polyethylene disposal bags printed with asbestos caution labels. Bags shall also be imprinted with U.S. Department of Transportation required markings.

B. Provide 30- or 55-gallon capacity fiber, plastic, or metal drums capable of being sealed air and water tight if asbestos waste has the potential to damage or puncture disposal bags. Affix asbestos caution labels on lids and at one-third points around drum circumference to assure ready identification.

C. Containers and bags must be labeled accordance with 40 CFR Part 61 NESHAPS and Code Rule 56. When the bags/containers are moved to the lockable hardtop dumpster from the waste decontamination system washroom, the bags must also be appropriately labeled with the date they are moved on the bag/container in waterproof markings.

D. Labeled ACM waste containers or bags shall not be used for non-ACM waste or trash. Any material placed in labeled containers or bags, whether turned inside out or not shall be handled and disposed of as ACM waste.

2.08 HEPA VACUUM EQUIPMENT

A. All dry vacuuming performed under this contract shall be performed with High Efficiency Particulate Absolute (HEPA) filter equipped industrial vacuums conforming to ANSI Z9.2.

B. Provide tools and specialized equipment including scraping nozzles with integral vacuum hoods connected to a HEPA vacuum with flexible hose.

2.09 POWER TOOLS

A. Any power tools used to drill, cut into, or otherwise disturb asbestos material shall be manufacturer equipped with HEPA filtered local exhaust ventilation.

2.10 POLYETHYLENE SHEETING

A. All polyethylene (plastic) sheeting used on the Project (including but not limited to sheeting used for critical and isolation barriers, fixed objects, walls, floors, ceilings, waste container) shall be at least 6 mil fire retardant sheeting.

B. Decontamination enclosure systems shall utilize at least 6 mil opaque fire-retardant plastic sheeting. At least 2 layers of 6 mil reinforced fire-retardant plastic sheeting shall be used for the flooring.

PART 3 EXECUTION

3.01 GENERAL REQUIREMENTS

A. Should visible emissions or water leaks be observed outside the Work Area, immediately stop Work and institute emergency procedures per Code Rule 56. Should there be elevated fiber levels outside the Work Area, immediately stop Work, institute emergency procedures per Code Rule 56, and notify all employers and occupants in adjacent areas. All costs incurred in decontaminating such non-Work Areas and the contents thereof shall be borne by the Contractor, at no additional cost to the Owner.

B. Medical approval, fit test reports, Worker Acknowledgments, and NYS DOL certificates shall be on site prior to admittance of any Contractor's employees to the asbestos Work Area.

C. The following submittals, documentation, and postings shall be maintained on-site by the Contractor during abatement activities at a location approved by the Abatement Project Monitor:
   1. Contractor license issued by New York State Department of Labor.
   2. Certification, Worker Training, Medical Surveillance, Acknowledgments:
      a. NYS DOL Asbestos Handler certification cards for each person employed in the removal, handling, or disturbance of asbestos.
      b. Evidence that Workers have received proper training required by the regulations and the medical examinations required by OSHA 29 CFR 1926.1101.
      c. Documentation that Workers have been fit tested specifically for respirators used on the Project.
      d. Worker's Acknowledgments: Statements signed by each employee that the employee has received training in the proper handling of asbestos containing materials; understands the health implications and risks involved; and understands the use and limitations of the respiratory equipment to be used.
   3. Daily OSHA personal air monitoring results.
   4. NYS Department of Health ELAP certification for the laboratory that will be analyzing the OSHA personnel air samples.
   5. NYS Department of Environmental Conservation Waste Transporter Permit.
   6. Project documents (specifications and drawings.)
   7. Notifications and Variances. Ensure that the most up-to-date notifications and Variances are on-site.
   8. Applicable regulations.
   9. Material Safety Data Sheets of supplies/chemicals used on the Project.
   10. Approved Abatement Work Plan.
   11. List of emergency telephone numbers.
   12. Magnahelic manometer semi-annual calibration certification.
   13. Waste Disposal Log.
   14. Daily Project Log.

D. The following documentation shall be maintained on-site by the Abatement Project Monitor during abatement activities:
   1. Contractor license issued by New York State Department of Labor.
   2. Air Sample Log.
   3. Air sample results.
   4. Project Monitor Daily Log
   7. A copy of ASTM Standard E1368 "Standard Practice for Visual Inspection of Asbestos Abatement Projects."

E. The Work Area must be vacated by building occupants prior to decontamination enclosure construction and Work Area preparation.

F. All demolition necessary to access asbestos containing materials for removal must be conducted within negative pressure enclosures by licensed asbestos handlers. Demolition debris may be disposed of as construction and demolition debris provided the Abatement Project Monitor determines that it is not contaminated with asbestos and there has been no disturbance of ACM within the enclosure. If the demolition debris is determined to be contaminated or ACM has been disturbed, it must be disposed of as asbestos waste.

3.02 PERSONNEL DECONTAMINATION ENCLOSURE

A. Provide personnel decontamination enclosure contiguous to the Work Area as per NYS ICR 56. The decontamination enclosure may be attached to or remote from the Work Area and not located within it unless isolation barriers are installed. If the decontamination chamber is accessible to the public, it shall be fully framed and sheathed to prevent unauthorized entry.

B. Access to the Work Area will be from the clean room through an air-lock to the shower and through an air lock to the equipment room. Each airlock shall be a minimum of three feet from door to door. Additional air locks shall be provided as required by Code Rule 56 for remote decontamination enclosures.

C. The decontamination enclosure ceiling and walls shall be covered with one layer of opaque 6 mil polyethylene sheeting. Two layers of reinforced polyethylene sheeting shall be used to cover the floor.

D. The entrance to the clean room shall have a lockable door. Provide suitable lockers for storage of Worker's street clothes. Storage for respirators along with replacement filters and disposable towels shall also be provided.

E. Provide a temporary shower with individual hot and cold-water supplies and faucets. Provide a sufficient supply of soap and shampoo. There shall be one shower for every six Workers. The shower room shall be constructed in such a way so that travel through the shower chamber shall be through the shower. The shower shall not be able to be bypassed.

F. Shower water shall be drained, collected and filtered through a system with at least a 5.0-micron particle size collection capability containing a series of several filters with progressively smaller pore sizes to avoid rapid clogging of the system. The filtered waste water shall then be discharged in accordance with applicable codes and the contaminated filters disposed of as asbestos waste.

G. The equipment room shall be used for the storage of tools and equipment. A walk-off pan filled with water shall be located in the Work Area outside the equipment room for Workers to clean foot coverings when leaving the Work Area. A labeled 6 mil plastic ACM waste bag for collection of contaminated clothing shall be located in this room.

H. The personal decontamination enclosure shall be cleaned and disinfected minimally at the end of each Work shift and as otherwise directed by the Asbestos Project Monitor.

3.03 WASTE DECONTAMINATION ENCLOSURE

A. Provide a waste decontamination enclosure contiguous to the Work area. The decontamination enclosure shall be attached to the Work Area and not located within it unless isolation barriers

are installed. If the decontamination chamber is accessible to the public, it shall be fully framed and sheathed to prevent unauthorized entry.

B. The waste decontamination enclosure system shall consist of a holding area, air lock and washroom. The airlock shall be a minimum of three feet from door to door. The entrance to the holding area shall have a lockable door.

C. The decontamination enclosure ceiling and walls shall be covered with one layer of opaque 6 mil polyethylene sheeting on walls and ceiling. Two layers of reinforced polyethylene sheeting shall be used to cover the floor.

D. Where there is only one egress from the Work Area, the holding area of the waste decontamination enclosure system may branch off from the personnel decontamination enclosure equipment room, which then serves as the waste wash room.

E. The waste wash room water shall be drained, collected, and filtered through a system with at least a 5.0-micron particle size collection capability containing a series of several filters with progressively smaller pore sizes to avoid rapid clogging of the system. The filtered waste water shall then be discharged in accordance with applicable codes and the contaminated filters disposed of as asbestos waste.

F. In small asbestos Projects where only one egress from the Work Area exists, the shower room may be used as a waste washroom. In this instance, the clean room shall not be used for waste storage, but shall be used for waste transfer to carts, which shall immediately be removed from this enclosure.

3.04 WORK AREA ENTRY AND EXIT PROCEDURES

A. Access to and from the asbestos Work Area is permitted only through the personnel decontamination enclosure unless otherwise stipulated in a Site-Specific Variance.

B. Workers shall sign the entry/exit log upon every entry and exit.

C. The following procedures shall be followed when entering the Work Area:
   1. Before entering the Work Area, Workers shall proceed to the clean room, remove all street clothes, and don protective clothing, equipment, and respirators.
   2. Workers shall proceed from the clean room through the shower room and the equipment room and into the Work Area.

D. The following procedures shall be followed when exiting the Work Area:

   1. Before leaving the Work Area, gross asbestos contamination will be removed by brushing, wet cleaning and/or HEPA vacuuming.
   2. In the equipment room, Workers shall remove disposable clothing, but not respirators, and shall place clothing in plastic disposal bags for disposal as contaminated debris prior to entering the shower room.
   3. Workers shall shower thoroughly while wearing respirators, then wash respirator with soap and water prior to removal.
   4. Upon exiting the shower, Workers shall don new disposable clothing if the Work shift is to continue or street clothes to exit area. Under no circumstances shall Workers enter public non-Work Areas in disposable protective clothing.

E. If remote decontamination enclosures are permitted by Code Rule 56 or a Site-Specific Variance, workers shall wear two disposable suits for all phases of Work. Workers exiting the work area shall HEPA vacuum the outer suit, enter the airlock, remove the outer suit and then place it back into the Work Area. A clean second suit shall be donned before exiting the airlock and proceeding to the decontamination enclosure or another work area via the designated pathway required by Code Rule 56.

3.05 WORK AREA PREPARATION

A. Asbestos danger signs shall be posted at all approaches to the asbestos Work Area. Post all emergency exits as emergency exits only on the Work Area side, post with asbestos caution signs on the non-Work Area side. Provide all non-Work Area stairs and corridors accessible to the asbestos Work Area with warning tapes at the base of stairs and beginning of corridors. Warning tapes shall be in addition to caution signs.

B. Shut down and lock out the building heating, ventilating, and air conditioning systems. Electrical systems and circuits shall also be shut down unless permitted to remain active per Code Rule 56 and appropriately protected and labeled. Existing lighting sources shall not be utilized. Provide temporary electric power and lighting as specified herein.

C. All surfaces and objects within the Work Area shall be pre-cleaned using HEPA vacuuming and/or wet-wiping methods. Dry sweeping and any other methods that raise dust shall be prohibited. ACM shall not be disturbed during pre-cleaning.

D. Movable objects within the Work Area shall be HEPA vacuumed and/or wet-wiped and removed from the Work Area.

E. All non-movable equipment in the Work Area shall be completely covered with 2 layers of polyethylene sheeting, at least 6 mil in thickness, and secured in place with duct tape and/or spray adhesive.

F. Provide enclosure of the asbestos Work Area necessary to isolate it from unsealed areas of the building in accordance with the approved asbestos Work plan and as specified herein.

G. Provide critical barriers by sealing off all openings including but not limited to windows, diffusers, grills, electrical outlets and boxes, doors, floor drains, and any other penetrations of the Work Area enclosure, using 2 layers of at least 6 mil polyethylene sheeting.

H. Provide isolation barriers by installing temporary framing and sheathing at openings larger than 32 square feet forming the limits of the asbestos Work Area. Sheathing thickness must be

a minimum of 3/8 inch and all sheathing shall be caulked and the Work Area side sealed with two layers of 6 mil polyethylene sheeting.

I. (if applicable) Isolation barriers shall be installed at all elevator openings in the Work Area. Elevators running through the regulated abatement work area shall be shut down or isolated as per Code Rule 56. Elevator controls shall be modified so that elevators bypass the Work Area

J. For interior scope of work provide two layers of 6 mil polyethylene sheeting over all floor, wall, and ceiling surfaces. Isolation barriers shall also be covered with two layers (for a total of four layers). Sheeting shall be secured with spray adhesive and then sealed with duct tape. All joints in polyethylene sheeting shall overlap 12" minimum.

K. Frame out emergency exits. Provide double layer 6 mil polyethylene sheeting and tape seal opening. Post as emergency exits only. Within the Work Area, mark the locations and directions of emergency exits throughout the Work Area using exit signs and/or duct tape.

L. Remove all items attached to or in contact with ACM only after the Work Area enclosure is in place. HEPA vacuum and wet wipe with amended water all removed items prior to their removal from the Work Area and before the start of asbestos removal operations.

M. Suspended ceiling tiles shall only be removed after Work Area preparation is complete. If possible, non-contaminated ceiling tiles shall be HEPA vacuumed and removed from the Work Area before asbestos removals begin. Contaminated ceiling tiles shall be disposed of as asbestos waste.

3.06 NEGATIVE AIR PRESSURE FILTRATION SYSTEM

A. Provide a portable asbestos filtration system that develops a minimum pressure differential of negative 0.02 in. of water column within all full enclosure areas relative to adjacent unsealed areas and that provides a minimum of 6 air changes per hour in the Work Area during abatement.

B. Such filtration systems must be made operational after critical and isolation barriers are installed but before wall, floor, and ceilings are plasticized and shall be operated 24 hours per day during the entire Project until the final cleanup is completed and satisfactory results of the final air samples are received from the laboratory.

C. The system shall include a series of pre-filters and filters to provide High Efficiency Particulate Air (HEPA) filtration of particles down to 0.3 microns at 100% efficiency and below 0.3 microns at 99.9% efficiency. Provide sufficient replacement filters to replace pre-filters every 2 hours, secondary pre-filters every 24 hours, and primary HEPA filters every 600 hours of operation.

D. A minimum of one additional filtration unit of at least the same capacity as the primary unit(s) shall be installed and fully functional to be used during primary unit (s) filter changing and in case of primary failure.

E. At no time will the unit exhaust indoors, within 15 feet of a receptor, including but not limited to windows and doors, or adversely affect the air intake of the building. Exhaust ducting shall not exceed 25’ in length. Provide construction fencing at ground level exhaust termination locations per Code Rule 56.

F. Upon electric power failure or shut-down of any filtration unit, all abatement activities shall stop immediately and only resume after power is restored and all filtration units are fully operating. For shut-downs longer than one hour, all openings into the Work Area, including the decontamination enclosures, shall be sealed.

G. The Contractor shall provide a manometer to verify negative air pressure. Manometers shall be read twice daily and recorded within the Daily Project Log.

H. There shall be at least a 4-hour settling period after the Work Area is fully prepared and the negative filtration units have been started to ensure integrity of the barriers.

I. Once installed and operational, the Contractor’s Supervisor shall conduct daily inspections of the Work Area to ensure the airtight integrity of the enclosure and operation of the negative air

system. Findings shall be recorded within the Daily Project Log. Inspections shall also be conducted on days when no abatement activities are in progress per Code Rule 56 (i.e. weekends).

3.07 REMOVAL OF ASBESTOS CONTAINING MATERIALS

A. Asbestos-containing materials shall be removed in accordance with the Contract Documents and the approved Asbestos Work Plan. Only one type of ACM shall be abated at a time within a Work Area. Where there are multiple types of ACM requiring abatement, Code Rule 56 procedures for sequential abatement shall be followed.

B. Sufficiently wet asbestos materials with a low pressure, airless fine spray of surfactant to ensure full penetration prior to material removal. Re-wet material that does not display evidence of saturation.

C. One Worker shall continuously apply amended water while ACM is being removed.

D. Perform cutting, drilling, abrading, or any penetration or disturbance of asbestos containing material in a manner to minimize the dispersal of asbestos fibers into the air. Use equipment and methods specifically designed to limit generation of airborne asbestos particles. All power operated tools used shall be provided with HEPA equipped filtered local exhaust ventilation.

E. Upon removal of ACM from the substrate, the newly exposed surfaces shall be HEPA vacuumed and/or wet cleaned. Surfaces must be thoroughly cleaned using necessary methods and any required solvents to completely remove any adhesive, mastic, etc.

F. All removed material shall be placed into 6 mil plastic disposal bags or other suitable container upon detachment from the substrate. Cleanup of accumulations of loose debris or waste shall be performed whenever there is enough accumulation to fill a single bag or container and minimally at the end of each workshift.

G. Large components shall be wrapped in two layers of 6 mil polyethylene sheeting. Sharp components likely to tear disposal bags shall be placed in fiber drums or boxes and then wrapped with sheeting.

H. Power or pressure washers are not permitted for asbestos removal or clean-up procedures unless approved in a Site-Specific Variance.

I. All construction and demolition debris determined by the Environmental Consultant to be contaminated with asbestos shall be handled and disposed of as asbestos waste.

J. The use of metal shovels, metal dust pans, etc. are not permitted inside the work area.

3.08 EQUIPMENT AND WASTE CONTAINER DECONTAMINATION AND REMOVAL PROCEDURES

A. 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. The persons in the Work Area shall not enter the airlock. No gross removal operations are permitted when waste transfer is in progress.

B. The containers and equipment shall be removed from the airlock by persons stationed in the washroom during waste removal operations. The external surfaces of containers and equipment shall be cleaned a second time by wet cleaning.

C. The cleaned containers of asbestos material and equipment are to be dried of any excessive pooled or beaded liquid, placed in uncontaminated 6 mil plastic bags or sheeting, as the item's physical characteristics demand, and sealed airtight.

D. The clean re-containerized items shall be moved into the airlock that leads to the holding area. Workers in the washroom shall not enter this airlock.

E. 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 the holding area.

F. 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.

G. The exit from the decontamination enclosure system shall be secured to prevent unauthorized entry.

H. 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.

3.09 WORK AREA DECONTAMINATION, CLEANING, AND CLEARANCE PROCEDURES

A. Following completion of gross abatement and after all accumulations of asbestos waste materials have been containerized, the following decontamination procedures shall be followed unless modified by a Site-Specific Variance.

B. On completion of each type of asbestos abatement within these work area enclosures, a complete single clean of all surfaces in the entire area – ceiling, walls and floors - shall be performed by HEPA vacuuming and wet wiping. No final clearance air samples shall be required for each individual type of material abatement, until the last type of ACM, PACM or asbestos material is abated. Each intermediate completion shall include a visual inspection for completeness by the asbestos abatement contractor’s supervisor. Results of the visual inspection and time of intermediate completion shall be documented by the asbestos abatement contractor’s supervisor in the daily project log.

C. **Final Required Cleaning**. A complete single clean of all surfaces in the entire area – ceiling, walls and floors, followed by a visual inspection as described in Subpart 56-9 shall be performed by HEPA vacuuming and wet wiping, after all abatement is complete.

C. **Final Clearance Air Samples**. After the final cleaning and visual inspection requirements are completed and the final settling/drying period is observed, prior to dismantling the regulated abatement work area, Phase IIC final clearance air samples shall be collected and satisfactory clearance air results obtained as per Section 56-9.2 of this Part.

3.10 TENT ENCLOSURES

A. Tent enclosures may only be used where specifically permitted by Code Rule 56 or a Site-Specific Variance issued by the NYS Department of Labor.

B. The Contractor shall restrict access to the immediate area where tent removal procedures are taking place using barrier tape and/or construction barriers. Caution signs shall be posted.

C. Remote personnel and waste decontamination enclosures shall be constructed. Configuration shall be as required by Project size. For tent enclosures with gross abatement of friable materials, a contiguous decontamination system shall be constructed, maintained and utilized, except for minor size tent enclosure work areas where a remote decontamination enclosure is permitted by Code Rule 56.

D. The Work Area shall be precleaned. All objects and equipment that will remain in the restricted area during abatement shall be sealed with two layers of six mil polyethylene and tape.

E. The tent shall be a single use barrier constructed with a rigid frame and at least two layers of six mil polyethylene unless one layer of six mil polyethylene is otherwise permitted by Code Rule 56. Tents with twenty (20) square feet or less of floor space or no gross removal of friable ACM shall be constructed of one (1) layer of six mil polyethylene and shall include walls, ceilings and a floor (except portions of walls, floors and ceilings that are the removal surface) with double folded seams. All seams shall be sealed airtight using duct tape and/or spray adhesive.

F. The tent shall be constructed with at least one airlock for worker/waste egress.

G. A monometer shall be used for all OSHA Class I abatement.

H. Negative air shall be maintained at four (4) air changes per hour for non-friable and glovebag abatement tent enclosure work areas. Eight (8) air changes shall be maintained for friable gross removal tent enclosure work areas. In a Minor size abatement tent enclosure work area a HEPA vacuum may be used to maintain the required air changes.

I. OSHA compliance air monitoring is required per section 1.09.

J. ACM removal shall follow procedures defined in section 3.07.

K. Waste material shall be placed in properly labeled 6 mil plastic bags or other appropriate containers. The outside of the bags or containers shall be wet wiped and/or HEPA vacuumed and shall then be placed in a second bag/container before being transported to the waste storage container. All transportation of waste bags and containers outside the Work Area shall be in watertight carts. 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.

L. Following completion of gross abatement and after all accumulations of asbestos waste materials have been containerized, the following decontamination procedures shall be followed.
   1. All bagged asbestos waste and unnecessary equipment shall be decontaminated and removed from the Work Area.
   2. All surfaces in the Work Area shall be wet cleaned. A wet-purpose shop vacuum may be used to pick up excess liquid, and shall be decontaminated prior to removal from the Work Area.

3. The Asbestos Project Monitor shall conduct a visual inspection of the Work Area for cleanliness and completion of abatement.
4. After the waiting/settling and drying time requirements have elapsed, aggressive final clearance air sampling shall then be conducted by the Environmental Consultant.
5. Upon receipt of satisfactory final clearance air sampling results, the tent shall be collapsed into itself, placed in suitable disposal bags, and transported to the waste decontamination enclosure. Isolation and critical barriers shall then be removed.

3.10 EXTERIOR PROJECT REMOVAL OF NON-FRIABLE ACM CAULKING, TARS, TAR PAPER AND OTHER NOB ACMS

A. Establishment and Isolation of Regulated Abatement Work Area. The immediate work area shall be considered to be the area from which the asbestos containing materials are actively being removed - building wall. The asbestos project regulated abatement work area shall extend twenty-five (25') feet from the perimeter of the immediate work area and shall have signage in accordance with Section 56-7.4. An airlock shall be required at the entrance to the regulated abatement work area to serve as a changing area, if the workers shall have to pass through enclosed publicly occupied space, such as from a roof through an interior stairway, to access the decontamination units.

B. Where the asbestos project regulated abatement work area extends outward twenty-five (25) feet and extends downward one (1) floor to encompass a passage or vehicular door which must be used for either a primary entrance or by an emergency vehicle, thereby precluding sealing such door, a tunnel structure (with sides and roof) built of plywood sheeting, covered with at least two (2) layers of at least six (6) mil plastic, shall extend outward twenty-five (25) feet horizontally from the line of vertical projection of the roof edge downward to grade level

C. Preliminary Preparation. Regulated abatement work area preparation shall also comply with Sections 56-7.2, 7.3, 7.4, 7.5, 7.6, 7.7 and 7.9.

D. Decontamination System Location. The personal [and waste] decontamination system enclosures can be remote but must be within fifty (50) feet of the building/structure entrance used by the asbestos handlers (workers), and shall be removed only after obtaining satisfactory clearance air results for the regulated abatement work area or an acceptable visual inspection has determined that the abatement is complete, as per Section 56-9. 2(e).

E. ***Facades***

Plasticizing or sealing of nearby windows within twenty-five (25) feet of the immediate work area, placement of dropcloths, plasticizing of a man-lift or scaffolding and other operational safeguards as outlined below:

a. two (2) layers of six (6) mil fire retardant polyethylene sheeting. The windows can be plasticized outdoors, or for reasons of safety, from the indoors. Window, door and louver units subject to complete removal must have their openings plasticized at the interior of the building. Windows that are fixed or non-operable and that will remain sealed airtight for the duration of abatement activities, do not require installation of critical barriers.
b. where non-friable materials are removed without tents, a dropcloth, made of six (6) mil fire retardant polyethylene sheeting, shall be placed on the ground below the work area to prevent spread of any ACM remnants. This dropcloth shall be a minimum of ten (10) feet wide with an additional ten (10) feet of width for every floor above a 1st floor level where removal work will take place, up to a maximum of thirty (30) feet of width measured perpendicular to the building/structure. In addition, if a straight scaffolding, man-lift,

swing scaffolding or similar equipment is used for areas above the 1st floor, the lift/scaffolding unit shall be plasticized with two (2) layers of six (6) mil fire retardant polyethylene on the platform, with plastic sheeting extended vertically to waist-high (as so equipped) guardrail sides and back of the lift unit. While the platform/lift walking surfaces must be plasticized, the asbestos abatement contractor must provide proper traction surfaces or equipment to assure the safety and comfort of abatement workers while performing abatement activities on the lift/scaffold equipment. After non-friable ACM is removed from each work location, the platform and plasticized surfaces toward the building shall be wet wiped and/or HEPA vacuumed clean before reuse. The plasticizing on the lift or scaffolding shall be periodically inspected during use and repaired as needed.

c. Under façade areas where non-friable ACM tar paper/tar is to be removed behind the face brick, whenever possible, an asbestos handler (worker) with a HEPA vacuum will position the vacuum hose within four (4) inches of the material being removed to capture small pieces of non-friable ACM and asbestos fines. The hose end will be positioned so that as many smaller pieces of material as possible will fall into the vacuum hose end. Larger pieces of ACM should be immediately bagged or containerized.

F. Visible accumulations of loose asbestos containing waste material shall be cleaned up using rubber or plastic dustpans and rubber squeegees or HEPA filtered vacuums. Metal shovels may also be used, except in the vicinity of plastic sheeting, critical barriers and isolation barriers, which could be perforated by these tools. To pick up excess water and gross wet debris, a wet-dry HEPA filtered shop vacuum dedicated to asbestos abatement may be used. This cleaning shall be done whenever there is sufficient asbestos waste material to fill a single leak-tight bag/container, or this cleaning shall be done at the end of each work shift whichever shall occur first. Visible debris shall be maintained adequately wet. Work shall stop whenever excessive water accumulation or flooding is present in the area and shall not resume until the water is collected and disposed of properly.

G. Final clean-up and clearance procedures for abatement shall comply with Section 56-9, except that only one (1) stage of cleaning (final) is to be performed. Lockdown encapsulant use is not required.

3.11 RESTORATION OF UTILITIES, FIRESTOPPING, AND FINISHES

A. After final clearance, remove locks and restore electrical and HVAC systems. All temporary power shall be disconnected, power lockouts removed and power restored. All temporary plumbing shall be removed.

B. Finishes damaged by asbestos abatement activities including, but not limited to, plaster/paint damage due to duct tape and spray adhesives, and floor tile lifted due to wet or humid conditions, shall be restored prior to final payment.
   1. Finishes unable to be restored shall be replaced under this Contract.
   2. All foam and expandable foam products and materials used to seal Work Area openings shall be completely removed upon completion of abatement activities.

C. All penetrations (including, but not limited to, pipes, ducts, etc.) through fire rated construction shall be firestopped using materials and systems tested in accordance with ASTM E814 on Projects where reinsulation is part of the required work.

PART 4 DISPOSAL OF ASBESTOS WASTE

4.01 TRANSPORTATION AND DISPOSAL SITE

A. The Contractor's Hauler and Disposal Site shall be approved by the Owner.

B. The Contractor shall give twenty-four (24) hour notification prior to removing any waste from the site. Waste shall be removed from the site only during normal working hours unless otherwise specified. No waste may be taken from the site unless the Contractor and Environmental Consultant are present and the Environmental Consultant authorizes the release of the waste as described herein.

C. All waste generated as part of the asbestos project shall be removed from the site within ten (10) calendar days after successful completion of all asbestos abatement work.

D. Upon arrival at the Project Site, the Hauler must possess and present to the Environmental Consultant a valid New York State Department of Environmental Conservation Part 364 Asbestos Hauler's Permit. The Environmental Consultant may verify the authenticity of the hauler's permit with the proper authority.

E. The Hauler, with the Contractor and the Environmental Consultant, shall inspect all material in the transport container prior to taking possession and signing the Asbestos Waste Manifests.

F. Unless specifically approved by the Owner, the Contractor shall not permit any off-site transfers of the waste or allow the waste to be transported or combined with any other off-site asbestos material. The Hauler must travel directly to the disposal site as identified on the notifications with no unauthorized stops.

4.02 WASTE STORAGE CONTAINERS

A. All waste containers shall be fully enclosed and lockable (i.e. enclosed dumpster, trailer, etc.). No open containers will be permitted on-site (i.e. open dumpster with canvas cover, etc.) unless specifically permitted by a Site Specific Variance. When asbestos contaminated waste must be kept on the work site overnight or longer, it shall be double bagged and stored in accordance with Federal, State, and local laws.

B. The Environmental Consultant shall verify that the waste storage container and/or truck tags (license plates) match that listed on the New York State Department of Environmental Conservation Part 364 permit. Any container not listed on the permit shall be removed from the site immediately.

C. The container shall be plasticized and sealed with two (2) layers of 6 mil polyethylene. Once on site, it shall be kept locked at all times, except during load out. The waste container shall not be used for storage of equipment or contractor supplies.

D. While on-site, the container shall be labeled with EPA Danger signage:

DANGER
CONTAINS ASBESTOS FIBERS
AVOID CREATING DUST
CANCER AND LUNG DISEASE HAZARD

E. The New York State Department of Environmental Conservation Asbestos Hauler's Permit number shall be stenciled on both sides and back of the container.

F. The container is not permitted to be loaded unless it is properly plasticized, has the appropriate danger signage affixed, and has the permit number appropriately stenciled on the container.

G. Before an enclosed container is removed from the Project Site for transportation to the Disposal Site, a seal will be placed on the door(s) of the container by the Environmental Consultant. The door(s) shall also be locked. The seals and locks shall be removed at the Disposal Site by the operator of the Disposal Facility and the seals shall be returned by the Disposal Facility to the Contractor.

H. If a lined and sealed open-top container is used pursuant to a Site-Specific Variance, a seal is not required.

I. The Owner may initiate random checks at the Disposal Site to ensure that the procedures outlined herein are complied with.

4.03 OWNER'S AND HAULER'S ASBESTOS WASTE MANIFESTS

A. The Hauler's Manifest shall be completed by the Contractor and verified by the Environmental Consultant that all the information and amounts are accurate and the proper signatures are in place.

C. The Manifest shall have the appropriate signatures of the Environmental Consultant, the Contractor, and the Hauler representatives prior to any waste being removed from the site.

D. Copies of the completed Hauler's Manifest shall be retained by the Environmental Consultant and the Contractor and shall remain on site for inspection.

E. Upon arrival at the Disposal Site, the Hauler's Manifest shall be signed by the Disposal Facility operator to certify receipt of ACM covered by the manifest.

F. The Disposal Facility operator shall return the original the Hauler's Manifest and the container seals to the Contractor.

G. The Contractor shall forward copies of the Hauler's Manifest and the container seals to the Environmental Consultant within 14 days of the waste container being removed from the site. Failure to do so may result in payment being withheld from the Contractor.

H. Originals of all waste disposal manifests, seals, and disposal logs shall be submitted by the Contractor to the Owner with the final close-out documentation.

END OF SECTION 02 82 00

ATTACHMENT 1
(Project Drawing HS-ASB1)

Green Path Environmental, Inc

Certified Women-Owned Business Enterprise

March 14, 2022

To: Mr. Rudy Villanyi
Nanuet Public Schools
103 Church Street, Nanuet, New York 10954

Re: **Expedited Limited Asbestos Survey**
Nanuet High School – Phase 2 and Elevator Addition
103 Church Street, Nanuet, New York
GPE Project #: 1937.07.01

Dear Mr. Villanyi:

Green Path Environmental, Inc (GPE) was retained by the Nanuet Public Schools to conduct an expedited limited asbestos survey at the Nanuet High School regarding the Phase 2 and elevator addition project renovation in reference to the KSQ Design Architects drawings dated January 31, 2022. The survey conducted on March 6 and 12, 2022 included visual observation, material sampling and laboratory sample analysis of the suspect asbestos containing material (ACM). A drawing showing the asbestos containing material locations with quantities will be provided at a later date.

Based upon a visual inspection of materials determined to be impacted by the renovation project and the attached bulk sample laboratory analytical results, the **following materials from that collected** (exterior storefront - frame beige caulking/window black caulking/above window grey transite panel, exterior front wall brick grey mortar/wall waterproofing black tar paper behind brick, exterior facade - railing brick brown mortar/brown brick grey mortar/orange brick beige mortar, exterior rear courtyard - wall waterproofing black tar paper behind brick/black asphalt for new ADA ramp, exterior east wing [area elevator wall] - wall waterproofing black tar paper behind brick/wall foundation waterproofing black tar paper/wall foundation waterproofing black tar cement, east wing roof - bottom layer beige screed/2nd layer foam brown paper/3rd layer black tar paper/4th layer brown rigid paper/top layer hot black tar, east wing roof dunnage - pitch pocket black tar/patch black tar, exterior east wing window frame black caulking, interior east wing - foyer window frame black caulking/ceiling plaster/floor terrazzo/wall CMU grey mortar/ceiling 2'X4' beige ceiling tile/walls drywall above window/wall ceramic tile glue and grout, east wing interior foyer [1st and 2nd floor] - radiator grey pipe insulation/radiator waterproofing black tar paper behind metal cover, interior store front - wall ceramic tile yellow glue/wall ceramic tile grey grout/wall white caulking to metal frame and ceramic tile/wall plaster/ceiling white drywall/ceiling white joint compound, 2nd Floor science wing – above ceiling silver-beige pipe insulation/2'x 4' white-yellow ceiling tile [type I]/2'x 4' beige-grey ceiling tile [type II]/ 2'x 4' white-grey ceiling tile [type III]/wall CMU grey mortar/floor black mastic to all 12"x12" VAT/12"x12" blue, grey floor tiles/wall brown cove base and associated brown [old] or beige [new] glues/light brown wallboard and white joint compound/black table top material/black caulking and black grout connected to table top) **are identified as asbestos containing materials (greater than one percent asbestos);**

- Exterior Storefront (Exterior Security Vestibule); frame beige caulking (horizontal and vertical) [approximately 10 Square Feet]

- Exterior Storefront (Exterior Security Vestibule); above window soffit grey transite panel. (Nanuet may want to remove all panels)
[approximately 60 Square Feet]
- Exterior Front Facade; wall waterproofing black tar paper behind brick
[approximately 300 Square Feet]
- Exterior Rear Courtyard; wall waterproofing black tar paper behind brick
[approximately 100 Square Feet]
- Exterior East Wing; wall waterproofing black tar paper behind brick
[approximately 300 Square Feet]
- Exterior East Wing; wall foundation waterproofing black tar on cement
[approximately 240 Square Feet]
- Exterior East Wing; window frame black caulking
[approximately 8 Square Feet]
- Interior East Wing Foyer (1st and 2nd floor); radiator grey pipe insulation between flooring
[approximately 4 Linear Feet]
- Interior East Wing Foyer (1st and 2nd floor); radiator waterproofing black tar paper behind metal cover [approximately 26 Square Feet]
- Interior Storefront; white caulking to metal frame and ceramic tile (horizontal and vertical) [approximately 1 Square Foot]

Per discussions with the Nanuet School District, the High School science wing - **Classrooms 230, 231, 232, 233, 234 and 235 chalkboard/whiteboard (approximately 56 Square Feet of chalkboard-whiteboard and 28 Square feet of associated whiteboard glue) and exterior wrap on wire connected to ceiling lighting (quantity to be determined) are Presumed Asbestos Containing Materials (PACM).**

It should be noted that the east wing interior foyer ceiling plaster, interior storefront wall plaster and east wing roof bottom layer beige screed laboratory results are currently inconclusive and laboratory analysis must go to Vermiculite analytical method 198.8 for further verification. The laboratory analytical results will be provided in 1 week.

Also, the interior storefront (interior security vestibule) ceiling is aluminum planks attached to metal framing, science wing classroom exhaust hoods and classroom cabinets did not have suspect ACM materials.

Representative bulk samples of all suspect materials were collected and analyzed by Polarized Light Microscopy (PLM). Bulk Sample Analysis by PLM NOB for non-friable materials adheres to NYS ELAP 198.6. The State of New York Environmental Laboratory Approval Program (ELAP) has determined that Polarized Light Microscopy is not consistently reliable in detecting asbestos in non-friable organically bound materials. Quantitative transmission electron microscopy (TEM) is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos containing. Therefore, if PLM yields negative results for a non-friable material (NOB), it must be confirmed by Transmission Electron Microscopy (TEM). Bulk Sample Analysis by Transmission Electron Microscopy (TEM) NOB adheres to NYS ELAP Method 198.4.

Analysis of the bulk samples collected was performed by Metro Analytical Labs (Metro) located at 255 West 36th Street, Suite 101, New York, NY 10018.

Metro is accredited by the New York State Department of Health, Environmental Laboratory Accreditation Program (ELAP Accreditation No. 12003) for Bulk Sample Analysis by Polarized Light Microscopy (PLM) Friable adheres to EPA/600/M4-082-20 or NYS ELAP Method 198.1 and Bulk Sample Analysis by Polarized Light Microscopy (PLM) NOB by NYS ELAP Method 198.6 and Bulk Sample Analysis by Transmission Electron Microscopy (TEM) NOB adheres to NYS ELAP Method 198.4. as required.

According to the EPA regulations and NYS DOL Industrial Code Rule 56 asbestos-containing materials (ACM) must be removed prior to disturbance during renovation activities.

If you have any questions, please do not hesitate to call me at (917)-623-2411.

Sincerely,
Green Path Environmental, Inc



Scott Graber
Client Manager

Attachments:

- Laboratory Analytical Results with Chain of Custody Form (reports dated March 7 and 13, 2022)
- GPE License and Certification
- Laboratory Certification

Laboratory Analytical Results with Chain of Custody Forms (Reports dated March 7 and 13, 2022)

METRO ANALYTICAL LABORATORIES
255 West 36th St., Suite #101
New York, NY 10018
p: (212) 695-0165 f: (212) 695-0183

ASBESTOS ANALYSIS of BULK SAMPLE by POLARIZED LIGHT MICROSCOPY and TRANSMISSION ELECTRON MICROSCOPY

Client:	**Green Path Environmental Inc**	Contract:	**Nanuet UFSD**	**Metro Lab ID #:**	**B22030206**
Address:	79 Glover Street	Client Job #:	**1937.07.01**		
	Staten Island NY 10308	Location:	**50 Blauvelt Road**		
	P: (347) 276-2339 F: (631) 991-9143		**Miller ES - Various**	Sample Received:	03/06/2022
			Nanuet	PLM Analysis Date:	03/07/2022
Contact:	**Alex Rubin**	Sampled By:	A.R.	TEM Analysis Date:	03/07/2022
	M:	Sampled Date:	03/05/2022	Reported By:	Turiana Moreira
	E:	Turnaround Time:	24 hrs	Report Date:	03/08/2022

Summary of Analysis

LAB ID #	Client Sample #	Sample Description	Test	Fibrous Material	Non-Fibrous Material	Asbestos	Total Asbestos
1	1	White Homogenous Granular BOYS RESTROOM - C124 - CEILING PLASTER - TOP LAYER	NY ELAP 198.1	5% Cellulose	92.13% Non-Fibrous	2.87% Chrysotile	2.9%
			NY ELAP 198.6				
			NY ELAP 198.4				
2	2	BOYS RESTROOM - C124 - CEILING PLASTER - TOP LAYER	NY ELAP 198.1			Positive Stop	Not Analyzed
			NY ELAP 198.6				
			NY ELAP 198.4				
3	3	BOYS RESTROOM - C124 - CEILING PLASTER - TOP LAYER	NY ELAP 198.1			Positive Stop	Not Analyzed
			NY ELAP 198.6				
			NY ELAP 198.4				
4	4	White Homogenous Granular BOYS RESTROOM - C124 - CEILING PLASTER - MIDDLE LAYER	NY ELAP 198.1	4% Cellulose	92.59% Non-Fibrous	3.41% Chrysotile	3.4%
			NY ELAP 198.6				
			NY ELAP 198.4				
5	5	BOYS RESTROOM - C124 - CEILING PLASTER - MIDDLE LAYER	NY ELAP 198.1			Positive Stop	Not Analyzed
			NY ELAP 198.6				
			NY ELAP 198.4				
6	6	BOYS RESTROOM - C124 - CEILING PLASTER - MIDDLE LAYER	NY ELAP 198.1			Positive Stop	Not Analyzed
			NY ELAP 198.6				
			NY ELAP 198.4				
7	7	Brown Homogenous Granular BOYS RESTROOM - C124 - CEILING PLASTER - BOTTOM LAYER	NY ELAP 198.1	5% Cellulose	75% Non-Fibrous 20% Vermiculite	Analysis Halted	
			NY ELAP 198.6				
			NY ELAP 198.4				
8	8	Brown Homogenous Granular BOYS RESTROOM - C124 - CEILING PLASTER - BOTTOM LAYER	NY ELAP 198.1	7% Cellulose	78% Non-Fibrous 15% Vermiculite	Analysis Halted	
			NY ELAP 198.6				
			NY ELAP 198.4				
9	9	Brown Homogenous Granular BOYS RESTROOM - C124 - CEILING PLASTER - BOTTOM LAYER	NY ELAP 198.1	4% Cellulose	71% Non-Fibrous 25% Vermiculite	Analysis Halted	
			NY ELAP 198.6				
			NY ELAP 198.4				
10	10	White Homogenous Granular BOYS RESTROOM - C124 - UPPER WALL PLASTER - TOP LAYER	NY ELAP 198.1		100% Non-Fibrous	None Detected	
			NY ELAP 198.6				
			NY ELAP 198.4				

Comments: Samples7,8,9,13,14,15,41,42,43,69,70,71,93,94,95,96,97 & 98 analysis was terminated due to the presence of vermiculite. Results are inconclusive and must go for 198.8 method for further verification.

Equipment: PLM SCOPE Nikon Optiphot-2
TEM SCOPE #1 - Hitachi H-600

Zlatan Dimitrijevic
Laboratory Director

Sameh Youssef
PLM Analyst

Zlatan Dimitrijevic
TEM Analyst

NYS ELAP ID # 12003

NVLAP Lab Code 500081-0

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ASBESTOS ANALYSIS of BULK SAMPLE by POLARIZED LIGHT MICROSCOPY and TRANSMISSION ELECTRON MICROSCOPY

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Address:	79 Glover Street	Client Job #:	**1937.07.01**		
	Staten Island NY 10308	Location:	**50 Blauvelt Road**		
	P: (347) 276-2339 F: (631) 991-9143		**Miller ES - Various**	Sample Received:	03/06/2022
			Nanuet	PLM Analysis Date:	03/07/2022
Contact:	**Alex Rubin**	Sampled By:	A.R.	TEM Analysis Date:	03/07/2022
	M:	Sampled Date:	03/05/2022	Reported By:	Turiana Moreira
	E:	Turnaround Time:	24 hrs	Report Date:	03/08/2022

Summary of Analysis

LAB ID #	Client Sample #	Sample Description	Test	Fibrous Material	Non-Fibrous Material	Asbestos	Total Asbestos
11	11	White Homogenous Granular BOYS RESTROOM - C124 - UPPER WALL PLASTER - TOP LAYER	NY ELAP 198.1		100% Non-Fibrous	None Detected	
			NY ELAP 198.6				
			NY ELAP 198.4				
12	12	White Homogenous Granular BOYS RESTROOM - C124 - UPPER WALL PLASTER - TOP LAYER	NY ELAP 198.1		100% Non-Fibrous	None Detected	
			NY ELAP 198.6				
			NY ELAP 198.4				
13	13	Brown Homogenous Granular BOYS RESTROOM - C124 - UPPER WALL PLASTER - BOTTOM LAYER	NY ELAP 198.1	3% Cellulose	87% Non-Fibrous 10% Vermiculite	Analysis Halted	
			NY ELAP 198.6				
			NY ELAP 198.4				
14	14	Brown Homogenous Granular BOYS RESTROOM - C124 - UPPER WALL PLASTER - BOTTOM LAYER	NY ELAP 198.1	2% Cellulose	78% Non-Fibrous 20% Vermiculite	Analysis Halted	
			NY ELAP 198.6				
			NY ELAP 198.4				
15	15	Brown Homogenous Granular BOYS RESTROOM - C124 - UPPER WALL PLASTER - BOTTOM LAYER	NY ELAP 198.1	4% Cellulose	86% Non-Fibrous 10% Vermiculite	Analysis Halted	
			NY ELAP 198.6				
			NY ELAP 198.4				
16	16	White Homogenous Granular BOYS RESTROOM - C124 - LOWER WALL - C.T. GROUT	NY ELAP 198.1		100% Non-Fibrous	None Detected	
			NY ELAP 198.6				
			NY ELAP 198.4				
17	17	White Homogenous Granular BOYS RESTROOM - C124 - LOWER WALL - C.T. GROUT	NY ELAP 198.1		100% Non-Fibrous	None Detected	
			NY ELAP 198.6				
			NY ELAP 198.4				
18	18	White Homogenous Granular BOYS RESTROOM - C124 - LOWER WALL - C.T. GROUT	NY ELAP 198.1		100% Non-Fibrous	None Detected	
			NY ELAP 198.6				
			NY ELAP 198.4				
19	19	Grey Homogenous Granular BOYS RESTROOM - C124 - LOWER WALL - C.T. THINSET	NY ELAP 198.1		100% Non-Fibrous	None Detected	
			NY ELAP 198.6				
			NY ELAP 198.4				
20	20	Grey Homogenous Granular BOYS RESTROOM - C124 - LOWER WALL - C.T. THINSET	NY ELAP 198.1		100% Non-Fibrous	None Detected	
			NY ELAP 198.6				
			NY ELAP 198.4				

Comments: Samples7,8,9,13,14,15,41,42,43,69,70,71,93,94,95,96,97 & 98 analysis was terminated due to the presence of vermiculite. Results are inconclusive and must go for 198.8 method for further verification.

Equipment: PLM SCOPE Nikon Optiphot-2
TEM SCOPE #1 - Hitachi H-600

Zlatan Dimitrijevic
Laboratory Director

Sameh Youssef
PLM Analyst

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	Staten Island NY 10308	Location:	**50 Blauvelt Road**		
	P: (347) 276-2339 F: (631) 991-9143		**Miller ES - Various**	Sample Received:	03/06/2022
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Contact:	**Alex Rubin**	Sampled By:	A.R.	TEM Analysis Date:	03/07/2022
	M:	Sampled Date:	03/05/2022	Reported By:	Turiana Moreira
	E:	Turnaround Time:	24 hrs	Report Date:	03/08/2022

Summary of Analysis

LAB ID #	Client Sample #	Sample Description	Test	Fibrous Material	Non-Fibrous Material	Asbestos	Total Asbestos
21	21	Grey Homogenous Granular BOYS RESTROOM - C124 - LOWER WALL - C.T. THINSET	NY ELAP 198.1		100% Non-Fibrous	None Detected	
			NY ELAP 198.6				
			NY ELAP 198.4				
22	22	Grey Homogenous Granular BOYS RESTROOM - C124 - LOWER WALL - MORTAR	NY ELAP 198.1		100% Non-Fibrous	None Detected	
			NY ELAP 198.6				
			NY ELAP 198.4				
23	23	Grey Homogenous Granular BOYS RESTROOM - C124 - LOWER WALL - MORTAR	NY ELAP 198.1		100% Non-Fibrous	None Detected	
			NY ELAP 198.6				
			NY ELAP 198.4				
24	24	Grey Homogenous Granular BOYS RESTROOM - C124 - LOWER WALL - MORTAR	NY ELAP 198.1		100% Non-Fibrous	None Detected	
			NY ELAP 198.6				
			NY ELAP 198.4				
25	25	Black Homogenous NOB BOYS RESTROOM - C124 - WET WALLS - PIPE INSULATION OUTER COAT - TAR PAPER	NY ELAP 198.1				
			NY ELAP 198.6			1.8% Chrysotile	1.8%
			NY ELAP 198.4			Not Analyzed	
26	26	Black Homogenous NOB BOYS RESTROOM - C124 - WET WALLS - PIPE INSULATION OUTER COAT - TAR PAPER	NY ELAP 198.1				
			NY ELAP 198.6			Positive Stop Not Analyzed	
			NY ELAP 198.4			Not Analyzed	
27	27	Black Homogenous NOB BOYS RESTROOM - C124 - WET WALLS - PIPE INSULATION OUTER COAT - TAR PAPER	NY ELAP 198.1				
			NY ELAP 198.6			Positive Stop Not Analyzed	
			NY ELAP 198.4			Not Analyzed	
28	28	Brown Homogenous Fibrous BOYS RESTROOM - C124 - WET WALLS - PIPE INSULATION INNER COAT - PAPER	NY ELAP 198.1	95% Cellulose	3.3% Non-Fibrous	1.70% Chrysotile	1.7%
			NY ELAP 198.6				
			NY ELAP 198.4				
29	29	BOYS RESTROOM - C124 - WET WALLS - PIPE INSULATION INNER COAT - PAPER	NY ELAP 198.1			Positive Stop Not Analyzed	
			NY ELAP 198.6				
			NY ELAP 198.4				
30	30	BOYS RESTROOM - C124 - WET WALLS - PIPE INSULATION INNER COAT - PAPER	NY ELAP 198.1			Positive Stop Not Analyzed	
			NY ELAP 198.6				
			NY ELAP 198.4				

Comments: Samples7,8,9,13,14,15,41,42,43,69,70,71,93,94,95,96,97 & 98 analysis was terminated due to the presence of vermiculite. Results are inconclusive and must go for 198.8 method for further verification.

Equipment: PLM SCOPE Nikon Optiphot-2
TEM SCOPE #1 - Hitachi H-600

Zlatan Dimitrijevic
Laboratory Director

Sameh Youssef
PLM Analyst

Zlatan Dimitrijevic
TEM Analyst

NYS ELAP ID # 12003

NVLAP Lab Code 500081-0

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ASBESTOS ANALYSIS of BULK SAMPLE by POLARIZED LIGHT MICROSCOPY and TRANSMISSION ELECTRON MICROSCOPY

Client:	**Green Path Environmental Inc**	Contract:	**Nanuet UFSD**	**Metro Lab ID #:**	**B22030206**
Address:	79 Glover Street	Client Job #:	**1937.07.01**		
	Staten Island NY 10308	Location:	**50 Blauvelt Road**		
	P: (347) 276-2339 F: (631) 991-9143		**Miller ES - Various**	Sample Received:	03/06/2022
			Nanuet	PLM Analysis Date:	03/07/2022
Contact:	**Alex Rubin**	Sampled By:	A.R.	TEM Analysis Date:	03/07/2022
	M:	Sampled Date:	03/05/2022	Reported By:	Turiana Moreira
	E:	Turnaround Time:	24 hrs	Report Date:	03/08/2022

Summary of Analysis

LAB ID #	Client Sample #	Sample Description	Test	Fibrous Material	Non-Fibrous Material	Asbestos	Total Asbestos
31	31	Grey Homogenous Granular BOYS RESTROOM - C124 - FLOOR - SOFT FILLER MORTAR	NY ELAP 198.1		100% Non-Fibrous	None Detected	
			NY ELAP 198.6				
			NY ELAP 198.4				
32	32	Grey Homogenous Granular BOYS RESTROOM - C124 - FLOOR - SOFT FILLER MORTAR	NY ELAP 198.1		100% Non-Fibrous	None Detected	
			NY ELAP 198.6				
			NY ELAP 198.4				
33	33	Grey Homogenous Granular BOYS RESTROOM - C124 - FLOOR - C.T. THINSET / GROUT	NY ELAP 198.1		100% Non-Fibrous	None Detected	
			NY ELAP 198.6				
			NY ELAP 198.4				
34	34	Grey Homogenous Granular BOYS RESTROOM - C124 - FLOOR - C.T. THINSET / GROUT	NY ELAP 198.1		100% Non-Fibrous	None Detected	
			NY ELAP 198.6				
			NY ELAP 198.4				
35	35	White Homogenous Granular GIRLS RESTROOM - C126 - CEILING PLASTER - TOP LAYER	NY ELAP 198.1	1% Cellulose	97.15% Non-Fibrous	1.85% Chrysotile	1.9%
			NY ELAP 198.6				
			NY ELAP 198.4				
36	36	GIRLS RESTROOM - C126 - CEILING PLASTER - TOP LAYER	NY ELAP 198.1			Positive Stop Not Analyzed	
			NY ELAP 198.6				
			NY ELAP 198.4				
37	37	GIRLS RESTROOM - C126 - CEILING PLASTER - TOP LAYER	NY ELAP 198.1			Positive Stop Not Analyzed	
			NY ELAP 198.6				
			NY ELAP 198.4				
38	38	White Homogenous Granular GIRLS RESTROOM - C126 - CEILING PLASTER - MIDDLE LAYER	NY ELAP 198.1	3% Cellulose	94.46% Non-Fibrous	2.54% Chrysotile	2.5%
			NY ELAP 198.6				
			NY ELAP 198.4				
39	39	GIRLS RESTROOM - C126 - CEILING PLASTER - MIDDLE LAYER	NY ELAP 198.1			Positive Stop Not Analyzed	
			NY ELAP 198.6				
			NY ELAP 198.4				
40	40	GIRLS RESTROOM - C126 - CEILING PLASTER - MIDDLE LAYER	NY ELAP 198.1			Positive Stop Not Analyzed	
			NY ELAP 198.6				
			NY ELAP 198.4				

Comments: Samples7,8,9,13,14,15,41,42,43,69,70,71,93,94,95,96,97 & 98 analysis was terminated due to the presence of vermiculite. Results are inconclusive and must go for 198.8 method for further verification.

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Contact:	**Alex Rubin**	Sampled By:	A.R.	TEM Analysis Date:	03/07/2022
	M:	Sampled Date:	03/05/2022	Reported By:	Turiana Moreira
	E:	Turnaround Time:	24 hrs	Report Date:	03/08/2022

Summary of Analysis

LAB ID #	Client Sample #	Sample Description	Test	Fibrous Material	Non-Fibrous Material	Asbestos	Total Asbestos
41	41	Brown Homogenous Granular GIRLS RESTROOM - C126 - CEILING PLASTER - BOTTOM LAYER	NY ELAP 198.1		85% Non-Fibrous 15% Vermiculite	**Analysis Halted**	
			NY ELAP 198.6				
			NY ELAP 198.4				
42	42	Brown Homogenous Granular GIRLS RESTROOM - C126 - CEILING PLASTER - BOTTOM LAYER	NY ELAP 198.1		75% Non-Fibrous 25% Vermiculite	**Analysis Halted**	
			NY ELAP 198.6				
			NY ELAP 198.4				
43	43	Brown Homogenous Granular GIRLS RESTROOM - C126 - CEILING PLASTER - BOTTOM LAYER	NY ELAP 198.1		90% Non-Fibrous 10% Vermiculite	**Analysis Halted**	
			NY ELAP 198.6				
			NY ELAP 198.4				
44	44	White Homogenous Granular GIRLS RESTROOM - C126 - UPPER WALLS PLASTER - TOP LAYER	NY ELAP 198.1		100% Non-Fibrous	**None Detected**	
			NY ELAP 198.6				
			NY ELAP 198.4				
45	45	White Homogenous Granular GIRLS RESTROOM - C126 - UPPER WALLS PLASTER - TOP LAYER	NY ELAP 198.1		100% Non-Fibrous	**None Detected**	
			NY ELAP 198.6				
			NY ELAP 198.4				
46	46	White Homogenous Granular GIRLS RESTROOM - C126 - UPPER WALLS PLASTER - TOP LAYER	NY ELAP 198.1		100% Non-Fibrous	**None Detected**	
			NY ELAP 198.6				
			NY ELAP 198.4				
47	47	Brown Homogenous Granular GIRLS RESTROOM - C126 - UPPER WALLS PLASTER - BOTTOM LAYER	NY ELAP 198.1		100% Non-Fibrous	**None Detected**	
			NY ELAP 198.6				
			NY ELAP 198.4				
48	48	Brown Homogenous Granular GIRLS RESTROOM - C126 - UPPER WALLS PLASTER - BOTTOM LAYER	NY ELAP 198.1		100% Non-Fibrous	**None Detected**	
			NY ELAP 198.6				
			NY ELAP 198.4				
49	49	Brown Homogenous Granular GIRLS RESTROOM - C126 - UPPER WALLS PLASTER - BOTTOM LAYER	NY ELAP 198.1		100% Non-Fibrous	**None Detected**	
			NY ELAP 198.6				
			NY ELAP 198.4				
50	50	Beige Homogenous Granular GIRLS RESTROOM - C126 - LOWER WALLS - C.T. GROUT	NY ELAP 198.1		100% Non-Fibrous	**None Detected**	
			NY ELAP 198.6				
			NY ELAP 198.4				

Comments: Samples7,8,9,13,14,15,41,42,43,69,70,71,93,94,95,96,97 & 98 analysis was terminated due to the presence of vermiculite. Results are inconclusive and must go for 198.8 method for further verification.

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Contact:	**Alex Rubin**	Sampled By:	A.R.	TEM Analysis Date:	03/07/2022
	M:	Sampled Date:	03/05/2022	Reported By:	Turiana Moreira
	E:	Turnaround Time:	24 hrs	Report Date:	03/08/2022

Summary of Analysis

LAB ID #	Client Sample #	Sample Description	Test	Fibrous Material	Non-Fibrous Material	Asbestos	Total Asbestos
51	51	Beige Homogenous Granular GIRLS RESTROOM - C126 - LOWER WALLS - C.T. GROUT	NY ELAP 198.1		100% Non-Fibrous	None Detected	
			NY ELAP 198.6				
			NY ELAP 198.4				
52	52	White Homogenous Granular GIRLS RESTROOM - C126 - LOWER WALLS - C.T. GROUT	NY ELAP 198.1		100% Non-Fibrous	None Detected	
			NY ELAP 198.6				
			NY ELAP 198.4				
53	53	Grey Homogenous Granular GIRLS RESTROOM - C126 - LOWER WALLS - C.T. THINSET	NY ELAP 198.1		100% Non-Fibrous	None Detected	
			NY ELAP 198.6				
			NY ELAP 198.4				
54	54	Grey Homogenous Granular GIRLS RESTROOM - C126 - LOWER WALLS - C.T. THINSET	NY ELAP 198.1		100% Non-Fibrous	None Detected	
			NY ELAP 198.6				
			NY ELAP 198.4				
55	55	Grey Homogenous Granular GIRLS RESTROOM - C126 - LOWER WALLS - C.T. THINSET	NY ELAP 198.1		100% Non-Fibrous	None Detected	
			NY ELAP 198.6				
			NY ELAP 198.4				
56	56	Grey Homogenous Granular GIRLS RESTROOM - C126 - LOWER WALLS - MORTAR	NY ELAP 198.1		100% Non-Fibrous	None Detected	
			NY ELAP 198.6				
			NY ELAP 198.4				
57	57	Grey Homogenous Granular GIRLS RESTROOM - C126 - LOWER WALLS - MORTAR	NY ELAP 198.1		100% Non-Fibrous	None Detected	
			NY ELAP 198.6				
			NY ELAP 198.4				
58	58	Grey Homogenous Granular GIRLS RESTROOM - C126 - LOWER WALLS - MORTAR	NY ELAP 198.1		100% Non-Fibrous	None Detected	
			NY ELAP 198.6				
			NY ELAP 198.4				
59	59	Black Homogenous NOB GIRLS RESTROOM - C126 - WET WALLS PIPE INSULATION OUTER COAT - TAR PAPER	NY ELAP 198.1				
			NY ELAP 198.6			2.2% Chrysotile	2.2%
			NY ELAP 198.4			Not Analyzed	
60	60	Black Homogenous NOB GIRLS RESTROOM - C126 - WET WALLS PIPE INSULATION OUTER COAT - TAR PAPER	NY ELAP 198.1				
			NY ELAP 198.6			Positive Stop Not Analyzed	
			NY ELAP 198.4			Not Analyzed	

Comments: Samples7,8,9,13,14,15,41,42,43,69,70,71,93,94,95,96,97 & 98 analysis was terminated due to the presence of vermiculite. Results are inconclusive and must go for 198.8 method for further verification.

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	P: (347) 276-2339 F: (631) 991-9143		**Miller ES - Various**	Sample Received:	03/06/2022
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Contact:	**Alex Rubin**	Sampled By:	A.R.	TEM Analysis Date:	03/07/2022
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	E:	Turnaround Time:	24 hrs	Report Date:	03/08/2022

Summary of Analysis

LAB ID #	Client Sample #	Sample Description	Test	Fibrous Material	Non-Fibrous Material	Asbestos	Total Asbestos
61	61	Black Homogenous NOB GIRLS RESTROOM - C126 - WET WALLS PIPE INSULATION OUTER COAT - TAR PAPER	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4			**Positive Stop** **Not Analyzed** **Not Analyzed**	
62	62	Brown Homogenous Fibrous GIRLS RESTROOM - C126 - WET WALLS PIPE INSULATION INNER COAT - PAPER	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4	95% Cellulose	2.72% Non-Fibrous	**2.28% Chrysotile**	**2.3%**
63	63	GIRLS RESTROOM - C126 - WET WALLS PIPE INSULATION INNER COAT - PAPER	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4			**Positive Stop** **Not Analyzed**	
64	64	GIRLS RESTROOM - C126 - WET WALLS PIPE INSULATION INNER COAT - PAPER	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4			**Positive Stop** **Not Analyzed**	
65	65	Grey Homogenous Granular GIRLS RESTROOM - C126 - FLOOR - C.T. THINSET / GROUT	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4		100% Non-Fibrous	**None Detected**	
66	66	Grey Homogenous Granular GIRLS RESTROOM - C126 - FLOOR - C.T. THINSET / GROUT	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4		100% Non-Fibrous	**None Detected**	
67	67	Grey Homogenous Granular GIRLS RESTROOM - C126 - SOFT FILLER MORTAR	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4		100% Non-Fibrous	**None Detected**	
68	68	Grey Homogenous Granular GIRLS RESTROOM - C126 - SOFT FILLER MORTAR	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4		100% Non-Fibrous	**None Detected**	
69	69	White Homogenous Granular KINDERGARTEN RESTROOMS C132/C133 - CEILING PLASTER - TOP LAYER	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4		93% Non-Fibrous 7% Vermiculite	**Analysis Halted**	
70	70	White Homogenous Granular KINDERGARTEN RESTROOMS C132/C133 - CEILING PLASTER - TOP LAYER	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4		91% Non-Fibrous 9% Vermiculite	**Analysis Halted**	

Comments: Samples7,8,9,13,14,15,41,42,43,69,70,71,93,94,95,96,97 & 98 analysis was terminated due to the presence of vermiculite. Results are inconclusive and must go for 198.8 method for further verification.

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Summary of Analysis

LAB ID #	Client Sample #	Sample Description	Test	Fibrous Material	Non-Fibrous Material	Asbestos	Total Asbestos
71	71	White Homogenous Granular KINDERGARTEN RESTROOMS C132/C133 - CEILING PLASTER - TOP LAYER	NY ELAP 198.1		92% Non-Fibrous 8% Vermiculite	**Analysis Halted**	
			NY ELAP 198.6				
			NY ELAP 198.4				
72	72	Grey Homogenous Granular KINDERGARTEN RESTROOMS C132/C133 - CEILING PLASTER - BOTTOM LAYER	NY ELAP 198.1	2% Cellulose	96.32% Non-Fibrous	**1.68% Chrysotile**	**1.7%**
			NY ELAP 198.6				
			NY ELAP 198.4				
73	73	KINDERGARTEN RESTROOMS C132/C133 - CEILING PLASTER - BOTTOM LAYER	NY ELAP 198.1			**Positive Stop** **Not Analyzed**	
			NY ELAP 198.6				
			NY ELAP 198.4				
74	74	KINDERGARTEN RESTROOMS C132/C133 - CEILING PLASTER - BOTTOM LAYER	NY ELAP 198.1			**Positive Stop** **Not Analyzed**	
			NY ELAP 198.6				
			NY ELAP 198.4				
75	75	White Homogenous NOB KINDERGARTEN RESTROOMS C132/C133 - DOOR FRAME - CAULKING	NY ELAP 198.1				
			NY ELAP 198.6			**Inconclusive** **None Detected**	
			NY ELAP 198.4			**None Detected**	
76	76	White Homogenous NOB KINDERGARTEN RESTROOMS C132/C133 - DOOR FRAME - CAULKING	NY ELAP 198.1				
			NY ELAP 198.6			**Inconclusive** **None Detected**	
			NY ELAP 198.4			**None Detected**	
77	77	Brown Homogenous NOB KINDERGARTEN RESTROOMS C132/C133 - WALL PANELS GLUE	NY ELAP 198.1				
			NY ELAP 198.6			**Inconclusive** **None Detected**	
			NY ELAP 198.4			**None Detected**	
78	78	Brown Homogenous NOB KINDERGARTEN RESTROOMS C132/C133 - WALL PANELS GLUE	NY ELAP 198.1				
			NY ELAP 198.6			**Inconclusive** **None Detected**	
			NY ELAP 198.4			**None Detected**	
79	79	Grey Homogenous Granular KINDERGARTEN RESTROOMS C132/C133 - WALL PLASTER - BOTTOM LAYER	NY ELAP 198.1		100% Non-Fibrous	**None Detected**	
			NY ELAP 198.6				
			NY ELAP 198.4				
80	80	Grey Homogenous Granular KINDERGARTEN RESTROOMS C132/C133 - WALL PLASTER - BOTTOM LAYER	NY ELAP 198.1		100% Non-Fibrous	**None Detected**	
			NY ELAP 198.6				
			NY ELAP 198.4				

Comments: Samples7,8,9,13,14,15,41,42,43,69,70,71,93,94,95,96,97 & 98 analysis was terminated due to the presence of vermiculite. Results are inconclusive and must go for 198.8 method for further verification.

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Summary of Analysis

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81	81	Grey Homogenous Granular KINDERGARTEN RESTROOMS C132/C133 - WALL PLASTER - BOTTOM LAYER	NY ELAP 198.1		100% Non-Fibrous	None Detected	
			NY ELAP 198.6				
			NY ELAP 198.4				
82	82	Grey Homogenous Granular KINDERGARTEN RESTROOMS C132/C133 - WALL PLASTER - TOP LAYER	NY ELAP 198.1		100% Non-Fibrous	None Detected	
			NY ELAP 198.6				
			NY ELAP 198.4				
83	83	White Homogenous Granular KINDERGARTEN RESTROOMS C132/C133 - WALL PLASTER - TOP LAYER	NY ELAP 198.1		100% Non-Fibrous	None Detected	
			NY ELAP 198.6				
			NY ELAP 198.4				
84	84	White Homogenous Granular KINDERGARTEN RESTROOMS C132/C133 - WALL PLASTER - TOP LAYER	NY ELAP 198.1		100% Non-Fibrous	None Detected	
			NY ELAP 198.6				
			NY ELAP 198.4				
85	85	Black Homogenous NOB KINDERGARTEN RESTROOMS C132/C133 - BEHIND C.T. COVEBASE - TAR PAPER	NY ELAP 198.1				
			NY ELAP 198.6			Inconclusive	None Detected
			NY ELAP 198.4				None Detected
86	86	Black Homogenous NOB KINDERGARTEN RESTROOMS C132/C133 - BEHIND C.T. COVEBASE - TAR PAPER	NY ELAP 198.1				
			NY ELAP 198.6			Inconclusive	None Detected
			NY ELAP 198.4				None Detected
87	87	White Homogenous NOB KINDERGARTEN RESTROOMS C132/C133 - BEHIND C.T. COVEBASE - GLUE	NY ELAP 198.1				
			NY ELAP 198.6			Inconclusive	None Detected
			NY ELAP 198.4				None Detected
88	88	White Homogenous NOB KINDERGARTEN RESTROOMS C132/C133 - BEHIND C.T. COVEBASE - GLUE	NY ELAP 198.1				
			NY ELAP 198.6			Inconclusive	None Detected
			NY ELAP 198.4				None Detected
89	89	Beige Homogenous Granular KINDERGARTEN RESTROOMS C132/C133 - FLOOR & COVE BASE C.T. GROUT	NY ELAP 198.1		100% Non-Fibrous	None Detected	
			NY ELAP 198.6				
			NY ELAP 198.4				
90	90	Beige Homogenous Granular KINDERGARTEN RESTROOMS C132/C133 - FLOOR & COVE BASE C.T. GROUT	NY ELAP 198.1		100% Non-Fibrous	None Detected	
			NY ELAP 198.6				
			NY ELAP 198.4				

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	P: (347) 276-2339 F: (631) 991-9143		**Miller ES - Various**	Sample Received:	03/06/2022
			Nanuet	PLM Analysis Date:	03/07/2022
Contact:	**Alex Rubin**	Sampled By:	A.R.	TEM Analysis Date:	03/07/2022
	M:	Sampled Date:	03/05/2022	Reported By:	Turiana Moreira
	E:	Turnaround Time:	24 hrs	Report Date:	03/08/2022

Summary of Analysis

LAB ID #	Client Sample #	Sample Description	Test	Fibrous Material	Non-Fibrous Material	Asbestos	Total Asbestos
91	91	Brown / Grey Homogenous NOB KINDERGARTEN RESTROOMS C132/C133 - FLOOR - THINSET W/ GLUE TO C.T.	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4			 2.5% Chrysotile Not Analyzed	2.5%
92	92	Brown / Grey Homogenous NOB KINDERGARTEN RESTROOMS C132/C133 - FLOOR - THINSET W/ GLUE TO C.T.	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4			 Positive Stop Not Analyzed Not Analyzed	
93	93	Brown Homogenous Granular KINDERGARTEN RESTROOMS C132/C133 - UPPER CEILING PLASTER - BOTTOM LAYER	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4		70% Non-Fibrous 30% Vermiculite	Analysis Halted	
94	94	Brown Homogenous Granular KINDERGARTEN RESTROOMS C132/C133 - UPPER CEILING PLASTER - BOTTOM LAYER	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4		80% Non-Fibrous 20% Vermiculite	Analysis Halted	
95	95	Brown Homogenous Granular KINDERGARTEN RESTROOMS C132/C133 - UPPER CEILING PLASTER - BOTTOM LAYER	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4		75% Non-Fibrous 25% Vermiculite	Analysis Halted	
96	96	White Homogenous Granular KINDERGARTEN RESTROOMS C132/C133 - UPPER CEILING PLASTER - TOP LAYER	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4		70% Non-Fibrous 30% Vermiculite	Analysis Halted	
97	97	White Homogenous Granular KINDERGARTEN RESTROOMS C132/C133 - UPPER CEILING PLASTER - TOP LAYER	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4		85% Non-Fibrous 15% Vermiculite	Analysis Halted	
98	98	White Homogenous Granular KINDERGARTEN RESTROOMS C132/C133 - UPPER CEILING PLASTER - TOP LAYER	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4		80% Non-Fibrous 20% Vermiculite	Analysis Halted	
99	99	Yellow / Brown Homogenous NOB KINDERGARTEN RESTROOMS C132/C133 - WALL PEDBOARD W/ GLUE	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4			 2.5% Chrysotile Not Analyzed	2.5%
100	100	Yellow / Brown Homogenous NOB KINDERGARTEN RESTROOMS C132/C133 - WALL PEDBOARD W/ GLUE	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4			 Positive Stop Not Analyzed Not Analyzed	

Comments: Samples7,8,9,13,14,15,41,42,43,69,70,71,93,94,95,96,97 & 98 analysis was terminated due to the presence of vermiculite. Results are inconclusive and must go for 198.8 method for further verification.

Equipment: PLM SCOPE Nikon Optiphot-2
TEM SCOPE #1 - Hitachi H-600

Zlatan Dimitrijevic
Laboratory Director

Sameh Youssef
PLM Analyst

Zlatan Dimitrijevic
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NYS ELAP ID # 12003

NVLAP Lab Code 500081-0

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ASBESTOS ANALYSIS of BULK SAMPLE by POLARIZED LIGHT MICROSCOPY and TRANSMISSION ELECTRON MICROSCOPY

Client:	**Green Path Environmental Inc**	Contract:	**Nanuet UFSD**	**Metro Lab ID #:**	**B22030206**
Address:	79 Glover Street	Client Job #:	**1937.07.01**		
	Staten Island NY 10308	Location:	**50 Blauvelt Road**		
	P: (347) 276-2339 F: (631) 991-9143		**Miller ES - Various**	Sample Received:	03/06/2022
			Nanuet	PLM Analysis Date:	03/07/2022
Contact:	**Alex Rubin**	Sampled By:	A.R.	TEM Analysis Date:	03/07/2022
	M:	Sampled Date:	03/05/2022	Reported By:	Turiana Moreira
	E:	Turnaround Time:	24 hrs	Report Date:	03/08/2022

Summary of Analysis

LAB ID #	Client Sample #	Sample Description	Test	Fibrous Material	Non-Fibrous Material	Asbestos	Total Asbestos
101	101	Brown Homogenous NOB KINDERGARTEN RESTROOMS C132/C133 - GLUE BEHIND PEDBOARD	NY ELAP 198.1				
			NY ELAP 198.6			Inconclusive	None Detected
			NY ELAP 198.4				None Detected
102	102	Brown Homogenous NOB KINDERGARTEN RESTROOMS C132/C133 - GLUE BEHIND PEDBOARD	NY ELAP 198.1				
			NY ELAP 198.6			Inconclusive	None Detected
			NY ELAP 198.4				None Detected
103	103	Grey Homogenous Fibrous KINDERGARTEN RESTROOMS C132/C133 - WET WALL PIPE INSULATION	NY ELAP 198.1	40% Fiberglass	60% Non-Fibrous		None Detected
			NY ELAP 198.6				
			NY ELAP 198.4				
104	104	Grey Homogenous Fibrous KINDERGARTEN RESTROOMS C132/C133 - WET WALL PIPE INSULATION	NY ELAP 198.1	25% Fiberglass	75% Non-Fibrous		None Detected
			NY ELAP 198.6				
			NY ELAP 198.4				
105	105	Grey Homogenous Fibrous KINDERGARTEN RESTROOMS C132/C133 - WET WALL PIPE INSULATION	NY ELAP 198.1	25% Fiberglass	75% Non-Fibrous		None Detected
			NY ELAP 198.6				
			NY ELAP 198.4				
106	106	White Homogenous Granular RESTROOMS C128/C129 + C134/C135 - CEILING PLASTER MATERIAL	NY ELAP 198.1		100% Non-Fibrous		None Detected
			NY ELAP 198.6				
			NY ELAP 198.4				
107	107	White Homogenous Granular RESTROOMS C128/C129 + C134/C135 - CEILING PLASTER MATERIAL	NY ELAP 198.1		100% Non-Fibrous		None Detected
			NY ELAP 198.6				
			NY ELAP 198.4				
108	108	White Homogenous Granular RESTROOMS C128/C129 + C134/C135 - CEILING PLASTER MATERIAL	NY ELAP 198.1		100% Non-Fibrous		None Detected
			NY ELAP 198.6				
			NY ELAP 198.4				
109	109	Grey Homogenous Granular RESTROOMS C128/C129 - UPPER WALL PLASTER - BOTTOM LAYER	NY ELAP 198.1		100% Non-Fibrous		None Detected
			NY ELAP 198.6				
			NY ELAP 198.4				
110	110	Grey Homogenous Granular RESTROOMS C128/C129 - UPPER WALL PLASTER - BOTTOM LAYER	NY ELAP 198.1		100% Non-Fibrous		None Detected
			NY ELAP 198.6				
			NY ELAP 198.4				

Comments: Samples7,8,9,13,14,15,41,42,43,69,70,71,93,94,95,96,97 & 98 analysis was terminated due to the presence of vermiculite. Results are inconclusive and must go for 198.8 method for further verification.

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TEM SCOPE #1 - Hitachi H-600

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	Staten Island NY 10308	Location:	**50 Blauvelt Road**		
	P: (347) 276-2339 F: (631) 991-9143		**Miller ES - Various**	Sample Received:	03/06/2022
			Nanuet	PLM Analysis Date:	03/07/2022
Contact:	**Alex Rubin**	Sampled By:	A.R.	TEM Analysis Date:	03/07/2022
	M:	Sampled Date:	03/05/2022	Reported By:	Turiana Moreira
	E:	Turnaround Time:	24 hrs	Report Date:	03/08/2022

Summary of Analysis

LAB ID #	Client Sample #	Sample Description	Test	Fibrous Material	Non-Fibrous Material	Asbestos	Total Asbestos
111	111	Grey Homogenous Granular RESTROOMS C128/C129 - UPPER WALL PLASTER - BOTTOM LAYER	NY ELAP 198.1		100% Non-Fibrous	None Detected	
			NY ELAP 198.6				
			NY ELAP 198.4				
112	112	White Homogenous Granular RESTROOMS C128/C129 - UPPER WALL PLASTER - BOTTOM LAYER	NY ELAP 198.1		100% Non-Fibrous	None Detected	
			NY ELAP 198.6				
			NY ELAP 198.4				
113	113	White Homogenous Granular RESTROOMS C128/C129 - UPPER WALL PLASTER - BOTTOM LAYER	NY ELAP 198.1		100% Non-Fibrous	None Detected	
			NY ELAP 198.6				
			NY ELAP 198.4				
114	114	White Homogenous Granular RESTROOMS C128/C129 - UPPER WALL PLASTER - BOTTOM LAYER	NY ELAP 198.1		100% Non-Fibrous	None Detected	
			NY ELAP 198.6				
			NY ELAP 198.4				
115	115	Grey Homogenous Granular RESTROOMS C134/C135 - WALL - CMU BLOCK	NY ELAP 198.1		100% Non-Fibrous	None Detected	
			NY ELAP 198.6				
			NY ELAP 198.4				
116	116	Grey Homogenous Granular RESTROOMS C134/C135 - WALL - CMU BLOCK	NY ELAP 198.1		100% Non-Fibrous	None Detected	
			NY ELAP 198.6				
			NY ELAP 198.4				
117	117	Tan Homogenous Granular RESTROOMS C134/C135 + C128/C129 - WALL C.T. GROUT	NY ELAP 198.1		100% Non-Fibrous	None Detected	
			NY ELAP 198.6				
			NY ELAP 198.4				
118	118	Tan Homogenous Granular RESTROOMS C134/C135 + C128/C129 - WALL C.T. GROUT	NY ELAP 198.1		100% Non-Fibrous	None Detected	
			NY ELAP 198.6				
			NY ELAP 198.4				
119	119	Tan Homogenous Granular RESTROOMS C134/C135 + C128/C129 - WALL C.T. GROUT	NY ELAP 198.1		100% Non-Fibrous	None Detected	
			NY ELAP 198.6				
			NY ELAP 198.4				
120	120	Grey Homogenous Granular RESTROOMS C134/C135 + C128/C129 - WALL C.T. THINSET MORTAR	NY ELAP 198.1		100% Non-Fibrous	None Detected	
			NY ELAP 198.6				
			NY ELAP 198.4				

Comments: Samples7,8,9,13,14,15,41,42,43,69,70,71,93,94,95,96,97 & 98 analysis was terminated due to the presence of vermiculite. Results are inconclusive and must go for 198.8 method for further verification.

Equipment: PLM SCOPE Nikon Optiphot-2
TEM SCOPE #1 - Hitachi H-600

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Sameh Youssef
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Address:	79 Glover Street	Client Job #:	**1937.07.01**		
	Staten Island NY 10308	Location:	**50 Blauvelt Road**		
	P: (347) 276-2339 F: (631) 991-9143		**Miller ES - Various**	Sample Received:	03/06/2022
			Nanuet	PLM Analysis Date:	03/07/2022
Contact:	**Alex Rubin**	Sampled By:	A.R.	TEM Analysis Date:	03/07/2022
	M:	Sampled Date:	03/05/2022	Reported By:	Turiana Moreira
	E:	Turnaround Time:	24 hrs	Report Date:	03/08/2022

Summary of Analysis

LAB ID #	Client Sample #	Sample Description	Test	Fibrous Material	Non-Fibrous Material	Asbestos	Total Asbestos
121	121	Grey Homogenous Granular RESTROOMS C134/C135 + C128/C129 - WALL C.T. THINSET MORTAR	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4		100% Non-Fibrous	None Detected	
122	122	Grey Homogenous Granular RESTROOMS C134/C135 + C128/C129 - WALL C.T. THINSET MORTAR	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4		100% Non-Fibrous	None Detected	
123	123	Grey Homogenous Granular RESTROOMS C134/C135 + C128/C129 - WALL C.T. MORTAR	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4		100% Non-Fibrous	None Detected	
124	124	Grey Homogenous Granular RESTROOMS C134/C135 + C128/C129 - WALL C.T. MORTAR	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4		100% Non-Fibrous	None Detected	
125	125	Grey Homogenous Granular RESTROOMS C134/C135 + C128/C129 - WALL C.T. MORTAR	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4		100% Non-Fibrous	None Detected	
126	126	Black Homogenous NOB RESTROOMS C134/C135 + C128/C129 - WET WALL PIPE INSUL OUTER LYR - TAR PAPER	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4			Inconclusive None Detected None Detected	
127	127	Black Homogenous NOB RESTROOMS C134/C135 + C128/C129 - WET WALL PIPE INSUL OUTER LYR - TAR PAPER	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4			Inconclusive None Detected 1.6% Chrysotile	1.6%
128	128	Black Homogenous NOB RESTROOMS C134/C135 + C128/C129 - WET WALL PIPE INSUL OUTER LYR - TAR PAPER	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4			Inconclusive None Detected Positive Stop Not Analyzed	
129	129	Brown Homogenous Fibrous RESTROOMS C134/C135 + C128/C129 - WET WALL PIPE INSUL INNER LAYER - PAPER	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4	100% Cellulose		None Detected	
130	130	Brown Homogenous Fibrous RESTROOMS C134/C135 + C128/C129 - WET WALL PIPE INSUL INNER LAYER - PAPER	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4	100% Cellulose		None Detected	

Comments: Samples7,8,9,13,14,15,41,42,43,69,70,71,93,94,95,96,97 & 98 analysis was terminated due to the presence of vermiculite. Results are inconclusive and must go for 198.8 method for further verification.

Equipment: PLM SCOPE Nikon Optiphot-2
TEM SCOPE #1 - Hitachi H-600

Zlatan Dimitrijevic
Laboratory Director

Sameh Youssef
PLM Analyst

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TEM Analyst

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ASBESTOS ANALYSIS of BULK SAMPLE by POLARIZED LIGHT MICROSCOPY and TRANSMISSION ELECTRON MICROSCOPY

Client:	**Green Path Environmental Inc**	Contract:	**Nanuet UFSD**	**Metro Lab ID #:**	**B22030206**
Address:	79 Glover Street	Client Job #:	**1937.07.01**		
	Staten Island NY 10308	Location:	**50 Blauvelt Road**		
	P: (347) 276-2339 F: (631) 991-9143		**Miller ES - Various**	Sample Received:	03/06/2022
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Contact:	**Alex Rubin**	Sampled By:	A.R.	TEM Analysis Date:	03/07/2022
	M:	Sampled Date:	03/05/2022	Reported By:	Turiana Moreira
	E:	Turnaround Time:	24 hrs	Report Date:	03/08/2022

Summary of Analysis

LAB ID #	Client Sample #	Sample Description	Test	Fibrous Material	Non-Fibrous Material	Asbestos	Total Asbestos
131	131	Brown Homogenous Fibrous RESTROOMS C134/C135 + C128/C129 - WET WALL PIPE INSUL INNER LAYER - PAPER	NY ELAP 198.1	100% Cellulose		None Detected	
			NY ELAP 198.6				
			NY ELAP 198.4				
132	132	Black Homogenous NOB RESTROOMS C134/C135 - IN-WALL RADIATOR PIPE INSULATION OUTER LAYER - TAR PAPER	NY ELAP 198.1				3.0%
			NY ELAP 198.6			3.0% Chrysotile	
			NY ELAP 198.4			Not Analyzed	
133	133	Black Homogenous NOB RESTROOMS C134/C135 - IN-WALL RADIATOR PIPE INSULATION OUTER LAYER - TAR PAPER	NY ELAP 198.1				
			NY ELAP 198.6			Positive Stop Not Analyzed	
			NY ELAP 198.4			Not Analyzed	
134	134	Black Homogenous NOB RESTROOMS C134/C135 - IN-WALL RADIATOR PIPE INSULATION OUTER LAYER - TAR PAPER	NY ELAP 198.1				
			NY ELAP 198.6			Positive Stop Not Analyzed	
			NY ELAP 198.4			Not Analyzed	
135	135	Beige Homogenous Fibrous RESTROOMS C134/C135 - IN-WALL RADIATOR PIPE INSULATION INNER LAYER - AIRCELL	NY ELAP 198.1	85% Cellulose	1.67% Non-Fibrous	13.33% Chrysotile	13.3%
			NY ELAP 198.6				
			NY ELAP 198.4				
136	136	RESTROOMS C134/C135 - IN-WALL RADIATOR PIPE INSULATION INNER LAYER - AIRCELL	NY ELAP 198.1			Positive Stop Not Analyzed	
			NY ELAP 198.6				
			NY ELAP 198.4				
137	137	RESTROOMS C134/C135 - IN-WALL RADIATOR PIPE INSULATION INNER LAYER - AIRCELL	NY ELAP 198.1			Positive Stop Not Analyzed	
			NY ELAP 198.6				
			NY ELAP 198.4				
138	138	Grey Homogenous Fibrous RESTROOMS C128/C129 - WET WALL ELBOW INSULATION	NY ELAP 198.1	30% Cellulose	64.67% Non-Fibrous	5.33% Chrysotile	5.3%
			NY ELAP 198.6				
			NY ELAP 198.4				
139	139	RESTROOMS C128/C129 - WET WALL ELBOW INSULATION	NY ELAP 198.1			Positive Stop Not Analyzed	
			NY ELAP 198.6				
			NY ELAP 198.4				
140	140	RESTROOMS C128/C129 - WET WALL ELBOW INSULATION	NY ELAP 198.1			Positive Stop Not Analyzed	
			NY ELAP 198.6				
			NY ELAP 198.4				

Comments: Samples7,8,9,13,14,15,41,42,43,69,70,71,93,94,95,96,97 & 98 analysis was terminated due to the presence of vermiculite. Results are inconclusive and must go for 198.8 method for further verification.

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Contact:	**Alex Rubin**	Sampled By:	A.R.	TEM Analysis Date:	03/07/2022
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	E:	Turnaround Time:	24 hrs	Report Date:	03/08/2022

Summary of Analysis

LAB ID #	Client Sample #	Sample Description	Test	Fibrous Material	Non-Fibrous Material	Asbestos	Total Asbestos
141	141	Grey Homogenous Granular RESTROOMS C128/C129/C134/C135 - FLOOR - C.T. GROUT	NY ELAP 198.1		100% Non-Fibrous	None Detected	
			NY ELAP 198.6				
			NY ELAP 198.4				
142	142	Grey Homogenous Granular RESTROOMS C128/C129/C134/C135 - FLOOR - C.T. GROUT	NY ELAP 198.1		100% Non-Fibrous	None Detected	
			NY ELAP 198.6				
			NY ELAP 198.4				
143	143	Grey Homogenous Granular RESTROOMS C128/C129/C134/C135 - FLOOR - C.T. THINSET MORTAR	NY ELAP 198.1		100% Non-Fibrous	None Detected	
			NY ELAP 198.6				
			NY ELAP 198.4				
144	144	Grey Homogenous Granular RESTROOMS C128/C129/C134/C135 - FLOOR - C.T. THINSET MORTAR	NY ELAP 198.1		100% Non-Fibrous	None Detected	
			NY ELAP 198.6				
			NY ELAP 198.4				
145	145	Grey Homogenous Granular THROUGHOUT SCHOOL HALLWAY - FLOOR - TERRAZZO	NY ELAP 198.1		100% Non-Fibrous	None Detected	
			NY ELAP 198.6				
			NY ELAP 198.4				
146	146	Grey Homogenous Granular THROUGHOUT SCHOOL HALLWAY - FLOOR - TERRAZZO	NY ELAP 198.1		100% Non-Fibrous	None Detected	
			NY ELAP 198.6				
			NY ELAP 198.4				

Comments: Samples7,8,9,13,14,15,41,42,43,69,70,71,93,94,95,96,97 & 98 analysis was terminated due to the presence of vermiculite. Results are inconclusive and must go for 198.8 method for further verification.

Equipment: PLM SCOPE Nikon Optiphot-2
TEM SCOPE #1 - Hitachi H-600

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Report Notes

General Notes and Disclaimers

- The samples analyzed in this report were not collected by this laboratory - they were received from the client, or an agent of the client, in good condition, unless otherwise noted.
- All results are calculated based on client-provided samples and / or measurements and fall within the acceptable Quality Control limits, unless otherwise noted.
- The report shall not be reproduced, except in full, without the written approval of the laboratory.
- This report relates only to the samples tested. It may not be used by the client to claim project endorsement by NVLAP, NYS ELAP, or any other government agency.
- All samples will be properly disposed of after 60 days.
- Quality Control data (including 95% confidence limits, laboratory / analysis accuracy and precision) is available upon request.

Notes Regarding Asbestos Testing

- Air Sample Analysis by Phase Contrast Microscopy (PCM) adheres to Method NIOSH-7400. Results < 7 fibers / mm^2 are statistically insignificant.
- Percentages are calculated using the EPA equivalent Stratified Point-Count Method.
- Bulk Sample Analysis by Polarized Light Microscopy (PLM) Friable adheres to EPA/600/M4-082-20 or NYS ELAP 198.1.
- Bulk Sample Analysis by Polarized Light Microscopy (PLM) NOB adheres to NYS ELAP 198.6. This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite.
- All inhomogeneous layers of the bulk samples were analyzed separately.
- Analytical results are sometimes based on the residue percentage(s) provided by the client along with the filters. Trace denotes asbestos detected at < 1%. Smiliarly, samples below quantitation limit (RL) are reported with a less than sign (<).
- Polarized Light Microscopy is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. Quantitative TEM is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos containing.
- Bulk Sample Analysis by Transmission Electron Microscopy (TEM) NOB adheres to NYS ELAP Method 198.4.
- Air Sample Analysis by Transmission Electron Microscopy (TEM) adheres to Method EPA CFR Part 763 Final Rule (AHERA).
- Air Sample Analysis by Transmission Electron Microscopy (TEM) Worksheets are available upon request.

Green Path
Environmental, Inc

BULK SAMPLE DATA AND CHAIN OF CUSTODY FORM

79 Glover Street, Suite 1, Staten Island, NY 10308
T. (347) 276-2839 • F. (646) 774-0354

Please e-mail results to: info@gpe.nyc and office@gpe.nyc

Client name: Nanuet UFSD	**LAB ID No.:** B22030206	**Date:** 3/5/22 **Time:** 9:15AM-5:00pm
Project address: 50 Blauvelt Rd, Nanuet - Miller ES	**Green Path Project #** 1937.07.01 **PO #:**	**Inspector/investigator name:** Alexander Rubin
Sampling Areas: Various	**Analysis Requested:** TAT ☐ Rush ☐ 12 Hr ☒ 24 Hr ☐ 48 Hr ☐ 72 Hr ☐ Other	**Comments:** Stop at first positive in the each homogeneous group

H.A.	SAMPLE ID	SAMPLE LOCATION	SAMPLE DESCRIPTION	COLOR	Q/TY SQ FT	Q/TY LN. FT	MATERIAL CONDITION
1	1	Boys Restroom - C124	Ceiling Plaster - Top Layer	white	253		Damaged
	2						
	3						
2	4		- Middle Layer	white			
	5						
	6						
3	7		- Bottom Layer	Brown			
	8						
	9						
4	10		Upper Wall Plaster - Top Layer	white	240		
	11						
	12						
5	13		- Bottom Layer	Brown			
	14						
	15						
		4	4			4	

☒ PLM ☒ NOB PLM ☒ NOB TEM [ ] TEM DUST WIPE - ASTM D6480-05 [ ] OTHER Specify:

Client Manager: Scott Graber - 917-623-2411

Chain Of Custody

Relinquished by: (Full Name & Signature)	Date & Time	Method of Submittal	Received by: (Full Name & Signature)	Date & Time
1. A. Rubin				3/6 3:44pm

Lab Information

Analyzed by: (Full Name)	Signature	Date	Analyzed by: (Full Name)	Signature	Date
1.			2.		

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BULK SAMPLE DATA AND CHAIN OF CUSTODY FORM

79 Glover Street, Suite 1, Staten Island, NY 10308
T. (347) 276-2339 • F. (646) 774-0354

Please e-mail results to: info@gpe.nyc and office@gpe.nyc

Client name: Nanuet UFSD	**LAB ID No.:** B22030206	**Date:** 3/5/22 **Time:** 9:15AM-5pm
Project address: 50 Blauvelt Rd, Nanuet - Miller ES	**Green Path Project #** 1937.07.01 **PO #:**	**Inspector/investigator name:** Alexander Rubin
Sampling Areas: Various	**Analysis Requested:** TAT ☐ Rush ☐ 12 Hr ☒ 24 Hr ☐ 48 Hr ☐ 72 Hr ☐ Other	**Comments:** Stop at first positive in the each homogeneous group

H.A.	SAMPLE ID	SAMPLE LOCATION	SAMPLE DESCRIPTION	COLOR	Q/TY SQ FT	Q/TY LN. FT	MATERIAL CONDITION
6	16	Boys Restroom - C124	Lower walls - C.T. grout	white	360		Damaged
	17						
	18						
7	19		- C.T. thinset	Grey			
	20						
	21						
8	22		- mortar	D. Gray			
	23						
	24						
9	25		wet walls pipe insulation	Black		160	
	26		outer coat - TAR PAPER				
	27						
10	28		wet walls pipe insulation	Brown			
	29		inner coat - PAPER				
	30						
		"	"				"

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Client Manager: Scott Graber - 917-623-2411

Chain Of Custody

Relinquished by: (Full Name & Signature)	Date & Time	Method of Submittal	Received by: (Full Name & Signature)	Date & Time
1. A. Rubin				3/6/22 3:44pm

Lab Information

Analyzed by: (Full Name)	Signature	Date	Analyzed by: (Full Name)	Signature	Date
1.			2.		

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Client name: Nanuet UFSD	**LAB ID No.:** B22030206	**Date:** 3/5/22 **Time:** 9:15AM - 5:00pm
Project address: 50 Blauvelt Rd, Nanuet - Miller ES	**Green Path Project #** 1937.07.01 **PO #:**	**Inspector/investigator name:** Alexander Rubin
Sampling Areas: Various	**Analysis Requested:** TAT ☐ Rush ☐ 12 Hr ☒ 24 Hr ☐ 48 Hr ☐ 72 Hr ☐ Other	**Comments:** Stop at first positive in the each homogeneous group

H.A.	SAMPLE ID	SAMPLE LOCATION	SAMPLE DESCRIPTION	COLOR	Q/TY SQ FT	Q/TY LN. FT	MATERIAL CONDITION
11	31	Boys Restroom - C124	FLOOR - Soft Filler Mortar	Brown	253		Damaged
	32						
12	33		- C.T. Thinset/Grout	Gray			
	34						
13	35	GIRLS Restroom - C126	Ceiling Plaster - Top Layer	white	208		Damaged
	36						
	37						
14	38		- Middle Layer	white			
	39						
	40						
15	41		- Bottom Layer	Brown			
	42						
	43						
16	44		Copper walls Plaster - Top Layer	white	240		
	45						
	46						

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Client Manager: Scott Graber - 917-623-2411

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Relinquished by: (Full Name & Signature)	Date & Time	Method of Submittal	Received by: (Full Name & Signature)	Date & Time
1. A. Rubin				3/6/22 8:24PM

Lab Information

Analyzed by: (Full Name)	Signature	Date	Analyzed by: (Full Name)	Signature	Date
1.			2.		

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Client name: Nanuet UFSD	LAB ID No.: B2203020 6	Date: 3/5/22 Time: 9:15AM - 5:00pm
Project address: 50 Blauvelt Rd, Nanuet - Miller ES	Green Path Project # 1937.07.01 PO #:	Inspector/investigator name: Alexander Rubin
Sampling Areas: Various	Analysis Requested: TAT ☐ Rush ☐ 12 Hr ☒ 24 Hr ☐ 48 Hr ☐ 72 Hr ☐ Other	Comments: Stop at first positive in the each homogeneous group

H.A.	SAMPLE ID	SAMPLE LOCATION	SAMPLE DESCRIPTION	COLOR	Q/TY SQ FT	Q/TY LN. FT	MATERIAL CONDITION
17	47	GR/S Restroom - C 126	Upper walls Plaster-Bottom Layer	Brown	240		Damaged
	48						
	49						
18	50		Lower walls - C.T. grout	white	420		
	51						
	52						
19	53		- C.T. thinset	Gray			
	54						
	55						
20	56		- mortar	D. Gray			
	57						
	58						
21	59		wet walls pipe insulation	Black		160	
	60		outer coat - TAR PAPER				
	61						
	~~62~~	4	4			4	

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Client Manager: Scott Graber - 917-623-2411

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Relinquished by: (Full Name & Signature)	Date & Time	Method of Submittal	Received by: (Full Name & Signature)	Date & Time
1. A. Rubin			Janet	3/6/22 8:24pm

Lab Information

Analyzed by: (Full Name)	Signature	Date	Analyzed by: (Full Name)	Signature	Date
1.			2.		

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Client name: Nanuet UFSD	**LAB ID No:** B22030206	**Date:** 3/5/22 **Time:** 9:15AM - 5:00pm
Project address: 50 Blauvelt Rd, Nanuet - Miller ES	**Green Path Project #** 1937.07.01 **PO #:**	**Inspector/investigator name:** Alexander Rubin
Sampling Areas: Various	**Analysis Requested:** TAT ☐ Rush ☐ 12 Hr ☒ 24 Hr ☐ 48 Hr ☐ 72 Hr ☐ Other	**Comments:** Stop at first positive in the each homogeneous group

H.A.	SAMPLE ID	SAMPLE LOCATION	SAMPLE DESCRIPTION	COLOR	Q/TY SQ FT	Q/TY LN. FT	MATERIAL CONDITION
22	62	Girls Restroom - C126	Wet Walls - Pipe Insulation	Brown		160	Damaged
	63	↓	Inner coat - Paper	↓		↓	↓
	64	↓	↓	↓		↓	↓
23	65	↓	Floor - C.T. Thinset/Grout	Gray	208	↓	↓
	66	↓	↓	↓	↓	↓	↓
24	67	↓	- Soft Filler Mortar	Brown	↓	↓	↓
	68	↓	↓	↓	↓	↓	↓
25	69	Kindergarten Restrooms C132/C133	Ceiling Plaster - Top Layer	white	48	↓	↓
	70	↓	↓	↓	↓	↓	↓
	71	↓	↓	↓	↓	↓	↓
26	72	↓	- Bottom Layer	Brown	↓	↓	↓
	73	↓	↓	↓	↓	↓	↓
	74	↓	↓	↓	↓	↓	↓
27	75	↓	Door Frame - Ceiling	white	1	↓	↓
	76	↓	↓	↓	↓	↓	↓

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Client Manager: Scott Graber - 917-623-2411

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1. A. Rubin			Janet	3/6/22 8:44 am

Lab Information

Analyzed by: (Full Name)	Signature	Date	Analyzed by: (Full Name)	Signature	Date
1.			2.		

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Client name: Nanuet UFSD	LAB ID No.: B220302206	Date: 3/5/22 Time: 9:15AM-5:00pm
Project address: 50 Blauvelt Rd, Nanuet - Miller ES	Green Path Project # 1937.07.01 PO #:	Inspector/investigator name: Alexander Rubin
Sampling Areas: Various	Analysis Requested: TAT ☐ Rush ☐ 12 Hr ☒ 24 Hr ☐ 48 Hr ☐ 72 Hr ☐ Other	Comments: Stop at first positive in the each homogeneous group

H.A.	SAMPLE ID	SAMPLE LOCATION	SAMPLE DESCRIPTION	COLOR	Q/TY SQ FT	Q/TY LN. FT	MATERIAL CONDITION
28	77	Kindergarten Restroom's C132/C133	wall paint's glue	Brown	120		Damaged
	78			↓	↓		
29	79		wall Plaster-Bottom layer	Gray	240		
	80						
	81						
30	82		-Top layer	white			
	83						
	84						
31	85		Behind C.T. Cove Base-Tar Paper	Black	8		
	86						
32	87		-Glue	white	8		
	88						
33	89		Floor & Cove Base C.T. grout	Brown	48		
	90						
34	91		Floor - Thinset w/glue	Gray/Brown	48		
	92		To C.T.				

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Client Manager: Scott Graber - 917-623-2411

Chain Of Custody				
Relinquished by: (Full Name & Signature) A. Rubin	Date & Time	Method of Submittal	Received by: (Full Name & Signature)	Date & Time
1.				3/6/22 8:44pm

Lab Information

Analyzed by: (Full Name)	Signature	Date	Analyzed by: (Full Name)	Signature	Date
1.			2.		

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Client name: Nanuet UFSD	**LAB ID No.:** B22030206	**Date:** 3/6/22 **Time:** 9:30AM – 1pm
Project address: 50 Blauvelt Rd, Nanuet - Miller ES	**Green Path Project #** 1937.07.01 **PO #:**	**Inspector/investigator name:** Alexander Rubin
Sampling Areas: Various	**Analysis Requested:** TAT ☐ Rush ☐ 12 Hr ☒ 24 Hr ☐ 48 Hr ☐ 72 Hr ☐ Other	**Comments:** Stop at first positive in the each homogeneous group

H.A.	SAMPLE ID	SAMPLE LOCATION	SAMPLE DESCRIPTION	COLOR	Q/TY SQ FT	Q/TY LN. FT	MATERIAL CONDITION
35	93	Kindergarten Restrooms C132/C133	Upper Ceiling Plaster-Bottom Layer	Brown	40		Damaged
	94						
	95						
36	96		= Top layer	white			
	97						
	98						
37	99		Wall pegboard w/glue L	Brown	60		Good
	100						
38	101		Glue Behind Pegboard	Brown			
	102						
39	103		Wet wall pipe insulation	white		10	Damaged
	104						
	105						
40	106	Restrooms C128/C129+ C134/C135	Ceiling Plaster Material	white	554		Damaged
	107						
	108						

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Client Manager: Scott Graber - 917-623-2411

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1. A. Rubin				3/6/22 8:44pm

Lab Information

Analyzed by: (Full Name)	Signature	Date	Analyzed by: (Full Name)	Signature	Date
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Client name: Nanuet UFSD	**LAB ID No.:** B2203026	**Date:** 3/6/22 **Time:** 9:30AM - 1pm
Project address: 50 Blauvelt Rd, Nanuet - Miller ES	**Green Path Project #** 1937.07.01 **PO #:**	**Inspector/investigator name:** Alexander Rubin
Sampling Areas: Various	**Analysis Requested:** TAT ☐ Rush ☐ 12 Hr ☒ 24 Hr ☐ 48 Hr ☐ 72 Hr ☐ Other	**Comments:** Stop at first positive in the each homogeneous group

H.A.	SAMPLE ID	SAMPLE LOCATION	SAMPLE DESCRIPTION	COLOR	Q/TY SQ FT	Q/TY LN. FT	MATERIAL CONDITION
41	109	Restrooms C128/C129 +	Upper wall Plaster - Bottom Layer	Gray	400		Damaged
	110	~~C134/C135~~ DD					
	111						
42	112			white			
	113						
	114						
43	115	Restrooms C134/C135	CU All - CMU Block	Gray	520		Good
	116						
44	117	Restrooms C134/C135 +	Wall C.T. grout	white	984		Damaged
	118	C128/C129					
	119						
45	120		C.T. Thinset mortar	white			
	121						
	122						
46	123		C.T. mortar	Gray			
	124						

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Client Manager: Scott Graber - 917-623-2411

Chain Of Custody

Relinquished by: (Full Name & Signature)	Date & Time	Method of Submittal	Received by: (Full Name & Signature)	Date & Time
1. A. Rubin				3/6/22 3:44pm

Lab Information

Analyzed by: (Full Name)	Signature	Date	Analyzed by: (Full Name)	Signature	Date
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New York, NY 10018
p: (212) 695-0165 f: (212) 695-0183

ASBESTOS ANALYSIS of BULK SAMPLE by POLARIZED LIGHT MICROSCOPY and TRANSMISSION ELECTRON MICROSCOPY

Client:	**Green Path Environmental Inc**	Contract:	**Nanuet UFSD**	**Metro Lab ID #:**	**B22030467**
Address:	79 Glover Street	Client Job #:			
	Staten Island NY 10308	Location:	**103 Church Street**		
	P: (347) 276-2339 F: (631) 991-9143		**Nanuet HS**	Sample Received:	03/12/2022
			Nanuet New York 10954	PLM Analysis Date:	03/13/2022
Contact:	**Alex Rubin**	Sampled By:	A.R.	TEM Analysis Date:	03/13/2022
	M:	Sampled Date:	03/12/2022	Reported By:	Janet Herminia-Santos
	E:	Turnaround Time:	24 hrs	Report Date:	03/13/2022

Summary of Analysis

LAB ID #	Client Sample #	Sample Description	Test	Fibrous Material	Non-Fibrous Material	Asbestos	Total Asbestos
1	1	Brown Homogenous Fibrous 2ND FL. - SCIENCE WING ABOVE CEILING - PIPE INSULATION - SILVER / BEIGE	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4	35% Cellulose 20% Fiberglass	45% Non-Fibrous	None Detected	
2	2	Brown Homogenous Fibrous 2ND FL. - SCIENCE WING ABOVE CEILING - PIPE INSULATION - SILVER / BEIGE	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4	30% Cellulose 25% Fiberglass	45% Non-Fibrous	None Detected	
3	3	Brown Homogenous Fibrous 2ND FL. - SCIENCE WING ABOVE CEILING - PIPE INSULATION - SILVER / BEIGE	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4	30% Cellulose 20% Fiberglass	50% Non-Fibrous	None Detected	
4	4	Yellow Homogenous NOB 2ND FL. - SCIENCE WING - 2 x 4 CEILING TILE (TYPE I) - WHITE / YELLOW	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4			 Inconclusive None Detected	
5	5	Yellow Homogenous NOB 2ND FL. - SCIENCE WING - 2 x 4 CEILING TILE (TYPE I) - WHITE / YELLOW	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4			 Inconclusive None Detected	
6	6	Grey Homogenous NOB 2ND FL. - SCIENCE WING - 2 x 4 FISSURING CEILING TILE (TYPE II) - BEIGE / GREY	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4			 Inconclusive None Detected	
7	7	Grey Homogenous NOB 2ND FL. - SCIENCE WING - 2 x 4 FISSURING CEILING TILE (TYPE II) - BEIGE / GREY	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4			 Inconclusive None Detected	
8	8	Grey Homogenous NOB 2ND FL. - SCIENCE WING - 2 x 4 FLAT CEILING TILE (TYPE III) - WHITE / GREY	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4			 Inconclusive None Detected	
9	9	Grey Homogenous NOB 2ND FL. - SCIENCE WING - 2 x 4 FLAT CEILING TILE (TYPE III) - WHITE / GREY	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4			 Inconclusive None Detected	
10	10	Grey Homogenous Granular 2ND FL. - SCIENCE WING - WALL - CMU MORTAR - GREY	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4		100% Non-Fibrous	None Detected	

Comments

Equipment: PLM SCOPE Nikon Optiphot-2
TEM SCOPE #2 - Hitachi H-7000

Zlatan Dimitrijevic
Laboratory Director

Reda Abdelmalak
PLM Analyst

Atef Guirguis
TEM Analyst

NYS ELAP ID # 12003

NVLAP Lab Code 500081-0

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ASBESTOS ANALYSIS of BULK SAMPLE by POLARIZED LIGHT MICROSCOPY and TRANSMISSION ELECTRON MICROSCOPY

Client:	**Green Path Environmental Inc**	Contract:	**Nanuet UFSD**	**Metro Lab ID #:**	**B22030467**
Address:	79 Glover Street	Client Job #:			
	Staten Island NY 10308	Location:	**103 Church Street**		
	P: (347) 276-2339 F: (631) 991-9143		**Nanuet HS**	Sample Received:	03/12/2022
			Nanuet New York 10954	PLM Analysis Date:	03/13/2022
Contact:	**Alex Rubin**	Sampled By:	A.R.	TEM Analysis Date:	03/13/2022
	M:	Sampled Date:	03/12/2022	Reported By:	Janet Herminia-Santos
	E:	Turnaround Time:	24 hrs	Report Date:	03/13/2022

Summary of Analysis

LAB ID #	Client Sample #	Sample Description	Test	Fibrous Material	Non-Fibrous Material	Asbestos	Total Asbestos
11	11	Grey Homogenous Granular 2ND FL. - SCIENCE WING - WALL - CMU MORTAR - GREY	NY ELAP 198.1		100% Non-Fibrous	None Detected	
			NY ELAP 198.6				
			NY ELAP 198.4				
12	12	Black Homogenous NOB 2ND FL. - SCIENCE WING - FLOOR - MASTIC TO ALL 12 x 12 VAT - BLACK	NY ELAP 198.1				
			NY ELAP 198.6			Inconclusive	None Detected
			NY ELAP 198.4				None Detected
13	13	Black Homogenous NOB 2ND FL. - SCIENCE WING - FLOOR - MASTIC TO ALL 12 x 12 VAT - BLACK	NY ELAP 198.1				
			NY ELAP 198.6			Inconclusive	None Detected
			NY ELAP 198.4				None Detected
14	14	Grey Homogenous NOB 2ND FL. - SCIENCE WING - FLOOR - 12 x 12 FLOOR TILE - BLUE	NY ELAP 198.1				
			NY ELAP 198.6			Inconclusive	None Detected
			NY ELAP 198.4				None Detected
15	15	Grey Homogenous NOB 2ND FL. - SCIENCE WING - FLOOR - 12 x 12 FLOOR TILE - BLUE	NY ELAP 198.1				
			NY ELAP 198.6			Inconclusive	None Detected
			NY ELAP 198.4				None Detected
16	16	Grey Homogenous NOB 2ND FL. - SCIENCE WING - FLOOR - 12 x 12 FLOOR TILE - GREY	NY ELAP 198.1				
			NY ELAP 198.6			Inconclusive	None Detected
			NY ELAP 198.4				None Detected
17	17	Grey Homogenous NOB 2ND FL. - SCIENCE WING - FLOOR - 12 x 12 FLOOR TILE - GREY	NY ELAP 198.1				
			NY ELAP 198.6			Inconclusive	None Detected
			NY ELAP 198.4				None Detected
18	18	Grey Homogenous NOB 2ND FL. - SCIENCE WING - WALL - COVE BASE OLD GLUE - BROWN	NY ELAP 198.1				
			NY ELAP 198.6			Inconclusive	None Detected
			NY ELAP 198.4				None Detected
19	19	Grey Homogenous NOB 2ND FL. - SCIENCE WING - WALL - COVE BASE OLD GLUE - BROWN	NY ELAP 198.1				
			NY ELAP 198.6			Inconclusive	None Detected
			NY ELAP 198.4				None Detected
20	20	Beige Homogenous NOB 2ND FL. - SCIENCE WING - WALL - COVE BASE OVER GLUE - BEIGE	NY ELAP 198.1				
			NY ELAP 198.6			Inconclusive	None Detected
			NY ELAP 198.4				None Detected

Comments

Equipment: PLM SCOPE Nikon Optiphot-2
TEM SCOPE #2 - Hitachi H-7000

Zlatan Dimitrijevic
Laboratory Director

Reda Abdelmalak
PLM Analyst

Atef Guirguis
TEM Analyst

NYS ELAP ID # 12003

NVLAP Lab Code 500081-0

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ASBESTOS ANALYSIS of BULK SAMPLE by POLARIZED LIGHT MICROSCOPY and TRANSMISSION ELECTRON MICROSCOPY

Client:	**Green Path Environmental Inc**	Contract:	**Nanuet UFSD**	**Metro Lab ID #:**	**B22030467**
Address:	79 Glover Street	Client Job #:			
	Staten Island NY 10308	Location:	**103 Church Street**		
	P: (347) 276-2339 F: (631) 991-9143		**Nanuet HS**	Sample Received:	03/12/2022
			Nanuet **New York** **10954**	PLM Analysis Date:	03/13/2022
Contact:	**Alex Rubin**	Sampled By:	A.R.	TEM Analysis Date:	03/13/2022
	M:	Sampled Date:	03/12/2022	Reported By:	Janet Herminia-Santos
	E:	Turnaround Time:	24 hrs	Report Date:	03/13/2022

Summary of Analysis

LAB ID #	Client Sample #	Sample Description	Test	Fibrous Material	Non-Fibrous Material	Asbestos	Total Asbestos
21	21	Beige Homogenous NOB 2ND FL. - SCIENCE WING - COVE BASE OVER GLUE - BEIGE	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4			**Inconclusive** **None Detected** **None Detected**	
22	22	Brown Homogenous NOB 2ND FL. - SCIENCE WING - COVE BASE - BROWN	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4			**Inconclusive** **None Detected** **None Detected**	
23	23	Brown Homogenous NOB 2ND FL. - SCIENCE WING - COVE BASE - BROWN	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4			**Inconclusive** **None Detected** **None Detected**	
24	24	White Homogenous Granular 2ND FL. - SCIENCE WING - JOINT COMPOUND - WHITE	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4		100% Non-Fibrous	**None Detected**	
25	25	White Homogenous Granular 2ND FL. - SCIENCE WING - JOINT COMPOUND - WHITE	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4		100% Non-Fibrous	**None Detected**	
26	26	Grey Homogenous NOB 2ND FL. - SCIENCE WING - WALLBOARD - L. BROWN	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4			**Inconclusive** **None Detected** **None Detected**	
27	27	Grey Homogenous NOB 2ND FL. - SCIENCE WING - WALLBOARD - L. BROWN	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4			**Inconclusive** **None Detected** **None Detected**	
28	28	Black Homogenous Granular 2ND FL. - SCIENCE WING - TABLE TOP MATERIAL - BLACK	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4		100% Non-Fibrous	**None Detected**	
29	29	Black Homogenous Granular 2ND FL. SCIENCE WING - TABLE TOP MATERIAL - BLACK	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4		100% Non-Fibrous	**None Detected**	
30	30	Black Homogenous NOB 2ND FL. - SCIENCE WING - CAULKING TO TABLE TOP - BLACK	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4			**Inconclusive** **None Detected** **None Detected**	

Comments

Equipment: PLM SCOPE Nikon Optiphot-2
TEM SCOPE #2 - Hitachi H-7000

Zlatan Dimitrijevic
Laboratory Director

Reda Abdelmalak
PLM Analyst

Atef Guirguis
TEM Analyst

NYS ELAP ID # 12003

NVLAP Lab Code 500081-0

METRO ANALYTICAL LABORATORIES
255 West 36th St., Suite #101
New York, NY 10018
p: (212) 695-0165 f: (212) 695-0183

ASBESTOS ANALYSIS of BULK SAMPLE by POLARIZED LIGHT MICROSCOPY and TRANSMISSION ELECTRON MICROSCOPY

Client:	**Green Path Environmental Inc**	Contract:	**Nanuet UFSD**	**Metro Lab ID #:**	**B22030467**
Address:	79 Glover Street	Client Job #:			
	Staten Island NY 10308	Location:	**103 Church Street**		
	P: (347) 276-2339 F: (631) 991-9143		**Nanuet HS**	Sample Received:	03/12/2022
			Nanuet **New York** **10954**	PLM Analysis Date:	03/13/2022
Contact:	**Alex Rubin**	Sampled By:	A.R.	TEM Analysis Date:	03/13/2022
	M:	Sampled Date:	03/12/2022	Reported By:	Janet Herminia-Santos
	E:	Turnaround Time:	24 hrs	Report Date:	03/13/2022

Summary of Analysis

LAB ID #	Client Sample #	Sample Description	Test	Fibrous Material	Non-Fibrous Material	Asbestos	Total Asbestos
31	31	Black Homogenous NOB 2ND FL. - SCIENCE WING - CAULKING TO TABLE TOP - BLACK	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4			**Inconclusive** **None Detected** **None Detected**	
32	32	Black Homogenous Granular 2ND FL. - SCIENCE WING - GROUT TO TABLE TOP MATERIAL - BLACK	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4		100% Non-Fibrous	**None Detected**	
33	33	Black Homogenous Granular 2ND FL. - SCIENCE WING - GROUT TO TABLE TOP MATERIAL - BLACK	NY ELAP 198.1 NY ELAP 198.6 NY ELAP 198.4		100% Non-Fibrous	**None Detected**	

Comments

Equipment: PLM SCOPE Nikon Optiphot-2
TEM SCOPE #2 - Hitachi H-7000

Zlatan Dimitrijevic
Laboratory Director

Reda Abdelmalak
PLM Analyst

Atef Guirguis
TEM Analyst

NYS ELAP ID # 12003

NVLAP Lab Code 500081-0

METRO ANALYTICAL LABORATORIES
255 West 36th St., Suite #101
New York, NY 10018
p: (212) 695-0165 f: (212) 695-0183

Report Notes

General Notes and Disclaimers

- The samples analyzed in this report were not collected by this laboratory - they were received from the client, or an agent of the client, in good condition, unless otherwise noted.
- All results are calculated based on client-provided samples and / or measurements and fall within the acceptable Quality Control limits, unless otherwise noted.
- The report shall not be reproduced, except in full, without the written approval of the laboratory.
- This report relates only to the samples tested. It may not be used by the client to claim project endorsement by NVLAP, NYS ELAP, or any other government agency.
- All samples will be properly disposed of after 60 days.
- Quality Control data (including 95% confidence limits, laboratory / analysis accuracy and precision) is available upon request.

Notes Regarding Asbestos Testing

- Air Sample Analysis by Phase Contrast Microscopy (PCM) adheres to Method NIOSH-7400. Results < 7 fibers / mm^2 are statistically insignificant.
- Percentages are calculated using the EPA equivalent Stratified Point-Count Method.
- Bulk Sample Analysis by Polarized Light Microscopy (PLM) Friable adheres to EPA/600/M4-082-20 or NYS ELAP 198.1.
- Bulk Sample Analysis by Polarized Light Microscopy (PLM) NOB adheres to NYS ELAP 198.6. This method does not remove vermiculite and may underestimate the level of asbestos present in a sample containing greater than 10% vermiculite.
- All inhomogeneous layers of the bulk samples were analyzed separately.
- Analytical results are sometimes based on the residue percentage(s) provided by the client along with the filters. Trace denotes asbestos detected at < 1%. Smiliarly, samples below quantitation limit (RL) are reported with a less than sign (<).
- Polarized Light Microscopy is not consistently reliable in detecting asbestos in floor coverings and similar non-friable organically bound materials. Quantitative TEM is currently the only method that can be used to determine if this material can be considered or treated as non-asbestos containing.
- Bulk Sample Analysis by Transmission Electron Microscopy (TEM) NOB adheres to NYS ELAP Method 198.4.
- Air Sample Analysis by Transmission Electron Microscopy (TEM) adheres to Method EPA CFR Part 763 Final Rule (AHERA).
- Air Sample Analysis by Transmission Electron Microscopy (TEM) Worksheets are available upon request.

B2203467

Green Path
Environmental, Inc

BULK SAMPLE DATA AND CHAIN OF CUSTODY FORM

79 Glover Street, Suite 1, Staten Island, NY 10308
T. (347) 276-2339 • F. (646) 774-0354

Please e-mail results to: info@gpe.nyc and office@gpe.nyc

Client name: Nanuet UFSD	**LAB ID No.:**	**Date:** 3/12/22 **Time:** 10:30 - 15:00
Project address: 103 Church St, Nanuet, NY 10954 - Nanuet HS	**Green Path Project #** 1937.07.01 **PO #:**	**Inspector/investigator name:** Alexander Rubin
Sampling Areas: Various	**Analysis Requested:** TAT ☐ Rush ☐ 12 Hr ☒ 24 Hr ☐ 48 Hr ☐ 72 Hr ☐ Other	**Comments:** Stop at first positive in the each homogeneous group

H.A.	SAMPLE ID	SAMPLE LOCATION	SAMPLE DESCRIPTION	COLOR	Q/TY SQ FT	Q/TY LN. FT	MATERIAL CONDITION
1	1	2ND FL - Science Wing	- Above Ceiling - Pipe Insulation	Silver/Beige		424	Good
	2						
	3						
2	4		- 2x4 Ceiling Tile (Type I)	White/Yellow	8,200		
	5						
3	6		- 2x4 Fissured Ceiling Tile (Type II)	Beige/Gray	2,400		
	7						
4	8		- 2x4 Flat Ceiling Tile (Type III)	White/Gray	1,200		
	9						
5	10		- Wall - Cmu Mortar	Gray	8,000		
	11						
6	12		- Floor - Mastic to all 9x9 VAT	Black	6,800		
	13						
7	14		- 12x12 Floor Tile	Blue	1,700		
	15						

☒ PLM ☒ NOB PLM ☒ NOB TEM [ ] TEM DUST WIPE - ASTM D6480-05 [ ] OTHER Specify:

Client Manager: Scott Graber - 917-623-2411

Chain Of Custody

Relinquished by: (Full Name & Signature)	Date & Time	Method of Submittal	Received by: (Full Name & Signature)	Date & Time
1. A. Rubin			Kristina John	3/12/22 3:15P

Lab Information

Analyzed by: (Full Name)	Signature	Date	Analyzed by: (Full Name)	Signature	Date
1.			2.		

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B2203046 7

Green Path
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BULK SAMPLE DATA AND CHAIN OF CUSTODY FORM

79 Glover Street, Suite 1, Staten Island, NY 10308
T. (347) 276-2339 • F. (646) 774-0354

Please e-mail results to: info@gpe.nyc and office@gpe.nyc

Client name: Nanuet UFSD	**LAB ID No.:**	**Date:** 3/12/22 **Time:** 10:30 - 15:00
Project address: 103 Church St, Nanuet, NY 10954 - Nanuet HS	**Green Path Project #** 1937.07.01 **PO #:**	**Inspector/investigator name:** Alexander Rubin
Sampling Areas: Various	**Analysis Requested:** TAT ☐ Rush ☐ 12 Hr ☒ 24 Hr ☐ 48 Hr ☐ 72 Hr ☐ Other	**Comments:** Stop at first positive in the each homogeneous group

H.A.	SAMPLE ID	SAMPLE LOCATION	SAMPLE DESCRIPTION	COLOR	Q/TY SQ FT	Q/TY LN. FT	MATERIAL CONDITION
8	16	2nd FL - Science Wing	- Floor - 12x12 Floor Tile	Gray	5,100		Good
	17						
9	18		- Wall - Cove Base old Glue	Brown	360		
	19						
10	20		- Cove Base new Glue	Beige			
	21						
11	22		- Cove Base	Brown			
	23						
12	24		- Joint Compound	white	600		
	25						
13	26		- Wall Board	L. Brown			
	27						
14	28		- Table Top material	Black	1,200		
	29						
15	30		- Caulking to Table Top	Black	40		
	31						

☒ PLM ☒ NOB PLM ☒ NOB TEM [ ] TEM DUST WIPE - ASTM D6480-05 [ ] OTHER Specify:

Client Manager: Scott Graber - 917-623-2411

Chain Of Custody

Relinquished by: (Full Name & Signature)	Date & Time	Method of Submittal	Received by: (Full Name & Signature)	Date & Time
1. A. Rubin			Krishna John	3/12/22 315P

Lab Information

Analyzed by: (Full Name)	Signature	Date	Analyzed by: (Full Name)	Signature	Date
1.			2.		

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B2203046?

Green Path
Environmental, Inc

BULK SAMPLE DATA AND CHAIN OF CUSTODY FORM

79 Glover Street, Suite 1, Staten Island, NY 10308
T. (347) 276-2339 • F. (646) 774-0354

Please e-mail results to: info@gpe.nyc and office@gpe.nyc

Client name: Nanuet UFSD	**LAB ID No.:**	**Date:** 3/12/22 **Time:** 10:30 – 15:00
Project address: 103 Church St, Nanuet, NY 10954 - Nanuet HS	**Green Path Project #** 1937.07.01 **PO #:**	**Inspector/investigator name:** Alexander Rubin
Sampling Areas: Various	**Analysis Requested:** TAT ☐ Rush ☐ 12 Hr ☒ 24 Hr ☐ 48 Hr ☐ 72 Hr ☐ Other	**Comments:** Stop at first positive in the each homogeneous group

H.A.	SAMPLE ID	SAMPLE LOCATION	SAMPLE DESCRIPTION	COLOR	Q/TY SQ FT	Q/TY LN. FT	MATERIAL CONDITION
16	32	2ND FL - SCIENCE WING	GROUT TO TABLE TOP MATERIAL	BLACK	60		GOOD
	33	↓	↓		↓		↓
~~17~~	~~34~~						

☒ PLM ☒ NOB PLM ☒ NOB TEM [ ] TEM DUST WIPE - ASTM D6480-05 [ ] OTHER Specify:

Client Manager: Scott Graber - 917-623-2411

Chain Of Custody

Relinquished by: (Full Name & Signature)	Date & Time	Method of Submittal	Received by: (Full Name & Signature)	Date & Time
1. A. Rubin			Kristina John	3/12/22 3:15P

Lab Information

Analyzed by: (Full Name)	Signature	Date	Analyzed by: (Full Name)	Signature	Date
1.			2.		

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GPE License and Certification

New York State – Department of Labor
Division of Safety and Health
License and Certificate Unit
State Campus, Building 12
Albany, NY 12240

ASBESTOS HANDLING LICENSE

Green Path Environmental, Inc.
Suite 1
79 Glover Street

Staten Island, NY 10308

FILE NUMBER: 13-72113
LICENSE NUMBER: 72113
LICENSE CLASS: RESTRICTED
DATE OF ISSUE: 06/18/2021
EXPIRATION DATE: 06/30/2022

Duly Authorized Representative – Julia Rubin:

This license has been issued in accordance with applicable provisions of Article 30 of the Labor Law of New York State and of the New York State Codes, Rules and Regulations (12 NYCRR Part 56). It is subject to suspension or revocation for a (1) serious violation of state, federal or local laws with regard to the conduct of an asbestos project, or (2) demonstrated lack of responsibility in the conduct of any job involving asbestos or asbestos material.

This license is valid only for the contractor named above and this license or a photocopy must be prominently displayed at the asbestos project worksite. This license verifies that all persons employed by the licensee on an asbestos project in New York State have been issued an Asbestos Certificate, appropriate for the type of work they perform, by the New York State Department of Labor.

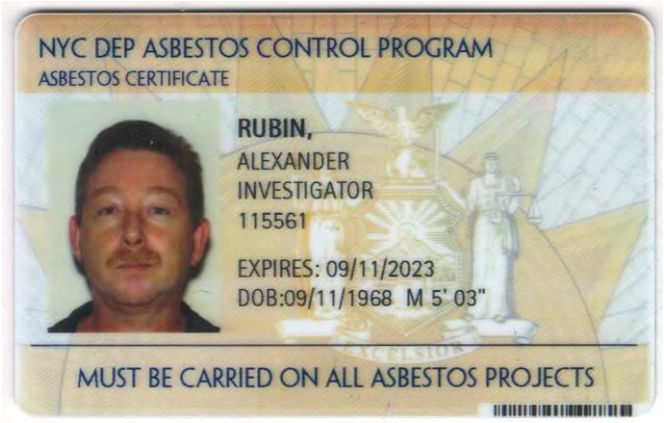
Amy Phillips, Director
For the Commissioner of Labor

SH 432 (8/12)

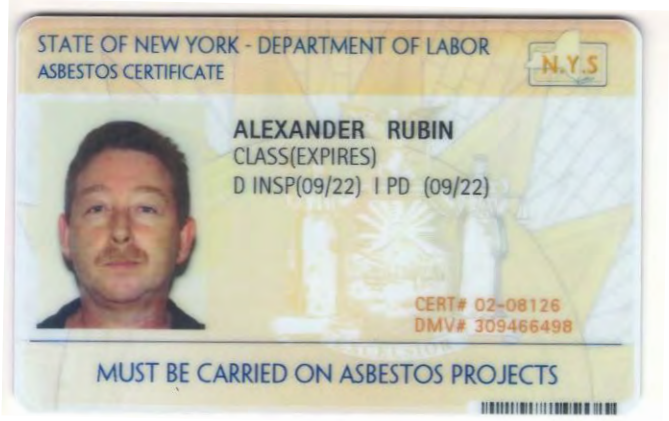
Green Path
Environmental, Inc

Alexander Rubin

NYC DEP Certified Asbestos Investigator



NYS DOL Certified Asbestos Inspector



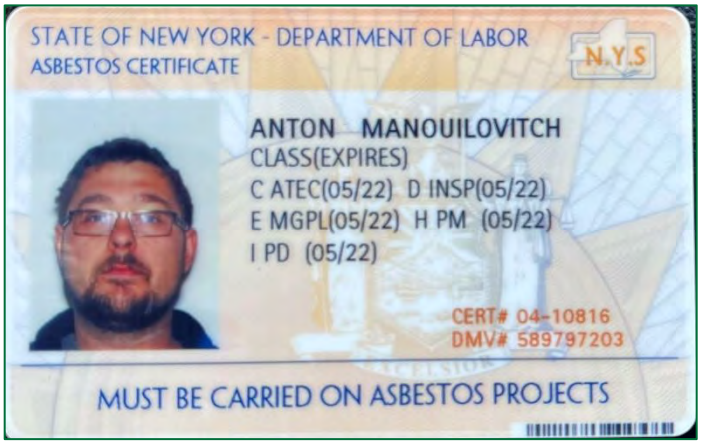
Green Path
Environmental, Inc

ANTON MANOUILOVITCH

NYC DEP Certified Asbestos Investigator



NYS DOL Certified Asbestos Inspector/Project Design Management Planner
Project Monitor/Air Sampling Technician



Laboratory Certification

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2022
Issued April 01, 2021

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. ZLATAN DIMITRIJEVIC
METRO ANALYTICAL LABORATORIES, LLC.
255 WEST 36TH STREET SUITE 101
NEW YORK, NY 10018-0022

NY Lab Id No: 12003

is hereby APPROVED as an Environmental Laboratory for the category
ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE
All approved subcategories and/or analytes are listed below:

Miscellaneous

Asbestos in Friable Material	Item 198.1 of Manual
	EPA 600/M4/82/020
Asbestos in Non-Friable Material-PLM	Item 198.6 of Manual (NOB by PLM)
Asbestos in Non-Friable Material-TEM	Item 198.4 of Manual
Lead in Dust Wipes	EPA 7000B
Lead in Paint	EPA 7000B

Sample Preparation Methods

EPA 3050B

NEW YORK STATE OF OPPORTUNITY. Department of Health

Serial No.: 63263

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2022
Issued April 01, 2021

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. ZLATAN DIMITRIJEVIC
METRO ANALYTICAL LABORATORIES, LLC.
255 WEST 36TH STREET SUITE 101
NEW YORK, NY 10018-0022

NY Lab Id No: 12003

is hereby APPROVED as an Environmental Laboratory for the category
ENVIRONMENTAL ANALYSES AIR AND EMISSIONS
All approved subcategories and/or analytes are listed below:

Metals I	
Lead, Total	NIOSH 7082
Miscellaneous	
Asbestos	40 CFR 763 APX A No. III
Fibers	NIOSH 7400 A RULES

NEW YORK STATE OF OPPORTUNITY | Department of Health

Serial No.: 63264

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Green Path Environmental, Inc

NEW YORK STATE OF OPPORTUNITY. NYC Small Business Services
Certified Women-Owned Business Enterprise

March 24, 2022

To: Mr. Rudy Villanyi
Nanuet Public Schools
103 Church Street
Nanuet, New York 10954

Re: **Limited Asbestos (Vermiculite Analysis) and PCB Survey**
Nanuet High School – Phase 2 and Elevator Addition
103 Church Street, Nanuet, New York
GPE Project #: 1937.07.01

Dear Mr. Villanyi:

Green Path Environmental, Inc (GPE) was retained by the Nanuet Public Schools to conduct a limited asbestos and PCB survey at the Nanuet High School regarding the Phase 2 and elevator addition project renovation in reference to the KSQ Design Architects drawings dated January 31, 2022. The survey conducted on March 5 & 12, 2022 included visual observation, material sampling and laboratory sample analysis of the suspect asbestos containing materials and poly-chlorinated biphenyls (PCB) materials.

The east wing interior foyer ceiling plaster, interior storefront wall plaster and east wing roof bottom layer beige screed laboratory results were inconclusive using standard asbestos analytical methods 198.1, 198.6 and 198.4 so laboratory analysis went to Vermiculite analytical method 198.8 for further verification. The PCB caulking materials - exterior store front [security vestibule] window black caulking, east wing interior foyer window frame black caulking, 2nd floor science wing table top seams black caulking) were not identified as asbestos containing materials (less than one percent asbestos) using standard asbestos analytical methods and laboratory analysis went to PCB analytical EPA Method SW846 8082 for further analysis.

Based on the attached bulk sample laboratory analytical results (see attached laboratory analytical results with chain of custody forms), the Boys Restroom C124 upper wall white plaster, Kindergarten Restrooms C132 & C133 upper ceiling white plaster (outside of restrooms) were not identified as asbestos containing materials (less than one percent asbestos) using Vermiculite method 198.8.

Analysis of the bulk samples collected was performed by Alpha Labs and New York Environmental and Analytical Labs (NYE).

Alpha Labs is accredited by the New York State Department of Health, Environmental Laboratory Accreditation Program (ELAP Accreditation No. 11833) for Asbestos Bulk Sample Vermiculite Analysis by 198.8 and NYE (ELAP Accreditation No. 11510) for PCB Bulk Sample Analysis by EPA Method 7000B.

Based upon the visual inspection of suspect materials and bulk sample laboratory analytical results (see attached laboratory analytical results with chain of custody forms), the suspect materials are not identified as PCB materials (less than 50 parts per million [ppm]). The three (3) PCB sample results are non-detect at the reporting limits to 8.15 ppm.

GPE collected one caulk sample from each type of caulk at the building to be impacted by the proposed scope of work. The samples were submitted for analysis to NYE. The PCB analysis was performed using Gas Chromatography EPA Method SW846 8082.

NYE is accredited by the New York State Department of Health, Environmental Laboratory Accreditation Program (ELAP Accreditation No. 11510) for EPA Method SW846 8082.

If you have any questions, please do not hesitate to call me at (917)-623-2411.

Sincerely,
Green Path Environmental, Inc



Scott Graber
Client Manager

Attachments:
- Laboratory Analytical Results with Chain of Custody Forms (report dated March 18 and 23, 2022)
- GPE License and Certification
- Laboratory Certifications

Laboratory Analytical Results with Chain of Custody Forms (Reports dated March 18 and 23, 2022)

NEW YORK ENVIRONMENTAL

88 Harbor Road
Port Washington, NY 11050
(516) 944-9500

Laboratory Report for PCBs in Solid Waste

Report No.:2221440-21164

Customer: Green Path Environmental, Inc.
79 Glover Street
Suite 1
Staten Island, NY 10308

Analytical results pertain only to the samples tested in the condition received by the laboratory. This report must not be reproduced except in its entirety, unless with express written permission from the laboratory.

Project: Nanuet UFSD - Nanuet HS; 103 Church Street Nanuet, NY

Lab Sample ID: 220315K006 **Collected:** 3/14/2022
Client ID: P1 **Received:** 3/15/2022 9:53
Description: Exterior Store Front Window (Security Vestibule), Black Caulking

Parameter	Method	Analysis Date	LOQ	Result	Units	Flag(s)
PCB 1016	EPA 8082A	03/18/22	0.424	<0.424	mg/kg	
PCB 1221	EPA 8082A	03/18/22	0.424	<0.424	mg/kg	
PCB 1232	EPA 8082A	03/18/22	0.424	<0.424	mg/kg	
PCB 1242	EPA 8082A	03/18/22	0.424	<0.424	mg/kg	
PCB 1248	EPA 8082A	03/18/22	0.424	<0.424	mg/kg	
PCB 1254	EPA 8082A	03/18/22	0.424	4.30	mg/kg	
PCB 1260	EPA 8082A	03/18/22	0.424	3.85	mg/kg	
Extraction	EPA 3550C	03/16/22	Complete			

Lab Sample ID: 220315K007 **Collected:** 3/14/2022
Client ID: P2 **Received:** 3/15/2022 9:53
Description: Interior East Wing Foyer Window Frame (Elevator Project); Black Caulking

Parameter	Method	Analysis Date	LOQ	Result	Units	Flag(s)
PCB 1016	EPA 8082A	03/18/22	0.525	<0.525	mg/kg	
PCB 1221	EPA 8082A	03/18/22	0.525	<0.525	mg/kg	
PCB 1232	EPA 8082A	03/18/22	0.525	<0.525	mg/kg	
PCB 1242	EPA 8082A	03/18/22	0.525	<0.525	mg/kg	
PCB 1248	EPA 8082A	03/18/22	0.525	<0.525	mg/kg	
PCB 1254	EPA 8082A	03/18/22	0.525	<0.525	mg/kg	
PCB 1260	EPA 8082A	03/18/22	0.525	<0.525	mg/kg	
Extraction	EPA 3550C	03/16/22	Complete			

Lab Sample ID: 220315K008 **Collected:** 3/14/2022
Client ID: P3 **Received:** 3/15/2022 9:53
Description: 2nd Floor Science Wing - Table Top Seams; Black Caulking

Parameter	Method	Analysis Date	LOQ	Result	Units	Flag(s)
PCB 1016	EPA 8082A	03/18/22	0.433	<0.433	mg/kg	
PCB 1221	EPA 8082A	03/18/22	0.433	<0.433	mg/kg	
PCB 1232	EPA 8082A	03/18/22	0.433	<0.433	mg/kg	
PCB 1242	EPA 8082A	03/18/22	0.433	<0.433	mg/kg	
PCB 1248	EPA 8082A	03/18/22	0.433	<0.433	mg/kg	
PCB 1254	EPA 8082A	03/18/22	0.433	<0.433	mg/kg	
PCB 1260	EPA 8082A	03/18/22	0.433	<0.433	mg/kg	
Extraction	EPA 3550C	03/16/22	Complete			

Approved: _____
Li Tsang, Laboratory Director

NYSDOH ELAP Lab ID 11510

NEW YORK ENVIRONMENTAL

88 Harbor Road
Port Washington, NY 11050
(516) 944-9500

Laboratory Report for PCBs in Solid Waste

Report No.:2221440-21164

Comment(s):

LOQ: Limit of Quantitation PCB: Polychlorinated biphenyl

High-level Limit of Quantitation (LOQ) of prep method EPA 3550C is 20 mg/kg; any PCB quantities reported less than 20 mg/kg are estimated.

Samples analyzed on a wet-weight, "as-received" basis.

NYSDOH ELAP Lab ID 11510

Approved: _____
Li Tsang, Laboratory Director

NEW YORK ENVIRONMENTAL
88 HARBOR ROAD
PORT WASHINGTON, NY 11050
(516) 944-9500

220315K006 - 008

69450

Chain of Custody - Chemistry

Client: Green Path Environmental, Inc.	Client Proj. ID: 1937.07.01	Date: 03.14.22	Notes: **Results to info@gpe.nyc and office@gpe.nyc** **PCB analysis - 5 day TAT**
Project: Nanuet UFSD - Nanuet HS	Address: 103 Church Street, Nanuet, NY 10954		
Inspector: Alexander Rubin Signed:			
Turnaround Time: **5 days TAT**			

Sample ID. .	Location and/or Sample Description	Time of Collection	Material Sampled	Analysis	# and Type of Container	Preservative (if any)
P1	Exterior Store Front Window (Security Vestibule)	N/A	Black Caulking	PCB		
P2	Interior East Wing Foyer Window Frame (Elevator Project)	N/A	↓	↓		
P3	2nd Floor Science Wing - Table Top Seams	N/A	↓	↓		

2221440
C21164

Relinquished: S. Emmel Signature: A. Rubin Date: _____ Time: _____

Received: S. Emmel Signature: S. Emmel Date: 3/15/22 Time: 9:53am

Lab Use Only:

NYEA Project No.	Temp. °C	Analyst Initials AL	Analysis Date: 03/18/22

alpha Labs
14-26 28th Avenue Long Island City, NY 11102
Tel.: (718) 482-7525 Fax: (718) 482-7524 www.alphalabsllc.com

BULK SAMPLE PLM ANALYSIS REPORT FOR ASBESTOS IN SURFACING MATERIAL CONTAINING VERMICULITE (SM-V)

CLIENT: Metro Analytical Laboratories, 255 West 36th St., Suite 101, New York, NY 10018
BUILDING ADDRESS: Metro Lab# B22030205

Client Sample ID# Lab Sample ID#	Sample Description	Sample Location	Appearance	GRAVIMETRIC PREPARATION				MISCROSCOPY RESULTS				
				% Ashed Organic + Water Component	% Floats Component	% Residue	% Centrifugate	% Non-Asbestos Fibrous Material	% Non-Fibrous Matrix Material (including Vermiculite)	Chrysotile Percentage	Amphibole Percentage	Total Asbestos Percentage
27 22-03-095-01	Bottom layer - screed	East Wing Roof	Beige Homogeneous Friable	13.47%	0.22%	21.57%	10.96%	0%	1% VERM 99% OTHER	NAD	0.0340% AMPH	**0.0340%**
28 22-03-095-02			Beige Homogeneous Friable	14.03%	0.17%	22.67%	12.75%	0%	1% VERM 99% OTHER	NAD	0.0397% AMPH	**0.0397%**
45 22-03-095-03	Ceiling Plaster – Bottom layer	Exterior – east Wing Foyer	Beige Homogeneous Friable	13.18%	0.18%	33.56%	22.47%	0%	4% VERM 96% OTHER	NAD	0.1321% AMPH	**0.1321%**
46 22-03-095-04			Dark Brown Homogeneous Friable	14.88%	0.26%	36.52%	19.93%	0%	5% VERM 95% OTHER	NAD	0.1665% AMPH	**0.1665%**
47 22-03-095-05			Brown Homogeneous Friable	13.85%	0.76%	31.19%	21.75%	0%	4% VERM 96% OTHER	NAD	0.1919% AMPH	**0.1919%**
74 22-03-095-06	Wall Plaster – Bottom layer	Interior – store front	Gray Homogeneous Friable	14.42%	0.20%	21.08%	19.55%	0%	3% VERM 97% OTHER	NAD	0.1502% AMPH	**0.1502%**
75 22-03-095-07			Gray Homogeneous Friable	14.26%	0.24%	21.19%	15.58%	0%	2% VERM 98% OTHER	NAD	0.1424% AMPH	**0.1424%**
76 22-03-095-08			Gray Homogeneous Friable	14.44%	0.19%	21.61%	16.78%	0%	3% VERM 97% OTHER	NAD	0.1992% AMPH	**0.1992%**

alpha Labs
14-26 28th Avenue Long Island City, NY 11102
Tel.: (718) 482-7525 Fax: (718) 482-7524 www.alphalabsllc.com

BULK SAMPLE PLM ANALYSIS REPORT FOR ASBESTOS IN SURFACING MATERIAL CONTAINING VERMICULITE (SM-V)

CLIENT: Metro Analytical Laboratories, 255 West 36th St., Suite 101, New York, NY 10018
BUILDING ADDRESS: Metro Lab# B22030205

Date Received: 3/18/22
Date of Stereo-binocular Analysis: 3/18/22
Date of PLM Analysis (for Chrysotile): 3/22/22
Date of PLM Analysis (for Amphiboles): 3/23/22
Date of Report: 3/23/22

Final report 22-03-095 includes an attachment of 16 lab bench sheets

Analyst: D. Molohides

QC Review / Date: 3/23/2022
D. Molohides, Lab Director

NAD= No Asbestos Detected; NA/PS = Not Analyzed / Positive Stop; Trace = < 1%, CH = Chrysotile, AMO = Amosite, CRO = Crocidolite, ANTH = Anthophyllite, TRE = Tremolite, ACT = Actinolite, AMPH = amphiboles asbestos, FBGL = Fiberglass, CELL = Cellulose, VERM=Vermiculite. Samples are analyzed by Polarized Light Microscopy (PLM) by ELAP Analysis Protocol 198.8 (surfacing material containing vermiculite bulk samples). Analytical equipment: Stereobinocular microscopes: Professional Bin (PM #1), Accuscope (Ser#:120405), Carlsan (Ser#: 011418), Olympus VMZ (Ser#: 983350); Polarized Light Microscopes: Olympus BH-2 (Ser #: 214335), Olympus BH-2 (Ser #: 236532), Olympus BH-2 (Ser#: 227128), Meiji ML 9000 (Ser#: 902028). Samples will be stored for ninety (90) days and then returned to the client upon request. The results relate only to the items calibrated or tested. This report may not be reproduced, except in full, without the written approval of Alpha Labs LLC. The report must not be used by the client to claim endorsement by NVLAP, NIST or any agency of the US Government. The liability of Alpha Labs LLC with respect to the services charged shall in no event exceed the amount of the invoice. Copies of the lab's bench-sheets are attached as part of this final report. **(May 1, 2019)**

NYS-DOH ELAP # 11833

METRO
ANALYTICAL LABORATORIES
255 West 36th St., Suite 101
New York, NY 10018
p: (212) 695-0165 f: (212) 695-0183

CHAIN of CUSTODY BULK SAMPLES

22-03-095

Metro Lab # B22030205

Client: METRO

Client Job #:

Project: Nanuet HS

Location:

Contact: Moe Soliman

P: (347)819-6446 F:

Method: ☐ PLM - Friables ☐ PLM - NOB ☐ TEM - NOB
☐ NYS ELAP 198.1 ☐ NYS ELAP 198.6 ☐ NYS ELAP 198.4
☐ EPA 600/M4/82/020 ☐ EPA 600/R-96/116 ☐ EPA /600/R-96/116B

Special Instructions:

Turnaround Time
☐ Rush ☐ 3 Hours
☐ 6 Hours ☐ 12 Hours
☐ 24 Hours ☒ 48 Hours
☐ 72 Hours ☐ 3-5 Days

Sample #	Location	Material Description	Results: PLM Friable	PLM NOB	TEM NOB	Other
27	East wing roof	Bottom layer - screed				
28	East wing roof	Bottom layer - screed				
45	Exterior - East wing foyer	Ceiling Plaster - Bottom layer				
46	Exterior - East wing foyer	Ceiling Plaster - Bottom layer				
47	Exterior - East wing foyer	Ceiling Plaster - Bottom layer				
74	Interior - Store front	Wall Plaster - Bottom layer				
75	Interior - Store front	Wall Plaster - Bottom layer				
76	Interior - Store front	Wall Plaster - Bottom layer				

Sampled: Name / Signature / Date & Time

Received: C. Mejean (Name) 03/18/2022 (Date & Time)

Released: Name / Signature / Date & Time

Analyzed: Name / Date & Time

GPE License and Certification

New York State – Department of Labor
Division of Safety and Health
License and Certificate Unit
State Campus, Building 12
Albany, NY 12240

ASBESTOS HANDLING LICENSE

Green Path Environmental, Inc.
Suite 1
79 Glover Street

Staten Island, NY 10308

FILE NUMBER: 13-72113
LICENSE NUMBER: 72113
LICENSE CLASS: RESTRICTED
DATE OF ISSUE: 06/18/2021
EXPIRATION DATE: 06/30/2022

Duly Authorized Representative – Julia Rubin:

This license has been issued in accordance with applicable provisions of Article 30 of the Labor Law of New York State and of the New York State Codes, Rules and Regulations (12 NYCRR Part 56). It is subject to suspension or revocation for a (1) serious violation of state, federal or local laws with regard to the conduct of an asbestos project, or (2) demonstrated lack of responsibility in the conduct of any job involving asbestos or asbestos material.

This license is valid only for the contractor named above and this license or a photocopy must be prominently displayed at the asbestos project worksite. This license verifies that all persons employed by the licensee on an asbestos project in New York State have been issued an Asbestos Certificate, appropriate for the type of work they perform, by the New York State Department of Labor.

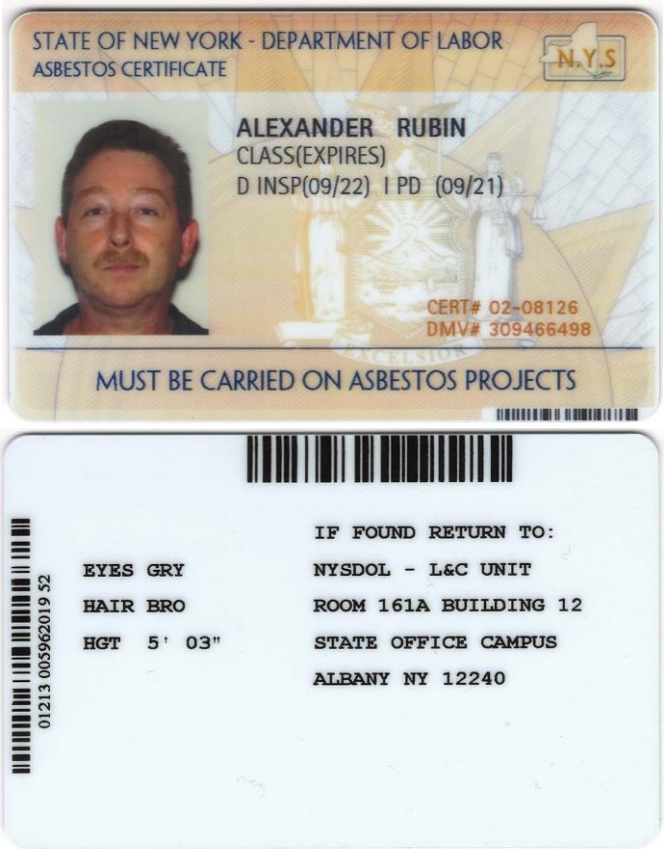
Amy Phillips, Director
For the Commissioner of Labor

SH 432 (8/12)

Green Path
Environmental, Inc

Alexander Rubin

NYS DOL Certified Asbestos Inspector/Project Design



Laboratory Certifications

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2022
Issued April 01, 2021

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. LI TSANG
NY ENVIRONMENTAL AND ANALYTICAL LABS INC
88 HARBOR ROAD
PORT WASHINGTON, NY 11050

NY Lab Id No: 11510

is hereby APPROVED as an Environmental Laboratory in conformance with the National Environmental Laboratory Accreditation Conference Standards (2016) for the category ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE
All approved analytes are listed below:

Characteristic Testing	
TCLP	EPA 1311
Polychlorinated Biphenyls	
Aroclor 1016 (PCB-1016)	EPA 8082A
Aroclor 1221 (PCB-1221)	EPA 8082A
Aroclor 1232 (PCB-1232)	EPA 8082A
Aroclor 1242 (PCB-1242)	EPA 8082A
Aroclor 1248 (PCB-1248)	EPA 8082A
Aroclor 1254 (PCB-1254)	EPA 8082A
Aroclor 1260 (PCB-1260)	EPA 8082A
Sample Preparation Methods	
	EPA 3550C

NEW YORK STATE OF OPPORTUNITY | Department of Health

Serial No.: 63015

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2022
Issued April 01, 2021

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. DIMITRIOS MOLOHIDES
ALPHA LABS LLC
14-26 28TH AVENUE
LONG ISLAND CITY, NY 11102

NY Lab Id No: 11833

is hereby APPROVED as an Environmental Laboratory for the category
ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE
All approved subcategories and/or analytes are listed below:

Miscellaneous

Asbestos in Friable Material	Item 198.1 of Manual
	EPA 600/M4/82/020
Asbestos in Non-Friable Material-PLM	Item 198.6 of Manual (NOB by PLM)
Asbestos in Non-Friable Material-TEM	Item 198.4 of Manual
Asbestos-Vermiculite-Containing Material	Item 198.8 of Manual
Lead in Dust Wipes	EPA 7000B
Lead in Paint	EPA 7000B
	ASTM D3335-85A

Sample Preparation Methods

	EPA 3051A
	ASTM D3335-85A
	ASTM E-1644-17

NEW YORK STATE OF OPPORTUNITY Department of Health

Serial No.: 63179

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Green Path Environmental, Inc

NEW YORK STATE OF OPPORTUNITY. NYC Small Business Services
Certified Women-Owned Business Enterprise

March 14, 2022

To: Mr. Rudy Villanyi
Nanuet Public Schools
103 Church Street
Nanuet, New York 10954

Re: **Expedited Lead-Based Paint Survey**
Nanuet High School – Phase 2 and Elevator Addition
103 Church Street, Nanuet, New York
GPE Project #: 1937.07.01

Dear Mr. Villanyi:

Green Path Environmental, Inc (GPE) was retained by the Nanuet Public Schools to conduct an expedited limited lead-based paint survey at the Nanuet High School regarding the Phase 2 and elevator addition project renovation in reference to the KSQ Design Architects drawings dated January 31, 2022. The survey conducted on March 6 and 12, 2022 included visual observation, material sampling and laboratory sample analysis of the suspect lead-based paint (LBP).

Based on the attached bulk sample laboratory analytical results (<0.03 to 0.04 percent [%] lead paint by weight), the exterior store front frame brown paint, east wing interior foyer radiator grey paint, east wing foyer wall beige paint, 2nd floor science wing wall CMU white paint/wall green-yellow paint/door frame yellow paint/wall wallboard green paint/door frame green paint samples collected were not identified as lead-based paint.

The samples were analyzed using atomic absorption spectrometry (AAS) and were prepared and analyzed in accordance with the EPA Method (SW 846 Prep = EPA 3050B. Analysis = EPA 7000B).

Analysis of the bulk samples collected was performed by Metro Analytical Labs (Metro) located at 255 West 36th Street, Suite 101, New York, NY 10018.

Metro is accredited by the New York State Department of Health, Environmental Laboratory Accreditation Program (ELAP Accreditation No. 12003) for Bulk Sample Analysis by EPA Method 7000B.

The U.S. Department of Housing and Urban Development (HUD) has established a definition of lead-based paint as paint or other surface coatings that contain lead equal to or greater than 0.5% by weight.

If you have any questions, please do not hesitate to call me at (917)-623-2411.

Sincerely,
Green Path Environmental, Inc



Scott Graber
Client Manager

Attachments:

- Laboratory Analytical Results with Chain of Custody Form (reports dated March 7 and 14, 2022)
- GPE License and Certification
- Laboratory Certification

Laboratory Analytical Results with Chain of Custody Forms (Reports dated March 7 and 13, 2022)

METRO ANALYTICAL LABORATORIES
255 West 36th St., Suite #101
New York, NY 10018
p: (212) 695-0165 f: (212) 695-0183

ANALYSIS of LEAD PAINT CHIP SAMPLES

Client: **Green Path Environmental Inc**
Address: 79 Glover Street
Staten Island NY 10308
P: (347) 276-2339 F: (631) 991-9143

Contact: **Alex Rubin**
M:
E:

Contract: **Nanuet UFSD**
Client Job #: **1937.07.01**
Location: **103 Church Street - Nanuet High School**
Nanuet **NY**
Sampled By: A.R.
Sampled Date: 03/06/2022
Turnaround Time: 24 hrs

Metro Lab ID #: **L22030059**
Sample Received: 03/06/2022
Lead Analysis Date: 03/08/2022
Reported By: Sharye Bethancourt
Report Date: 03/08/2022

Summary of Analysis

LAB ID #	Client Sample #	Sample Description	Area (cm^2)	Lead Reading (µg Pb / ml)	Lead Concentration (mg/cm^2)	Lead Concentration % wt
1	L1	EXTERIOR STORE FRONT FRAME - BROWN - METAL		0.05		< 0.03%
2	L2	INTERIOR EAST WING FOYER RADIATOR - GRAY - METAL		0.60		< 0.03%
3	L3	INTERIOR EAST WING FOYER - WALL - BEIGE - CMU		0.28		< 0.03%

Comments

Equipment: Flame Atomic Absorption Spectrometer #1 - Perkin Elmer AAnalyst 400
Hotblock - Perkin Elmer SPB 50

**Prep = EPA 3050B. Analysis = EPA 7000B. Reporting Limit (RL) - 0.03% by weight (based upon 100 mg sample) or 0.01 mg/cm^2 (based upon area).

Zlatan Dimitrijevic
Laboratory Director

Sharye M Bethancourt Z Smirnov

Sharye Bethancourt / Zoya Smirnov
Lead Analyst

NYS ELAP ID # 12003

AIHA-PAT, LLC # 220677

METRO ANALYTICAL LABORATORIES
255 West 36th St., Suite #101
New York, NY 10018
p: (212) 695-0165 f: (212) 695-0183

Report Notes

General Notes and Disclaimers

- The samples analyzed in this report were not collected by this laboratory - they were received from the client, or an agent of the client, in good condition, unless otherwise noted.
- All results are calculated based on client-provided samples and / or measurements and fall within the acceptable Quality Control limits and the reported data included in this document has not been corrected based on blank values.
- This report shall not be reproduced, except in full, without the written approval of the laboratory.
- This report relates only to the samples tested. It may not be used by the client to claim project endorsement by NVLAP, NYS ELAP, or any other government agency.
- Quality Control data (including 95% confidence limits, laboratory / analysis accuracy and precision) is available upon request.

Lead Exposure Limits

Matrix	Concentration	Details
Air	0.15 µg/m^3	EPA National Ambient Air Quality Standard (Quality Time - Weight Average)
	30 µg/m^3	OSHA action level (8-hour time-weighted average)
	50 µg/m^3	OSHA permissible exposure limit (General Industry)
Dust	5 µg/ft²	NYC DOHMH Clearance Level for Floors (includes carpeted and uncarpeted interior floors)
	40 µg/ft²	NYC DOHMH Clearance Level for Interior Window Sills
	100 µg/ft²	NYC DOHMH Clearance Level for Window Wells / Window Troughs
	N/A	NYC DOHMH Clearance Level for Porch Floors
Paint	1.0 mg/cm^2	EPA Clearance Level of Lead Based Paint
	5000 µg/g (5,000 ppm, 0.5% by weight)	
Soil	400 µg/g	EPA Bare Residential Soil Hazard Levels (play areas used by young children)

L22030059

Green Path
Environmental, Inc

79 Glover Street, Suite 1, Staten Island, NY 10308
T. (347) 276-2339 • F. (646) 774-0354
Please e-mail results to: info@gpe.nyc and office@gpe.nyc

LEAD-SAFE EPA CERTIFIED FIRM
NAT-F113768-1

LEAD PAINT BULK CHAIN OF CUSTODY

PROJECT NUMBER #: 1937.07.01 CLIENT NAME: Nanuet UFSD

PROJECT ADDRESS: 103 Church Street , Nanuet, NY - Nanuet HS

SAMPLE BY: Alexander Rubin CERT #: LBP-R-I149001-2_Exp 01.15.2024

DATE/TIME SAMPLED: 3/6/22 9:30AM INITIAL TEST: X RE-TEST: ___ PLEASE PROVIDE RESULTS: X Email □ Fax

INSTRUCTION/NOTES: 8:30PM

TURNAROUND TIME(TAT)	□ Same Day	X 24 Hours	□ 48 Hours	□ 3 Days	□ 4 Days
	□ Standard (5 Days)	□ Full TCLP (10day)			

SAMPLE NUMBER	Sample Identification/Location	Color	Substrate Component	Condition	Area (Sq ft)
L1	Exterior Store Front Frame	Brown	Metal	POOR	
L2	Interior Existing Foyer Radiator	Gray	Metal	FAIR	
L3	↓ -W411	Beige	CMU	Good	

Matrix Types
□Bulk □ Paint
□ Soil
□Dust
□ Other

Metals Analysis Types
□Total Concentration of Lead
□Total Concentration of RCRA 8 Metals
□TCLP for Lead
□TCLP for RCRA 8 Metals

EPA as paint with lead levels:
Greater than or equal to 1.0 mg/cm², or more than 0.5% by weight

Relinquished By: Alexander Rubin Date: ___ Time: ___
Received By: Janet Date: 3/6/22 Time: 8:44PM
Analyzed By: ___ Date: ___ Time: ___

METRO ANALYTICAL LABORATORIES
255 West 36th St., Suite #101
New York, NY 10018
p: (212) 695-0165 f: (212) 695-0183

ANALYSIS of LEAD PAINT CHIP SAMPLES

Client:	**Green Path Environmental Inc**	Contract:	**Nanuet UFSD**	**Metro Lab ID #:**	**L22030119**
Address:	79 Glover Street	Client Job #:	**1937.07.01**		
	Staten Island NY 10308	Location:	**103 Church Street - Nanuet High School**		
	P: (347) 276-2339 F: (631) 991-9143		**2nd Floor - Science Wing**	Sample Received:	03/12/2022
			Nanuet NY	Lead Analysis Date:	03/14/2022
Contact:	**Alex Rubin**	Sampled By:	A.R.		
	M:	Sampled Date:	03/12/2022	Reported By:	Sharye Bethancourt
	E:	Turnaround Time:	24 hrs	Report Date:	03/14/2022

Summary of Analysis

LAB ID #	Client Sample #	Sample Description	Area (cm^2)	Lead Reading (µg Pb / ml)	Lead Concentration (mg/cm^2)	Lead Concentration % wt
1	L1	2ND FL. SCIENCE WING - WALL - WHITE - CMU		0.11		< 0.03%
2	L2	2ND FL. SCIENCE WING - WALL - GREEN / YELLOW - CMU		0.05		< 0.03%
3	L3	2ND FL. SCIENCE WING - DOOR GRAME - YELLOW - METAL		0.81		0.04%
4	L5	2ND FL. SCIENCE WING - WALL - GREEN - WALLBOARD		0.04		< 0.03%
5	L6	2ND FL. SCIENCE WING - DOOR GRAME - GREEN - METAL		0.03		< 0.03%

Comments

Equipment: Flame Atomic Absorption Spectrometer #1 - Perkin Elmer AAnalyst 400
Hotblock - Perkin Elmer SPB 50

**Prep = EPA 3050B. Analysis = EPA 7000B. Reporting Limit (RL) - 0.03% by weight (based upon 100 mg sample) or 0.01 mg/cm^2 (based upon area).

Zlatan Dimitrijevic
Laboratory Director

Sharye M Bethancourt
Lead Analyst

NYS ELAP ID # 12003

AIHA-PAT, LLC # 220677

METRO ANALYTICAL LABORATORIES
255 West 36th St., Suite #101
New York, NY 10018
p: (212) 695-0165 f: (212) 695-0183

Report Notes

General Notes and Disclaimers

- The samples analyzed in this report were not collected by this laboratory - they were received from the client, or an agent of the client, in good condition, unless otherwise noted.
- All results are calculated based on client-provided samples and / or measurements and fall within the acceptable Quality Control limits and the reported data included in this document has not been corrected based on blank values.
- This report shall not be reproduced, except in full, without the written approval of the laboratory.
- This report relates only to the samples tested. It may not be used by the client to claim project endorsement by NVLAP, NYS ELAP, or any other government agency.
- Quality Control data (including 95% confidence limits, laboratory / analysis accuracy and precision) is available upon request.

Lead Exposure Limits

Matrix	Concentration	Details
Air	0.15 µg/m^3	EPA National Ambient Air Quality Standard (Quality Time - Weight Average)
	30 µg/m^3	OSHA action level (8-hour time-weighted average)
	50 µg/m^3	OSHA permissible exposure limit (General Industry)
Dust	5 µg/ft²	NYC DOHMH Clearance Level for Floors (includes carpeted and uncarpeted interior floors)
	40 µg/ft²	NYC DOHMH Clearance Level for Interior Window Sills
	100 µg/ft²	NYC DOHMH Clearance Level for Window Wells / Window Troughs
	N/A	NYC DOHMH Clearance Level for Porch Floors
Paint	1.0 mg/cm^2	EPA Clearance Level of Lead Based Paint
	5000 µg/g (5,000 ppm, 0.5% by weight)	
Soil	400 µg/g	EPA Bare Residential Soil Hazard Levels (play areas used by young children)

L22030119

Green Path
Environmental, Inc

79 Glover Street, Suite 1, Staten Island, NY 10308
T. (347) 276-2339 • F. (646) 774-0354
Email: info@gpe.nyc

NAT-F113768-1

LEAD CHAIN OF CUSTODY

PROJECT NUMBER #: 1937.07.01 CLIENT NAME: Nanuet UFSD

PROJECT ADDRESS: 103 Church St, Nanuet, NY – Nanuet HS

SAMPLE BY: Alexander Rubin CERT #: LBP-R-I149001-2_Exp 01.15.2024

DATE/TIME SAMPLED: 3/12/22 10:30 – 14:30 INITIAL TEST: X RE-TEST: ___ PLEASE PROVIDE RESULTS: X Email ☐ Fax

INSTRUCTION/NOTES:

TURNAROUND TIME(TAT)	☐ Same Day	X 24 Hours	☐ 48 Hours	☐ 3 Days	☐ 4 Days
	☐ Standard (5 Days)	☐ Full TCLP (10day)			

SAMPLE NUMBER	Sample Identification/Location	Color	Substrate Component	Condition	Area (Sq ft)
L1	2nd FL – SCIENCE WING – WALL	White	CMU	Good	
L2		Green/Yellow	CMU	Good	
L3	– DOOR FRAME	Yellow	Metal	FAIR	
L4		Gray	metal	FAIR	
L5	– wall	Green	WALLBOARD	Good	
L6	– DOOR FRAME	Green	metal	Good	

Matrix Types
X Bulk – Paint
☐ Soil
☐ Dust
☐ Other

Metals Analysis Types
X Total Concentration of Lead
☐ Total Concentration of RCRA 8 Metals
☐ TCLP for Lead
☐ TCLP for RCRA 8 Metals

EPA as paint with lead levels:
Greater than or equal to 1.0 mg/cm², or more than 0.5% by weight

Relinquished By: Alexander Rubin Date: 3/12/22 Time: ___

Received By: K. John Date: 3/12/22 Time: 315P

Analyzed By: ___ Date: ___ Time: ___

L22030119

Green Path
Environmental, Inc

79 Glover Street, Suite 1, Staten Island, NY 10308
T. (347) 276-2339 • F. (646) 774-0354
Email: info@gpe.nyc

LEAD CHAIN OF CUSTODY

PROJECT NUMBER #: 1937.07.01 CLIENT NAME: Nanuet UFSD

PROJECT ADDRESS: 103 Church St, Nanuet, NY - Nanuet HS

SAMPLE BY: Alexander Rubin CERT #: LBP-R-I149001-2_Exp 01.15.2024

DATE/TIME SAMPLED: 3/12/22 10:30 - 14:30 INITIAL TEST: X RE-TEST: ___ PLEASE PROVIDE RESULTS: X Email ☐ Fax

INSTRUCTION/NOTES:

TURNAROUND TIME(TAT)	Same Day	X 24 Hours	48 Hours	3 Days	4 Days
	Standard (5 Days)	Full TCLP (1day)			

SAMPLE NUMBER	Sample Identification/Location	Color	Substrate Component	Condition	Area (Sq ft)
L1	2nd Fl - SCIENCE WING - WALL	White	CMU	Good	
L2		Green/Yellow	CMU	Good	
L3	- DOOR FRAME	Yellow	Metal	FAIR	
~~L4~~	~~-~~	~~Gray~~	~~metal~~	~~FAIR~~	Void
L5	- WALL	Green	WALLBOARD	Good	
L6	- DOOR FRAME	Green	metal	Good	

Matrix Types
X Bulk / Paint
☐ Soil
☐ Dust
☐ Other

Metals Analysis Types
X Total Concentration of Lead
☐ Total Concentration of RCRA 8 Metals
☐ TCLP for Lead
☐ TCLP for RCRA 8 Metals

EPA as paint with lead levels:
Greater than or equal to 1.0 mg/cm², or more than 0.5% by weight

Relinquished By: Alexander Rubin Date: 3/12/22 Time: ___

Received By: K. John Date: 3/12/22 Time: 315P

Analyzed By: ___ Date: ___ Time: ___

GPE License and Certification

United States Environmental Protection Agency

This is to certify that

Green Path Environmental, Inc

has fulfilled the requirements of the Toxic Substances Control Act (TSCA) Section 402, and has received certification to conduct lead-based paint activities pursuant to 40 CFR Part 745.226

In the Jurisdiction of:

All EPA Administered Lead-based Paint Activities Program States, Tribes and Territories

This certification is valid from the date of issuance and expires June 20, 2022

LBP-F113768-2

Certification #

December 13, 2018

Issued On

Michelle Price, Chief

Lead, Heavy Metals, and Inorganics Branch

United States Environmental Protection Agency

This is to certify that



Alexander Rubin

has fulfilled the requirements of the Toxic Substances Control Act (TSCA) Section 402, and has received certification to conduct lead-based paint activities pursuant to 40 CFR Part 745.226 as:

Risk Assessor

In the Jurisdiction of:

All EPA Administered Lead-based Paint Activities Program States, Tribes and Territories

This certification is valid from the date of issuance and expires January 15, 2024

LBP-R-I149001-2

Certification #

November 30, 2020

Issued On

Ben Conetta, Chief

Chemicals and Multimedia Programs Branch

Laboratory Certification

NEW YORK STATE DEPARTMENT OF HEALTH
WADSWORTH CENTER

Expires 12:01 AM April 01, 2022
Issued April 01, 2021

CERTIFICATE OF APPROVAL FOR LABORATORY SERVICE

Issued in accordance with and pursuant to section 502 Public Health Law of New York State

MR. ZLATAN DIMITRIJEVIC
METRO ANALYTICAL LABORATORIES, LLC.
255 WEST 36TH STREET SUITE 101
NEW YORK, NY 10018-0022

NY Lab Id No: 12003

is hereby APPROVED as an Environmental Laboratory for the category
ENVIRONMENTAL ANALYSES SOLID AND HAZARDOUS WASTE
All approved subcategories and/or analytes are listed below:

Miscellaneous

Asbestos in Friable Material	Item 198.1 of Manual
	EPA 600/M4/82/020
Asbestos in Non-Friable Material-PLM	Item 198.6 of Manual (NOB by PLM)
Asbestos in Non-Friable Material-TEM	Item 198.4 of Manual
Lead in Dust Wipes	EPA 7000B
Lead in Paint	EPA 7000B

Sample Preparation Methods

EPA 3050B

NEW YORK STATE OF OPPORTUNITY. Department of Health

Serial No.: 63263

Property of the New York State Department of Health. Certificates are valid only at the address shown, must be conspicuously posted, and are printed on secure paper. Continued accreditation depends on successful ongoing participation in the Program. Consumers are urged to call (518) 485-5570 to verify the laboratory's accreditation status.

NEW YORK STATE DEPARTMENT OF HEALTH
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is hereby APPROVED as an Environmental Laboratory for the category
ENVIRONMENTAL ANALYSES AIR AND EMISSIONS
All approved subcategories and/or analytes are listed below:

Metals I	
Lead, Total	NIOSH 7082
Miscellaneous	
Asbestos	40 CFR 763 APX A No. III
Fibers	NIOSH 7400 A RULES

NEW YORK STATE OF OPPORTUNITY | Department of Health

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SECTION 03 30 01 – CAST-IN-PLACE CONCRETE

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes:

1. Concrete formwork, reinforcing steel, and cast-in-place concrete, for concrete foundation walls and footings.

1.2 SUBMITTALS

A. Product Data: Manufacturer's name, specifications, and installation instructions, for each item specified.

B. Steel Reinforcement Shop Drawings: Details of fabrication, bending, and placement, prepared according to ACI 315, "Details and Detailing of Concrete Reinforcement." Include material, grade, bar schedules, stirrup spacing, bent bar diagrams, arrangement, and supports of concrete reinforcement. Include special reinforcement required for openings through concrete structures.

C. Construction Joint Layout: Indicate proposed construction joints required to construct the structure.

D. Location of construction joints is subject to approval of the Engineer.

E. Design Mixes: For each concrete mix. Include alternate mix designs when characteristics of materials, project conditions, weather, test results, or other circumstances warrant adjustments.

1. Indicate amounts of mix water to be withheld for later addition at Project site.

F. Material Certificates: Signed by manufacturers certifying that each of the following items complies with requirements:

1. Cementitious materials and aggregates.
2. Admixtures.
3. Curing materials.

4. Bonding agents.
5. Adhesives.
6. Repair materials.

1.3 REFERENCES

A. Comply with ACI 301-89 for all Work of this Section, unless otherwise indicated on the Contract Drawings or herein specified.

B. New York State Department of Transportation Standard Specifications for Construction and Materials, Latest Edition.

1.4 QUALITY ASSURANCE

A. Installer Qualifications: An experienced installer who has completed concrete Work similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.

B. Manufacturer Qualifications: A firm experienced in manufacturing ready-mixed concrete products complying with ASTM C 94 requirements for production facilities and equipment.

1. Testing Agency Qualifications: An independent agency, acceptable to authorities having jurisdiction, qualified according to ASTM C 1077 and ASTM E 329 for testing indicated.
2. 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.
3. Personnel performing laboratory tests shall be ACI-certified Concrete Strength Testing Technician and Concrete Laboratory Testing Technician, Grade I. Testing agency laboratory supervisor shall be an ACI-certified Concrete Laboratory Testing Technician, Grade II.

C. Source Limitations: Obtain each type or class of cementitious material of the same brand from the same manufacturer's plant, each aggregate from one source, and each admixture from the same manufacturer.

1.5 FIELD CONDITIONS

A. Cold-Weather Placement: Comply with ACI 306.1 and as follows. Protect concrete work from physical damage or reduced strength that could be caused by frost, freezing actions, or low temperatures.

1. When average high and low temperature is expected to fall below 40 deg F for three successive days, maintain delivered concrete mixture temperature within the temperature range required by ACI 301.
2. Do not use frozen materials or materials containing ice or snow. Do not place concrete on frozen subgrade or on subgrade containing frozen materials.
3. Do not use calcium chloride, salt, or other materials containing antifreeze agents or chemical accelerators unless otherwise specified and approved in mixture designs.

B. Hot-Weather Placement: Comply with ACI 301 and as follows:

1. 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 to total amount of mixing water. Using liquid nitrogen to cool concrete is Contractor's option.
2. Fog-spray forms, steel reinforcement, and subgrade just before placing concrete. Keep subgrade uniformly moist without standing water, soft spots, or dry areas.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Prefabricated metal-framed plywood matched, tight fitting, stiffened to support weight of concrete.

B. Reinforcing Steel: ASTM A615, Grade60; deformed billet steel bars.

1. Joint Dowel Bars: ASTM A 615, Grade 60 plain-steel bars. Cut bars true to length with ends square and free of burrs.

C. Chairs, Bolsters, Bar Supports, and Spacers: Sized and shaped for support of reinforcing.

D. Cast-In-Place Concrete: Normal weight, air entrained concrete with a minimum compressive strength of 4,000 PSI at the end of 28 days.

1. Design Air Content: ASTM C-260, and on the NYSDOT's current "Approved List"; 6% by volume, 1.5% +/-. Entrained air shall be provided by use of an approved air-entraining admixture.
2. Cement: ASTM C-150 Type I or II Portland cement.
3. Normal-Weight Aggregates: ASTM C 33, uniformly graded. Provide aggregates from a single source.
   a. Maximum Coarse-Aggregate Size: 3/4 inches nominal.
   b. Fine Aggregate: Free of materials with deleterious reactivity to alkali in cement
4. Water: Potable.
5. Slump: Between 2 and 4 inches; except when a water-reducing admixture is used maximum slump shall be 6 inches and when a high range water reducing admixture is used maximum slump shall be 8 inches.
6. Water-reducing Admixture: ASTM C-494 Type A and on the NYSDOT's current "Approved List".
7. High Range Water-reducing Admixture: ASTM C-494 Type F and on the NYSDOT's current "Approved List".

E. Concrete Sealer:

1. Surebond/Safebond SB-7000 clear concrete sealer or equivalent for sidewalks.
2. Non-water based penetrating type protective sealer which is on the NYSDOT Material List for concrete pavement.

F. Concrete Hardener and Dustproofer: Magnesium-flurosilicate concrete hardener and dustproofer that bonds chemically with the concrete.

1. Lapidolith by Sonneborn Building Products, Chemrex, Inc., 889 Valley Park Dr., Shakopee, MN 55379, (800) 433-9517, or approved equivalent.

G. Fabric Reinforcement: 6 inch x 6 inch – W2.9 x W2.9, ASTM A-185, welded wire fabric, fabricated into flat sheets.

H. Closed Cell Polyethylene Foam Joint Filler: For use around penetrations. Flexible, chemical resistant, non-bleeding, non-staining, “strip-off” edge, by A.H. Harris & Sons, Inc. or approved equivalent.

I. Fiber Expansion Joint Filler: Resilient, flexible, non-extruding joint compound composed of cellular fibers securely bonded together and uniformly saturated with asphalt, by A.H. Harris & Sons, Inc. or approved equivalent.

J. Bedding: NYSDOT Subbase Course Type 2. See Section 312000 – “Excavation and Fill.”

K. Chamfer Strips: Wood, metal, PVC or rubber; one inch chamfer, unless stated otherwise in Construction Documents.

L. Epoxy Bonding Agent (Adhesive): 100 percent solids epoxy-resin-base bonding compound, complying with ASTM C 881, Types I, II, IV and V, Grade 2 (horizontal areas) or Grade 3 (overhead/vertical areas), and Class B (40-60 degrees Fahrenheit) or Class C (60 degree Fahrenheit and above).

1. SurePoxy HM Series by Kaufman Products, Inc., 3811 Curtis Avenue, Baltimore, MD 21226, (800) 637-6372.
2. Sikadur Hi-Mod 32 by Sika Corporation, 201 Polito Avenue, Lyndhurst, NJ 07071, (800) 933-7452.
3. Epogrip by Sonneborn/ BASF Building Systems, 889 Valley Park Drive, Shakopee, MN 55379, (800) 433-9517.
4. Approved Equal.

2.2 PRODUCTION (Amendments to ACI 301, Chapter 7):

A. Provide ready-mixed concrete, either central-mixed or truck-mixed.

PART 3 - EXECUTION

3.1 FORMWORK INSTALLATION

A. Design, construct, erect, brace, and maintain formwork according to ACI 301.

3.2 EMBEDDED ITEM INSTALLATION

A. Place and secure anchorage devices and other embedded items required for adjoining work that is attached to or supported by cast-in-place concrete. Use setting drawings, templates, diagrams, instructions, and directions furnished with items to be embedded.

3.3 STEEL REINFORCEMENT INSTALLATION

A. Comply with CRSI's "Manual of Standard Practice" for fabricating, placing, and supporting reinforcement.

3.4 JOINTS

A. General: Construct joints true to line with faces perpendicular to surface plane of concrete.

B. Construction Joints: Install so strength and appearance of concrete are not impaired, at locations indicated or as approved by Engineer.

3.5 CONCRETE PLACEMENT

A. Comply with ACI 301 for placing concrete.

B. Before test sampling and placing concrete, water may be added at Project site, subject to limitations of ACI 301.

C. Consolidate concrete with mechanical vibrating equipment according to ACI 301.

3.6 FINISHING FORMED SURFACES

A. Rough-Formed Finish: As-cast concrete texture imparted by form-facing material with tie holes and defects repaired and patched. Remove fins and other projections exceeding 1/2 inch.

   1. Apply to concrete surfaces not exposed to public view.

B. Smooth-Formed Finish: As-cast concrete texture imparted by form-facing material, arranged in an orderly and symmetrical manner with a minimum of seams. Repair and patch tie holes and defective areas. Remove fins and other projections exceeding 1/8 inch.

   1. Apply to concrete surfaces exposed to public view, to receive a rubbed finish.

C. Rubbed Finish: Apply the following rubbed finish, defined in ACI 301, to smooth-formed-finished as-cast concrete where indicated:

1. Smooth-rubbed finish.
2. Grout-cleaned finish.
3. Cork-floated finish.

D. Related Unformed Surfaces: At tops of walls, horizontal offsets, and similar unformed surfaces adjacent to formed surfaces, strike off smooth and finish with a texture matching adjacent formed surfaces. Continue final surface treatment of formed surfaces uniformly across adjacent unformed surfaces unless otherwise indicated.

3.7 FINISHING UNFORMED SURFACES

A. General: Comply with ACI 302.1R for screening, restraightening, and finishing operations for concrete surfaces. Do not wet concrete surfaces.

3.8 CONCRETE PROTECTING AND CURING

A. General: Protect freshly placed concrete from premature drying and excessive cold or hot temperatures. Comply with ACI 306.1 for cold-weather protection and with ACI 301 for hot-weather protection during curing.

B. 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.

C. Begin curing after finishing concrete but not before free water has disappeared from concrete surface.

D. Curing Methods: Cure formed and unformed concrete for at least seven days by one or a combination of the following methods:

1. Moisture Curing: Keep surfaces continuously moist for not less than seven days with the following materials:
   a. Water.
   b. Continuous water-fog spray.
   c. Absorptive cover, water saturated, and kept continuously wet. Cover concrete surfaces and edges with 12-inch lap over adjacent absorptive covers.

2. Moisture-Retaining-Cover Curing: Cover concrete surfaces with moisture-retaining cover for curing concrete, placed in widest practicable width, with sides and ends lapped at least 12 inches and sealed by waterproof tape or adhesive. Cure for not less than seven days. Immediately repair any holes or tears during curing period, using cover material and waterproof tape.
3. Curing Compound: Apply uniformly in continuous operation by power spray or roller according to manufacturer's written instructions. Recoat areas subjected to heavy rainfall within three

hours after initial application. Maintain continuity of coating and repair damage during curing period.

3.9 FIELD QUALITY CONTROL

A. Testing Agency: Owner will engage a qualified testing agency to perform tests and inspections.

B. Inspections:

1. Steel reinforcement placement in accordance with ACI 318 Sections 3.5 and 7.1-7.7.
2. Verification of use of required design mixture.
3. Concrete placement, including conveying and depositing in accordance with ACI 318 Sections 5.9 and 5.10
4. Curing procedures and maintenance of curing temperature.
5. Verification of concrete strength before removal of shores and forms in accordance with ASTM C39.

C. Concrete Tests: Testing of composite samples of fresh concrete obtained according to ASTM C 172 shall be performed according to the following requirements:

1. Testing Frequency: Obtain one composite sample for each day's pour of each concrete mixture exceeding 5 cu. yd., but less than 25 cu. yd., plus one set for each additional 50 cu. yd. or fraction thereof.
   a. When frequency of testing provides 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; 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, pressure method, for normal-weight concrete; 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; one test hourly when air temperature is 40 deg F and below or 80 deg F and above, and one test for each composite sample.
5. Compression Test Specimens: ASTM C 31.
   a. Cast and laboratory cure cylinder specimens for each composite sample.

6. Compressive-Strength Tests: ASTM C 39; at a minimum test one set of two laboratory-cured specimens at 7 days and one set of two specimens at 28 days.
   a. Test one set of two field-cured specimens at 7 days and one set of two specimens at 28 days.
   b. A compressive-strength test shall be the average compressive strength from a set of two specimens obtained from same composite sample and tested at age indicated.

7. Strength of each concrete mixture will be satisfactory if every 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.

8. Test results shall be reported in writing to Owner and Engineer, 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.
9. Nondestructive Testing: Impact hammer, sonoscope, or other nondestructive device may be permitted by Engineer but will not be used as sole basis for approval or rejection of concrete.
10. 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 Engineer. The cost for the additional testing shall be borne by the Contractor. Testing and inspecting agency may conduct tests to determine adequacy of concrete by cored cylinders complying with ASTM C 42 or by other methods as directed by Engineer.
11. Additional testing and inspecting, at Contractor's expense, will be performed to determine compliance of replaced or additional work with specified requirements.
12. Correct deficiencies in the Work that test reports and inspections indicate do not comply with the Contract Documents.

D.
END OF SECTION

SECTION 03 54 00 - SELF-LEVELING TOPPINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of Contract, including General and Supplementary Conditions and Division 1 General Requirments, apply to this Section.

1.2 SUMMARY

A. This Section includes floor patching / leveling over existing substrates to provide a smooth floor surface on interior surfaces only.

1.3 REFERENCES

A. ASTM C 109M, Compressive Strength Air-Cure Only

B. ASTM C348, Flexural Strength of Hydraulic-Cement Mortars

C. ASTM E84, Surface Burning Characteristics of Building Materials

D. ASTM F2170, Relative Humidity in Concrete Floor Slabs Using in situ Probes

E. ASTM F1869, Moisture Vapor Emission Rate of Concrete Subfloor Using Anhydrous Calcium Chloride

F. ASTM 710 - Standard Practice for Preparing Concrete Floors to Receive Resilient Flooring

1.4 SUBMITTALS

A. Furnish product data, samples, laboratory test reports, and materials certificates as specified in Section "Resilient Tile Flooring."

1.5 QUALITY ASSURANCE

A. Perform work in accordance with ACI 301.

B. Maintain copy of manufacturer’s installation instructions on site, with criteria for preparation and application.

PART 2 - PRODUCTS

3.1 MANUFACTURERS

A. Available Manufacturers: Subject to compliance with requirements, manufacturers offering pre-packaged topping mixes that may be incorporated in the Work include, but are not limited to, the following:

1. K-15, Ardex Inc.
2. Mapei Novaplan II .
3. Other products equal to above.

B. Design mix to produce topping material with the following characteristics:

1. Compressive strength: Minimum 4000 psi at 28 days.

C. Absolutely no gypsum based products will be allowed on the project.

3.2 MIXING

A. Site-mix per-packaged materials in accordance with manufacturer's instructions.

B. Mix to a consistency to achieve self-leveling.

C. Do not add water unless otherwise instructed, in writing, in the manufacturer's installation instructions and approved by the Architect.

D. Do not add additional aggregate unless otherwise instructed, in writing, in the manufacturer's installation instructions for extending.

PART 3 - EXECUTION

3.1 CONDITION OF SURFACES

A. Topping Applied to Hardened Concrete: Remove exiting floor finishes as required. Remove dirt, loose material, oil, grease, paint, or other contaminants, leaving a clean surface. Remove high points and projections from concrete.

B. Non-porous subfloors such as ceramic and quarry tile as well as terrazzo should be clean and free of all waxes and sealers.

C. Joints: Mark locations of joints in base slab so that joints in top course will be placed directly over them.

3.2 PLACING AND FINISHING

A. Apply products in accordance with manufacturer's instructions on floor surfaces. Do not proceed with installation until unsatisfactory conditions are corrected. Screed level in accordance with following tolerances:

1. Tolerances: Maximum variation of surface flatness shall not exceed 1/8 inch in 10 feet.

B. Steel trowel any surfaces which are scheduled to receive ceramic tile or to be exposed.

C. Coordinate installation with adjacent work to ensure proper sequence of construction. Protect adjacent areas from contact due to mixing and handling of materials.

3.3 CURING AND PROTECTION

A. Cure and protect topping applications and finishes in accordance with manufacturer's recommendations.

3.4 PERFORMANCE

A. Failure of concrete topping to bond to substrate (as evidenced by a hollow sound when tapped), or disintegration or other failure of topping to perform as a floor finish, will be considered failure of materials and workmanship. Repair or replace toppings in areas of such failures, as directed.

3.5 WASTE MANAGEMENT

A. Coordinate with Section 017423.

1. Separate and recycle cut-offs and waste materials and material packaging in accordance with Waste Management Plan and to the maximum extent economically feasible and place in designated areas for recycling.
2. Set aside and protect materials suitable for reuse and/or remanufacturing.
3. Separate and fold up metal banding; flatten and place along with other metal scrap for recycling in designated area.

END OF SECTION 03 54 00

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SECTION 042000 – UNIT MASONRY

PART 1 GENERAL

1.1 PROJECT CONDITIONS

A. Environmental Requirements:

1. Protect masonry and materials against freezing at temperatures below 40 degrees F.
2. Do not use frozen materials or materials coated with ice or frost.
3. Do not lower freezing point of mortar by use of antifreeze agents or other admixtures. Do not use calcium chloride in mortar.

PART 2 PRODUCTS

2.1 CONCRETE MASONRY UNITS

A. Hollow Load-Bearing Units: ASTM C 90, Type I.

2.2 MORTAR AND MASONRY GROUT

A. Mortar: ASTM C 270, proportion specifications. Types as follows:

1. Type S for concrete masonry units.

B. Grout: ASTM C 476, fine or coarse as most suitable for the particular job conditions.

2.3 ACCESSORIES

A. Masonry Wall Reinforcement: Joint reinforcement factory fabricated from cold-drawn steel wire, truss or ladder design, 9 gage deformed steel wire longitudinal rods welded to 9 gage steel wire cross ties spaced 16 inches on center; width 1-1/2 to 2 inches less than wall thickness. Furnish factory-fabricated corner and tee sections for corners and wall intersections.

1. Finish for Exterior Walls: 1.5 oz per sq ft hot dipped galvanized after fabrication.
2. Finish for Interior Walls: 0.8 oz per sq ft mill galvanized.

B. Bar Reinforcement: ASTM A 615, Grade 60, deformed steel bars.

PART 3 EXECUTION

3.1 PREPARATION

A. Lay out walls and partitions with one course of unit masonry, or other suitable means, to define the spaces, locations of doors and other openings, and to serve as a guide for other trades in the installation of conduits, pipes, etc.

B. Allow other trades sufficient opportunity to install built-in work before proceeding with the walls and partitions. Do not cover pipes, conduit, or ductwork in masonry until directed by the Owner's Representative.

C. Wet brick that absorb 20 drops of water (placed in a one inch circle) in less than 90 seconds.

D. Clean off supporting surface under first course of masonry just prior to laying the masonry units.

E. Protection:

1. Protect face materials against staining.
2. Protect newly laid masonry from exposure to precipitation, excessive drying, freezing, soiling, backfill, and other harmful elements.
3. Cover top of walls with non-staining waterproof covering when Work is not in progress. Place with minimum 2 foot overhang of protective covering on each side of wall and securely anchor.

3.2 INSTALLATION

A. Install masonry units plumb and true to line with level courses accurately spaced.

1. Install masonry units in running bond unless otherwise indicated.
2. Take special care when laying masonry units to be left exposed, or upon which high-build glazed coating, paint, or thin set tile will be applied. Surface plane tolerance for such Work: 1/8 inch in 10 feet in all directions.

B. Adjust units to final position while mortar is soft and plastic. Remove units disturbed after mortar has stiffened; clean units and joints of mortar and re-lay in fresh mortar.

C. Lay only dry concrete masonry units.

D. Where cutting of masonry units is necessary, cut with a power saw. Lay out Work to avoid use of less than half-size units.

E. Lay hollow units with full mortar coverage on horizontal and vertical face shell surfaces. Bed webs in mortar in starting course on footings and foundation walls, in all courses of piers, columns and pilasters, where adjacent to cells or cavities to be reinforced or filled with concrete or mortar, and within 1'-6" of each side of openings.

F. Lay solid units with full mortar coverage on horizontal and vertical joint surfaces.

3.3 JOINTS

A. Construct uniform mortar joints, 3/8 inch thick unless otherwise indicated.

B. Strike joints flush in surfaces to be plastered, stuccoed, or covered with other masonry or other surface applied finish other than smear and high-build glazed coating.

C. Cut joints flush and tool slightly concave on both sides of other walls and partitions, including inner wythe of exterior cavity walls.

3.4 HORIZONTAL JOINT REINFORCEMENT

A. Reinforce horizontal joints with continuous masonry wall reinforcement spaced every 16 inches vertically except as follows:
1. Space 8 inches vertically in parapet walls.
2. Also reinforce horizontal joints immediately above and below openings for a distance of 2’-0” beyond opening in both directions.

C. Lap ends of adjoining strips of reinforcement 6 inches or more.

D. Install factory fabricated corner and tee sections at corners and wall intersections respectively.

3.5 CLEANING

A. Cut off mortar projections remaining from tooling joints and dry-brush masonry before the end of each day’s work.

B. Additional Cleaning for Brickwork:
1. Clean with stiff brushes and water.
2. If staining or soiling persists, reclean with stiff brushes and a solution of trisodium phosphate, detergent, and water (1/2 cup of trisodium phosphate and 1/2 cup of detergent to each gallon of water). Rinse with clean water.

END OF SECTION 042000

SECTION 04 20 00 – UNIT MASONRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. The work performed under this Section includes the performance criteria, materials, production, and erection of unit masonry for the project and consists of the provision of all plant, materials, labor and equipment and the like necessary and/or required for the complete execution of all unit masonry as required by schedules, keynotes and drawings, as specified herein, and as may be required by conditions and authorities having jurisdiction including, but not limited to, the following:

1. Concrete unit masonry.
2. Face brick.
3. Common (building) brick.
4. Mortar and grout.
5. Steel reinforcing bars.
6. Masonry joint reinforcement.
7. Ties and anchors.
8. Embedded flashing.
9. Miscellaneous masonry accessories.

1.3 SUBMITTALS

A. Product data for each different masonry unit, accessory, and other manufactured product indicated.

B. Shop drawings for reinforcing detailing fabrication, bending and placement of unit masonry reinforcing bars. Comply with ACI 315 “Details and Detailing of Concrete Reinforcing” showing bar schedules and arrangement of masonry reinforcement.

C. Samples for verification purposes of the following:

1. Full-size units for each different exposed masonry unit required showing full range of exposed color, texture and dimensions to be expected in complete construction.
   a. Include size variation data verifying that actual ranges of sizes for brick falls within ASTM C 216 dimensions tolerances for brick where dimensioning is indicated.
2. Pigmented and colored-aggregate mortar. Make samples using same sand and mortar ingredients to be used on project.
3. Weep holes and vents.
4. Accessories embedded in the masonry.

D. Material certificates for the following signed by manufacturer and Contractor certifying that each material complies with requirements.

1. Each different cement product required for mortar and grout including name of manufacturer, brand, type and weight slips at time of delivery.
2. Each material and grade indicated for reinforcing bars.
3. Each type and size of joint reinforcement.
4. Each type and size of anchors, ties and metal accessories.

E. Material test reports from a qualified independent testing laboratory employed and paid by Contractor indicating and interpreting test results relative to compliance of the following proposed masonry materials with requirements indicated.

1. Mortar complying with property requirements of ASTM C270.
2. Grout mixes. Include description of type and proportions of grout ingredients.
3. Masonry units.

F. Cold –weather construction procedures evidencing compliance with requirements specified in referenced unit masonry standard.

G. Hot-weather construction procedures evidencing compliance with requirements specified in referenced unit masonry standard.

H. Qualification data firms and persons specified in “Quality Assurance” Article to demonstrate their capabilities and experience. Include list of completed projects with project names, addresses, telephone numbers, names of Architects and Owners and other information specified.

I. Results from tests and inspections performed by Owner’s representatives will be reported promptly and in writing to Architect and Contractor.

1.4 QUALITY ASSURANCE

A. Unit Masonry Standard: Comply with ACI 530.1/ASCE 6 “Specifications for Masonry Structures”, except as otherwise indicated.

1. Revise ACI 530.1/ASCE 6 to exclude Sections 1.4 and 1.7; Parts 2.1.2, 3.1.2 and 4.1.2; and Articles 1.5.1.2, 1.5.1.3, 2.1.1.1, 2.1.1.2 and 2.3.3.9 and to modify Article 2.1.1.4 by deleting requirement for installing vent pipes and conduits built into masonry.

B. Inspecting Laboratory Qualifications: To qualify for employment in performing tests and inspection specified in this Section, an independent testing laboratory must demonstrate to Architects satisfaction, based on evaluation of laboratory-submitted criteria conforming to ASTM C 1093, that it has the experience and capability to conduct satisfactorily the testing indicated without delaying the progress of work.

C. Preconstruction Testing: Owner will employ and pay a qualified independent testing laboratory to perform the following preconstruction testing indicated as well as other inspecting and testing services required by referenced unit masonry standard or indicated herein for source and field quality control:

1. Brick masonry tests: For each different clay masonry unit type indicated, units will be tested per ASTM C67.
2. Concrete Masonry Unit Tests: For each different concrete masonry unit type indicated, units will be tested for strength, absorption and moisture content per ASTM C140.

3. Mortar properties will be tested per property specification of ASTM C270.
4. Grout compressive strength will be tested per ASTM C 1019.

D. Single-Source Responsibility for Masonry Units: Obtain exposed units of uniform texture and color, or a uniform blend within the ranges accepted for these characteristics, from one manufacturer for each different product required for each continuous surface of visually related surfaces.

E. Single-Source Responsibility for Mortar Materials: Obtain mortar ingredients of uniform quality, including color for exposed masonry, from one manufacturer for each cementitious component and from one source and producer for each aggregate.

F. Sample Panels: Build sample panels to verify selections made under sample submittals and to demonstrate aesthetic effects. Comply with requirements in Section 014000 "Quality Requirements" for mockups.

1. Build sample panels for each type of exposed unit masonry construction 48 inches (1200 mm) long by 48 inches (1200 mm) high by full thickness.
2. Where masonry is to match existing, erect panels adjacent and parallel to existing surface.
3. Clean one-half of exposed faces of panels with masonry cleaner indicated.
4. Protect approved sample panels from the elements with weather-resistant membrane.
5. Approval of sample panels is for color, texture, and blending of masonry units; relationship of mortar and sealant colors to masonry unit colors; tooling of joints; aesthetic qualities of workmanship; and other material and construction qualities specifically approved by Architect in writing.

    a. Approval of sample panels does not constitute approval of deviations from the Contract Documents contained in sample panels unless such deviations are specifically approved by Architect in writing.

G. 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 mockup of typical wall area as shown on Drawings.
2. Build mockups for each type of exposed unit masonry construction in sizes approximately 72 inches (1800 mm) long by 72 inches (1800 mm) high by full thickness, including face and backup wythes and accessories.

    a. Include a sealant-filled joint at least 16 inches (400 mm) long in each exterior wall mockup.
    b. Include lower corner of window opening framed with stone trim at upper corner of exterior wall mockup. Make opening approximately 12 inches (300 mm) wide by 16 inches (400 mm) high.
    c. Include through-wall flashing installed for a 24-inch (600-mm) length in corner of exterior wall mockup approximately 16 inches (400 mm) down from top of mockup, with a 12-inch (300-mm) length of flashing left exposed to view (omit masonry above half of flashing).
    d. Include sheathing, sheathing joint-and-penetration treatment, veneer anchors, flashing, cavity drainage material, and weep holes in exterior masonry-veneer wall mockup.
3. Where masonry is to match existing, erect mockups adjacent and parallel to existing surface.

4. Repair one section of limestone facade panel, approximately 1 foot by 1 foot in area, before proceeding with the work.
5. Clean one-half of exposed faces of mockups with masonry cleaner as indicated.
6. Protect accepted mockups from the elements with weather-resistant membrane.
7. Approval of mockups is for color, texture, and blending of masonry units; relationship of mortar and sealant colors to masonry unit colors; tooling of joints; and aesthetic qualities of workmanship.

    a. Approval of mockups is also for other material and construction qualities specifically approved by Architect in writing.
    b. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless such deviations are specifically approved by Architect in writing
8. Approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

H. Pre-Installation Conference: Conduct conference at Project site to comply with requirements in Section 01 31 00 "Project Management and Coordination."

1.5 DELIVERY, STORAGE AND HANDLING

A. Deliver masonry materials to project in undamaged condition.

B. Do not ship any concrete masonry units before receiving written approval of strength tests from the Architect. Products shipped beforehand will be rejected.

C. Store and handle masonry units off ground, under cover and in dry location to prevent their deterioration or damage due to moisture, temperature changes, contaminants, corrosion and other caused, If units become we, do not place until units are in air-dried condition.

D. Store cementitious materials off ground, under cover and in dry locations.

E. Store aggregates where grading and other required characteristics can be maintained and contamination avoided.

F. Store masonry accessories including metal items to prevent corrosion and accumulation of dirt and oil.

1.6 PROJECT CONDITIONS

A. Protection of Masonry: During erection, cover tops of walls, projections and sills with waterproof sheeting at end of each day's work. Cover partially completed masonry when construction is not in progress.

    1. Extend cover a minimum of 24 inches down both sides and hold cover securely in place

B. Do not apply uniform floor or roof loads for at least 12 hours and concentrated loads for at least 3 days after building masonry walls.

C. Stain Prevention: Prevent grout, mortar and soil from staining the face of masonry to be left exposed. Remove immediately any grout, mortar and soil that come in contact with such masonry.

1. Protect base walls from rain-slashed mud and mortar splatter by means of coverings spread on ground and over wall surface.
2. Protect sills, ledgers and projections from mortar droppings.
3. Protect surfaces of window and doorframes. As well as similar products with painted and integral finishes from mortar droppings.

D. Cold-Weather Construction: comply with referenced unit masonry standard for cold-weather construction and the following:

1. Do not lay masonry units that are wet or frozen.
2. Remove masonry damaged by freezing conditions.

E. Hot-Weather Construction: Comply with referenced unit masonry standard.

PART 2 - PRODUCTS

2.1 MATERIALS - GENERAL

A. Comply with references unit masonry standard and other requirements specified in this Section applicable to each material indicated.

B. Fire-Resistance Ratings: Where indicated, provide units that comply with requirements for fire-resistance ratings indicated as determined by testing according to ASTM E 119, by equivalent masonry thickness, or by other means, as acceptable to authorities having jurisdiction.

2.2 CLAY MASONRY UNITS

A. General: Comply with the following requirements applicable to each form of brick required.

1. Provide special extruded shapes where indicated and as follows:

   a. For applications requiring brick of form, color, texture and size on exposed surfaces that cannot be produces by sawing standard brick sizes.
   b. For applications where stretcher units cannot accommodate special conditions including those at corners.
2. Provide units without cores or frogs and with all exposed surfaces finished for ends of headers and similar applications that expose brick surfaces that otherwise would be concealed from view.

B. Face Brick Standard: Match face brick on existing School facade – provide samples to Architect for approval. ASTM C216 and as follows:

1. Grade and Unit Compressive Strength: Provide units of grade and minimum average net area compressive strength indicated below:
   a. Grade SW.
   b. 3000 psi.

2. Type FBX.
3. Size: Provide bricks manufactured to the following actual dimensions within the tolerances specified in ASTM C 216:

   a. Modular: 3-5/8 inches thick by 2-1/4 inches high by 7-5/8 inches long.

4. Shape units during manufacture as indicated below:

   a. Extruded.

5. Application: Use where brick is exposed, unless otherwise indicated.
6. Provide face brick of matching color, texture and size as existing adjacent brickwork.
7. Color and Texture: Match existing.
8. Subjects to compliance with requirements, provide product by one of the following:

   a. Glen-Gery Corporation, Sommerville, NJ.
   b. The Belden Brick, Canton, OH.

C. Building (Common) Brick: ASTM C 62 and as follows:

1. Match face brick on existing adjacent Building – provide samples to Architect for approval.

2. Grade and Unit Compressive Strength: Provide units of grade and minimum average net area compressive strength indicated below:

   a. Grade MW or Grade SW.
   b. 3000 psi.

3. Size: Provide bricks manufactured to the following actual dimensions within the tolerances specified in ASTM C 216:

   a. Match existing

4. Application: Use where brick is indicated for concealed locations.

2.3 CONCRETE MASONRY UNITS

A. Comply with requirements of ASTM C 90, latest edition and as indicated below, applicable to each form of concrete masonry unit required, whether hollow units or solid units.
   1. Size: Provide concrete masonry units complying with requirements indicated below for size that are manufactured to specified dimensions within tolerances as specified in ASTM C 90.
      a. Concrete Masonry Units: Manufactured to specified dimensions of 3/8 inch less than nominal widths by nominal heights indicated on drawings.
   2. Moisture Content: Provide Type I, moisture-controlled units.
   3. Exposed Faces: Manufacturer's standard color and texture, unless otherwise indicated.
   4. Strength: See Table 3, ASTM C 90.
   5. Water Absorption: See Table 3, ASTM C 90.
   6. Weight: See General Notes.

B. Shapes: Provide shapes indicated on Drawings and in this Section.

1. Provide special shapes for corners, jambs, sashes, movement joints, headers, bonding, and other special conditions, as can be reasonably inferred from floor plans and elevations.
2. Provide square-edged units for outside corners, unless otherwise indicated.
3. Provide bull-nose corners for interior locations, unless otherwise noted.
4. Provide special shapes as required to maintain precise patterns of joints.
5. Provide units with two or more finished faces as required to maintain consistent appearance on all exposed surfaces of masonry construction.
6. Provide polished surfaces for cut units.
7. Provide factory formed lipped units for heads at windows and openings formed from solid CMU units. Refer to drawings for profiles required.

C. Absorption: Maximum allowable water absorption shall be 10 pounds per cubic foot, average of five units. Units when delivered to site shall have moisture content not exceeding 8% by weight.

D. Shrinkage: Drying shrinkage shall not exceed 0.25% average for five (5) specimens, when tested according to ASTM C-426.

E. Integral Water Repellent: Provide units made with integral water repellent for exterior exposed units.
   1. Integral Water Repellent: Liquid polymeric, integral water-repellent admixture that does not reduce flexural bond strength. Units made with integral water repellent, when tested as a wall assembly made with mortar containing integral water-repellent manufacturer's mortar additive according to ASTM E 514, with test period extended to 24 hours, show no visible water or leaks on the back of test specimen. Available products include:
      a. Grace Construction Products; Dry-Block.

F. Mortar And Grout Materials

1. Water-Repellent Admixture: Dry Block Liquid water repellent admixture shall be added to the mortar while mixing.

2.4 MORTAR AND GROUT MIXES

A. General: Do not add mixtures including air-entraining agents, accelerators, retarders, water repellent agents, antifreeze compounds or other admixtures unless otherwise indicated.

1. Do not use calcium chloride in mortar or grout.

B. Mortar: Comply with ASTM C 270, Type S.

C. Grout for Unit Masonry: Comply with ASTM C 476 and referenced unit masonry standard.

2.5 REINFORCING STEEL

A. Shall conform to ASTM A615, Grade 60.

2.6 JOINT REINFORCEMENT

A. General: Provide joint reinforcement complying with requirements of referenced unit masonry standard and this article, formed from the following:

1. Hot-dipped galvanized carbon steel wire, coating class as required by referenced unit masonry standard to application indicated.

B. Description: Welded-wire units prefabricated with deformed continuous side rods and plain cross rods into straight lengths of not less that 10 feet, with prefabricated corner and tee units, and complying with requirements indicated below:

1. Wire Diameter for Side Rods: 0.1483 inch (9 gauge).
2. Wire Diameter for Cross Rods: 0.1483 inch (9 gauge).
3. For multi wythe masonry provide type as follows:

a. Ladder design with diagonal cross rods spaced not more than 16 inches o.c. and number of side rods as follows:
1) Number of side Rods for Multi Wythe Concrete Masonry: One side rod for each face shell of hollow masonry units more than 4 inches in nominal width plus one side rod for each style of masonry 4 inches or less nominal width.

C. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated in the work include, but are not limited to, the following:

1. AA Wire Products Co.
2. Dur-O-Wal, Inc.
3. Heckmann Building Products, Inc.
4. Hohmann & Barnard, Inc.

2.7 TIES AND ANCHORS, GENERAL

A. Masonry Joint Reinforcement, General: ASTM A 951.

1. Interior Walls: Hot-dip galvanized, carbon steel.
2. Exterior Walls: Stainless steel, 18-8, type 316.
3. Wire Size for Side Rods: W2.8 or 0.188-inch (4.8-mm) diameter.
4. Wire Size for Cross Rods: W2.8 or 0.188-inch (4.8-mm) diameter.
5. Wire Size for Veneer Ties: W2.8 or 0.188-inch (4.8-mm) diameter.
6. Spacing of Cross Rods, Tabs, and Cross Ties: Not more than 16 inches (407 mm) o.c.
7. Provide in lengths of not less than 10 feet (3 m) with prefabricated corner and tee units.

B. Steel Plates and Bars: ASTM A 36, hot-dip galvanized to comply with ASTM A 123 or ASTM 153, Class B3, as applicable to size and form indicated.

C. Available Manufacturers: Subject to compliance with requirements, manufacturers offering products that may be incorporated in the work include, but are not limited to, the following:

1. Heckmann Building Products, Inc. – Basis of Design: Pos-i-Tie
2. AA Wire Products Co.
3. Dur-O-Wal, Inc.

4. Hohmann & Barnard, Inc.

2.8 ADJUSTABLE ANCHORS FOR CONNECTING MASONRY TO STRUCTURAL FRAMEWORK

A. General: Two-piece assemblies as described below allowing vertical or horizontal differential movement between wall and framework parallel to plane of wall, but resisting tension and compression forces perpendicular to it.

B. For anchorage to steel framework provide manufacturer's standard anchors with crimped 1/4inch diameter wire anchor section for welding to steel and triangular-shaped wire tie section sized to extend within 1 inch of masonry face and as follows:

1. Wire Diameter: 0.1875 inch.

2.9 RIGID ANCHORS

A. Provide straps of form and length indicated, fabricated from metal strips of following width and thickness:

1. 1/1/2 inches wide by 1/4inch thick.

2.10 ADJUSTABLE MASONRY VENEER ANCHORS

A. General: Provide toe-piece assemblies allowing vertical or horizontal differential movement between wall and framework parallel to plane wall, but resisting tension and compression forces perpendicular to it; for attachment over sheathing to metal studs; and with the following structural performance characteristics.

1. Structural performance Characteristics: Capable of withstanding a 100lb/ft load in either tension or compression without deforming over, or developing play in excess of, 0.05inch.

B. Screw-Attached Masonry Veneer Anchors: Unites consisting of wire tie section and metal anchor section complying with the following requirements:

1. Wire Tie Shape: Triangular.
2. Wire Tie Length: As required to extend 2 inches into masonry wythe of veneer face.
3. Anchor Section: Sheet metal plate, with screw holes top and bottom and with raised, rib-stiffened strap stamped into the center to provide slot between strap and plate for connection of wire tie; of overall indicated below:

a. Size: Plate and Strap size: 1-1/4 inches wide for plate, 5/8 inch for strap by lengths indicated bellow; slot clearance formed between face of plate and back of strap at maximum rib projection: 1/32 inch plus diameter of wire tie.
1) Plate and Strap Lengths: 6 inches and 3-5/8 inch; with both sides of plate stiffened by ribs.

C. Available Products: Subject to compliance with requirements, products that may be incorporated in the Work include, but are not limited to, the following:

1. Screw-Attached Masonry Veneer Anchors:

a. "D/A 213", Dur-O-Wal, Inc.
b. "X Seal Anchor system", Hohmann & Barnard, Inc.

2.11 MISCELLANEOUS ANCHORS

A. Unit Type Masonry Inserts in Concrete: Cast iron or malleable iron inserts of type and size indicated.

B. Dovetail Slots: Furnish dovetail slots, with filler strips, of slot size indicated, fabricated from 0.0336 inch (22 gauge) sheet metal.

C. Anchor Bolts: steel bolts complying with A 307, Grade A; with ASTM A 563 hex nuts and, where indicated, flat washers; hot dip galvanized to comply with ASTM A 153, Class C; of diameter and length indicated and in the following configurations.

D. Anchors for Tying New Brick Masonry to Existing Masonry: 1-1/2 inch x 14 gauge hot dipped galvanized corrugated box anchor with 1/4inch x 1 inch galvanized metal hit anchor as manufactured by Hilti.

2.12 EMBEDDED FLASHING MATERIALS

A. Elastomeric Fabric Flashing: Fabricate to comply with requirements of Division 7 Section "Elastomeric Flashing" and below:

1. 60 mil thick uncured neoprene.

B. Sheet Metal Flashing (alternatively): Fabricate from the following metal complying with requirements specified in Division 7 Section "Sheet Metal Work and Flashing" and below:

1. Stainless Steel: 24 gauge.
2. Application: use where flashing is fully or partially concealed in masonry wall.

C. At all wall opening, window sills, coping and parapet walls: Flashings should project a minimum of ½" from the face of masonry.

2.13 MISCELLANEOUS MASONRY ACCESSORIES

A. Bond Breaker Strips: Asphalt-saturated organic roofing felt complying with ASTM D 226, Type I (No. 15 asphalt felt).

B. Weep holes: Weep holes shall be screened to prevent clogging with backfill materials. Weep holes for masonry veneer are required at a maximum spacing of 2'-8" in the vertical joints at the base of the bottom course. Provide mesh filler in cavity at weep locations. Provide drip slots in the masonry at the window heads to minimize excessive water runoff or leeching.

1. Provide the following: Round Plastic Tubing: Medium-density polyethylene, 3/8 inch outside diameter by 4 inches long.

C. Seismic Masonry-Veneer Anchors: Units consisting of a metal anchor section and a connector section designed to engage a continuous wire embedded in the veneer mortar joint.

1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:

   a. Hohmann & Barnard, Inc.; DW-10-X-Seismiclip, X Seal System.

2. Anchor Section: Gasketed sheet metal plate, 1-1/4 inches (32 mm) wide by 6 inches (152 mm) long, with screw holes top and bottom; top and bottom ends bent to form pronged legs to bridge insulation or sheathing and contact studs; and raised rib-stiffened strap, 5/8 inch (16 mm) wide by 6 inches (152 mm) long, stamped into center to provide a slot between strap and plate for inserting wire tie. Provide anchor manufacturer's standard, self-adhering, modified bituminous gaskets manufactured to fit behind anchor plate and extend beyond pronged legs.
3. Connector Section: Triangular wire tie and rigid PVC extrusion with snap-in grooves for inserting continuous wire. Size wire tie to extend at least halfway through veneer but with at least 5/8-inch (16-mm) cover on outside face.
4. Fabricate wire connector sections from 0.25-inch- (6.35-mm-) diameter, stainless-steel wire.

2.14 MASONRY CLEANERS

A. Job-Mixed Detergent Solution: Solution of trisodium phosphate (1/2-cup dry measure) and laundry detergent (1/2cup dry measure) dissolved in one gallon of water.

B. Proprietary Acidic Cleaner: Manufacturer’s standard-strength, general-purpose cleaner designed for removing mortar/grout stains, efflorescence and other new construction stains from masonry surfaces; expressly approved for intended use by manufacturer of masonry units being cleaned.

1. For masonry not subject to metallic oxidation stains, use formulation consisting of a concentrated blend of surface-acting acids, chelating and wetting agents.
2. Available Products: Subject to compliance with requirements, a product that may be used to clean unit masonry surfaces includes, but is not limited to, the following:

   a. “Sure Klean No. 6000 Detergent”, ProSoCO, Inc.

2.15 SOURCE QUALITY CONTROL

A. Brick Tests: For each type and grade of brick indicated, units will be tested by qualified independent testing laboratory per ASTM C 67 except 5 bricks will be selected at random for each 100,000 units or fraction thereof installed.

B. Concrete Masonry Unit Tests: For each type, class and grade of concrete masonry unit indicated, units will be tested by qualified independent testing laboratory for strength, absorption and moisture content per ASTM C 140.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine conditions, with Installer present, for compliance with requirements for installation tolerances and other specific conditions and other conditions affecting performance of unit masonry.
   1. For the record, prepare written report, endorsed by Installer, listing conditions detrimental to performance of unit masonry.

B. Do not proceed until unsatisfactory conditions have been corrected.

3.2 INSTALLATION, GENERAL

A. Comply with referenced unit masonry standard and other requirements indicated applicable to each type of installation included in Project.

B. Thickness: Build Composite walls and other masonry construction the full thickness shown.

C. Cut masonry units with motor-driven saws to provide clean, sharp, unchipped edges. Cut units as required to provide continuous pattern and to fit adjoining construction. Use full size units without cutting where possible.

3.3 CONSTRUCTION TOLERANCES

A. Comply with construction tolerances of referenced unit masonry standard.

3.4 LAYING MASONRY WALLS

A. Lay out walls in advance for accurate spacing of surface bond patterns with uniform joint widths and for accurate locating of openings, movement-type joints, returns and offsets. Avoid the use of less-than-half-size units at corners, jambs and where possible at other locations.

B. Lay up walls to comply with specified construction tolerances, with courses accurately spaced and coordinated with other construction.

C. Bond Pattern for Exposed Masonry: Lay exposed masonry in the following bond pattern; do not use units with less than nominal 4 inch horizontal face dimensions at corners or jambs.

   1. One-half running bond with vertical joint in each course centered on units in courses above and below.

D. Lay concealed masonry will all units in a wythe in running bond or bonded by lapping not less than 2 inches. Bond and interlock each course of each wythe at corners. Do not use units with less than nominal 4 inch horizontal face dimensions at corners or jambs.

E. Stopping and Resuming Work: In each course, rack back ½ unit length for one half running bond or 1/3 unit length for one third running bond; do not tooth. Clean exposed surfaces of set

masonry, wet clay masonry units lightly (if required), and remove loose masonry units and mortar prior to laying fresh masonry.

F. Built-In Work: As construction progresses, built-in items specified under this and other Sections of the Specifications. Fill in solidly with masonry around built-in items.

1. Fill space between hollow metal frames and masonry solidly with mortar, unless otherwise indicated.
2. Where built-in items are to be embedded in cored of hollow masonry units, place a layer of metal plates, beams, lintels, posts and similar items, unless otherwise indicated.

3.5 MORTAR BEDDING AND JOINTING

A. Lay hollow concrete masonry as follows:

1. With full mortar coverage on horizontal and vertical face shells.

B. Tool exposed joints slightly concave when thumbprint hard, using a jointer larger than joint thickness unless otherwise indicated.

C. Cut joints flush for masonry walls to be concealed or to be covered by other materials, unless otherwise indicated.

3.6 STRUCTURAL BONDING OF MULTI WYTHE MASONRY

A. Use continuous horizontal joint reinforcement installed in horizontal mortar joints for bind ties between wythes.

B. Corners: Provide interlocking masonry unit bond in each course at corners, unless otherwise shown.

1. Provide continuity with horizontal joint reinforcement at corners using prefabricated “L” units, in addition to masonry bonding.

3.7 ANCHORING MASONRY TO STRUCTURAL MEMBERS

A. Anchor masonry to structural members where masonry abuts or faces structural members to comply with the following:

1. Provide an open space not less than 1 inch in width between masonry and structural member, unless otherwise indicated. Keep open space free of mortar or other rigid materials.
2. Anchor masonry to structural members with flexible anchors embedded in masonry joints and attached to structure.
3. Space anchors as indicated, but no more than 24 inches o.c. vertically and 36 inches o.c. horizontally.

3.8 LINTELS

A. Install lintels where indicated, whether steel or precast.

B. Provide minimum bearing of 8 inches at each jamb, unless otherwise indicated.

3.9 FLASHING/WEEP HOLES

A. Install flashings as follows:

B. General: Install embedded flashing and weep holes in masonry at shelf angles, lintels, ledges and other obstructions to the downward flow of water in the wall and where indicated.

C. Prepare masonry surfaces so that they are smooth and free from imperfections that could puncture flashing. Place through-wall flashing on sloping bed of mortar and cover with mortar. Seal penetrations in flashing with adhesive/sealant/tape as recommended by flashing before covering with mortar.

D. Install flashing as follows:

1. At lintels and shelves, extend flashing a minimum of 4 inches into masonry at each end. Extend flashing from exterior face of outer wythe of masonry, through the outer wythe, turned up a minimum of 4 inches, and into the inner wythe.
2. At heads and sills, extend flashing as specified above unless otherwise indicated but turn up ends not less than 2 inches to form a pan.
3. Install flashing in masonry veneer walls as specified above but carry flashing up face of back up at wall at least 8 inches.
4. Interlock end joints of ribbed sheet metal flashings by overlapping ribs not less than 1-1/2 inches or as recommended by flashing manufacturer and seal lap with elastomeric sealant complying with requirements of Division 7 Section “Joint Sealers” for application indicated.
5. Turn down sheet metal flashings at exterior face of masonry to form drip.

E. Install weep holes in the head joints in exterior wythes of the first course of masonry immediately above embedded flashing and as follows:
1. Form weepholes with product specified in Part 2 of this Section.
2. Space weep holes 32 inched o.c.

F. Install regelts and nailers for flashing and other related construction where shown to built into masonry.

3.10 FIELD QUALITY CONTROL

A. The licensed testing laboratory (Laboratory) will be hired and paid directly by the Owner. The Laboratory will submit reports to the Architect. The Laboratory will provide special inspections of masonry in the field, and will test specimens taken at the site. The Laboratory will employ only qualified inspectors to perform all special inspections and laboratory tests. Alternatively, the Structural Engineer of Record will be hired by the Owner to perform the Special Inspections. The testing and inspection by the Owner's Laboratory or the Structural Engineer of Record in no way relieves the Contractor of responsibility for the required quality.

B. Testing: Tests and evaluations listed in this article will be performed during construction for each 5000sq.ft. of wall area or portion thereof.

1. Concrete Masonry Units will be sampled and tested in accordance with the requirements of ASTM C140. One test, consisting of compressive strength tests on three individual masonry units, will be carried out on samples randomly selected from stockpiles. At least one test will be carried out on each load delivered to the site and on each lot as defined in ASTM C 140.
2. Mortar properties will be tested per property specifications of ASTM C 270.
3. Mortar composition and properties will be evaluated per ASTM C 780.
4. Grout Compressive strength will be sampled and tested per ASTM C 1019.

C. Special Inspections: The Laboratory will have a qualified special inspector at all times when masonry is being placed. All inspections will be done by or under the supervision of a licensed Structural Engineer.

1. Provide Continuous Special Inspections as identified in Section 17 of the applicable building code.
2. Provide Periodic Special Inspections as identified in Section 17 of the applicable building code.
3. Provide either Level 1 or Level 2 Special Inspections, depending on the type of building, as identified in Section 17 of the applicable building code.

D. Test Reports:

1. The Laboratory will transmit 3 copies of test reports to the Architect no later than 2 business days from the date of the test. These reports shall record the following:
    a. The building unit being installed.
    b. The specific location of the masonry being tested including which floor, location in the floor and walls by number, etc.
    c. The specified classification, and characteristics of materials being tested.
    d. The minimum and average daily air temperature.
    e. Volume of materials represented by test.
2. All test reports shall be signed and sealed by a Professional Engineer licensed in New York state.
3. Non-compliant Test Reports: All test reports indicating non-compliance should be transmitted immediately to all parties on the test report distribution list. Copies shall be on different colored paper.

E. Special Inspection Reports:

1. The Laboratory will transmit 3 copies of the inspection reports to the Architect no later than 2 business days from the date of inspection. The reports will cover location of masonry installation, work progress, weather conditions, variations and deficiencies in quality of contractor's work, changes in dimensions and quantities, errors and corrective methods administered in the field, etc.
2. All inspection reports shall be signed and sealed by a Professional Engineer licensed in the state having jurisdiction over the project.

3.11 REPAIRING, POINTING AND CLEANING

A. Remove and replace masonry units that are loose, chipped, broken, stained or otherwise damaged or if units do not match adjoining unit. Install new units to match adjoining units and in fresh mortar or grout, pointed to eliminate evidence of replacement.

B. Pointing: During the tooling of joints, enlarge any voids or holes, except weep holes and completely fill with mortar. Point-up all joints including corners, openings and adjacent construction to provide a neat uniform appearance, prepared for application of sealants.

C. Final Cleaning: After mortar is thoroughly set and cured, clean exposed masonry as follows:
   1. Remove large mortar particles by hand with wooden paddles and nonmetallic scrape hoes or chisels.
   2. Test cleaning methods on sample wall panel; leave ½ panel not cleaned for comparison purposes. Obtain Architect's approval of sample cleaning before proceeding with cleaning masonry.
   3. Protect adjacent precast and non-masonry surfaces from contact with cleaner by covering them with liquid strippable asking agent, polyethylene film or waterproof masking tape.
   4. Wet wall Surfaces with water prior to application of cleaners; remove cleaners promptly by rinsing thoroughly with clear water.
   5. Clean brick by means of bucket and brush hand-cleaning method described in BIA "Technical Note No. 20 Revised" using the following masonry cleaner:

      a. Proprietary acidic cleaner; apply in compliance with directions of acidic cleaner manufacturer.

D. Protection: Provide final protection and maintain conditions, in a manner acceptable to Installer that ensures unit masonry is without damage and deterioration at time of Substantial Completion.

3.12 MASONRY WASTE DISPOSAL

A. Salvageable Materials: Unless otherwise indicated, excess masonry materials are Contractor's property. At completion of unit masonry work, remove from Project site.

B. Retain first paragraph below if clean masonry waste can be used as fill in footing trenches, etc. This diverts some material from waste stream, conserving landfill space and energy required to haul waste away.

C. Waste Disposal as Fill Material: Dispose of clean masonry waste, including excess or soil-contaminated sand, waste mortar, and broken masonry units, by crushing and mixing with fill material as fill is placed.
   1. Crush masonry waste to less than 4 inches (100 mm) in each dimension.
   2. Mix masonry waste with at least two parts of specified fill material for each part of masonry waste. Fill material is specified in Section 312000 "Earth Moving."
   3. Generally retain subparagraph below. If required, increase limit if acid-soil plants are used for foundation plantings.
   4. Do not dispose of masonry waste as fill within 18 inches (450 mm) of finished grade.

D. Excess Masonry Waste: Remove excess clean masonry waste that cannot be used as fill, as described above, and other masonry waste, and legally dispose of off Owner's property.

3.13 LIMESTONE FACADE PANEL REPAIRS (NOT USED)

A. Clean the facade panels, to remove all accumulated dirt and stains before beginning the repairs.

B. Remove loose pieces of the existing panels, and clean the edges of the repair surface.

C. Install epoxy set stainless steel anchor rods, to support the repair mortar.

D. Install and tool the repair mortar, so the surface texture, color and finish of the repair patch blends into the surrounding limestone panel, and “disappears from view”.

3.14 WASTE MANAGEMENT

A. Coordinate with Section 01 7419.

1. Separate and recycle cut-offs and waste materials and material packaging in accordance with Waste Management Plan and to the maximum extent economically feasible and place in designated areas for recycling.

2. Set aside and protect materials suitable for reuse and/or remanufacturing.

3. Separate and fold up metal banding; flatten and place along with other metal scrap for recycling in designated area.

END OF SECTION 04 20 00

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SECTION 05 12 00 – STRUCTURAL STEEL

PART 1 - GENERAL

1.1 SCOPE

A. The extent of Structural Steel is as shown on the Contract Documents and as herein specified. The General and Supplementary Conditions and Division 1 Specification sections apply to work of this section.

1.2 ENERAL PROVISIONS

A. Standard Specifications and Codes issued by professional organizations and governmental agencies are specified hereinafter by basic designations and only the latest editions and revisions thereto shall apply to the work of this Section.

B. Applicable Standard Specifications and Codes:

1. The 2020 New York State Building Code

2. Specifications for the Design, Fabrication and Erection of Structural Steel for Buildings issued by the American Institute of Steel Construction. (AISC).

3. AWS D1.1 “Structural Welding Code – Steel” issued by the American Welding Society (AWS).

4. “Specification for Structural Joints Using ASTM A325 or A490 Bolts” issued by the AISC.

5. Painting Manual, Volume 2, “Systems and Specifications”, as issued by the Steel Structures Painting Council (SSPC).

6. "Code of Standard Practice for Steel Buildings and Bridges" as issued by the AISC.

C. In case of any conflict between the referenced standards and these specifications, the one having more stringent requirements shall prevail.

D. Coordination: Carry out the work of this Section in coordination and cooperation with contiguous work of other trades and/or Contracts involved.

1.3 SHOP DRAWINGS

Retain "Preinstallation Conference" Paragraph below if Work of this Section is extensive or complex enough to justify a preinstallation conference.

A. Submit Shop Drawings for the Architect's approval in accordance with the provisions of Section 013300.

B. The submittals shall include the following:

1. Erection plans: Shall be submitted for approval as early as possible.

2. Standard and special details: Submit standard and special details for approval as soon as possible.

3. Shop drawings shall indicate type, size and dimensions of all welds, and shall include details of the surface preparation and shop painting.

4. The details shall be made in such a way as to avoid having steel connections, bracing, etc. interfere with architectural details or in any way reduce the areas of shafts, openings, clearances, etc.

5. Shop drawings submitted electronically shall follow proper channels of submission as established with the owner and the design team. In addition, provisions of the General Conditions, as well as Section 013300 shall be followed as established for hard copy submissions. Shop drawings shall be submitted under a separate cover, include the title block and clearly identify the project on each drawing. Provide all other pertinent information and include the general contractor's review comments and review status on the electronic submission.

C. No fabrication shall be undertaken until respective shop drawings are marked "No Exception Taken" or "No Exception Except as Noted".

1.4 ALTERATIONS AND ADDITIONS TO EXISTING STEEL STRUCTURE

A. The Contractor shall verify existing conditions before submitting shop drawings for approval, including:

1. Dimensions and elevations.

2. Sizes.

3. Acceptable condition (not deteriorated or damaged).

B. The Contractor shall notify the Architect of any varying or interfering conditions affecting the alterations or additions so that the design may be adjusted to suit.

C. The Contractor shall carefully fit new connections to safe and acceptable tolerances.

D. Cutting of existing steel shall be done with extreme care. Do not over cut. Shore and brace whenever safety is questionable.

Verify available warranties and warranty periods for fire extinguishers with manufacturers.

PART 2 - PRODUCTS

See Editing Instruction No. 1 in the Evaluations for cautions about named manufacturers and products. For an explanation of options and Contractor's product selection procedures, see Section 01 60 00 "Product Requirements."

2.1 MATERIALS

A. Structural Steel shall conform to the following unless otherwise noted:

1. Channels, angles, plates and bars – ASTM A36
2. Round HSS – ASTM A53, Grade B
3. Square and rectangular HSS - ASTM A500, Grade B
4. HP shapes – ASTM A572, Grade 50
5. All others – ASTM A992, Grade 50

B. Bolts shall be ASTM A325, or A490. A307 may be used, if approved by the Structural Engineer of Record.

C. High Strength Bolts:

1. Bolts: Use ASTM A325 or A490 bolts manufactured by Infasco or approved equal. ASTM F1852 twist-off type tension control bolts produced by manufacturer may be used if approved by the Structural Engineer of Record.
2. Hardened washers: Use ASTM F436 washers manufactured by Infasco or approved equal.
3. Heavy hex nuts: Use only ASTM A563 heavy hex nuts manufactured by Infasco or Unytite Inc.
4. Galvanized Bolts: Where shown or noted as galvanized, bolts nuts and washers shall be hot-dip galvanized in compliance with ASTM A153. Nuts shall be lubricated in accordance with ASTM A563. Rotational capacity tests shall be performed on each assembly lot.

D. Filler Metal:

1. Electrodes: As required for matching base metal as specified in AWS “Structural Welding Code-Steel”.
2. The electrodes and flux used for submerged arc welding shall be provided by the same manufacturer. The flux shall be free of contamination from dirt, mill scale and other foreign material. Fused flux used in welding shall not be reused.
3. Filler metal for welding of new to existing steel shall be determined based on the test results conducted by a testing laboratory approved by the Structural Engineer of Record.

E. Paint for Shop Coat, except as otherwise required for compatibility with finish paints as specified in Section 099000, shall be “Azeron H.S. Primer No. 88-555” by Tnemec, or a comparable suitable product by DuPont or Glidden.

PART 3 - EXECUTION

3.1 DESIGN AND WORKMANSHIP

A. Unless otherwise specified or indicated, the design, fabrication and erection of steel work included in this Contract shall conform to the Specifications for the Design, Fabrication and Erection of Structural Steel for Buildings, by the American Institute of Steel Construction, and the regulations of the Building Code, including all amendments made thereto, whichever is the more restrictive.

B. Existing Conditions:

1. Visit the project site and advise the Architect of any discrepancy or conflict. Field verify existing construction requirements, existing conditions, restrictions and clearances which may affect structural steel erection.

2. Examine the substrates, adjoining construction and the conditions under which the work is to be installed. Do not proceed until unsuitable conditions have been corrected. Consider all conditions which will affect satisfactory erection of the structural steel.

C. Erection:

1. Check the alignment and elevations of all column supports and location of all anchor bolts with transit and level instruments before starting erection. Notify and obtain Structural Engineer of Record’s approval of methods proposed for correcting errors prior to proceeding with corrections.

2. Drift pins may be used only to align the erected parts. They shall not be used in such manner as to distort or damage the steel.

3. Make all necessary provisions for temporary shoring and bracing with connections of sufficient strength to sustain the imposed loads and for completion of erection where structural members are temporarily left out for erection at a later date.

4. Base and Bearing Plates:
   a. Clean concrete and masonry bearing surfaces of deleterious materials and roughen as necessary to provide adequate bond. Clean bottom surface of base and bearing plates immediately prior to erection.
   b. Set loose and attached base plates and bearing plates for structural members on wedges or other adjusting devices.
   c. Tighten anchor bolts after supported members have been positioned and plumbed. Do not remove wedges or shims. Cut off protruding parts flush with edges of base or bearing plates prior to packing with grout.

d. Pack grout solidly between bearing surfaces and steel or plates. Ensure that no voids remain. Finish exposed surfaces, protect installed materials, and allow to cure as per manufacturer's specifications.

3.2 HIGH STRENGTH BOLTING

A. High Strength Bolts shall be installed as per "Specification for Structural Joints using ASTM A325 or A490 Bolts".

3.3 WELDING

A. Materials and Workmanship:

1. Welding shall be done in accordance with the Building Department and Fire Department Regulations and the requirements of the AWS "Structural Welding Code-Steel", referenced herein.

2. Peening: Used only after permission for its use is obtained from the Architect.

3. Protection, storage and drying of welding electrodes shall be as specified in AWS "Structural Welding Code-Steel".

4. Groove welds shall be complete penetration welds unless otherwise shown.

B. Welders and Welding Operators:

1. Welders and welding operators to be employed for this work must be qualified as prescribed in AWS "Structural Welding Code-Steel" and carry current certification as required by the Department of Buildings.

2. All costs for qualifying welders will be borne by the Contractor.

3.4 SURFACE PRAPARATION AND PAINTING

A. All steel shall be cleaned in accordance with SSPC SP-2 "Hand Tool Cleaning", except as specified below for "Architectural Steel".

B. After fabrication, steel shall receive a shop coat of paint to provide 2.0 - 4.0 mils dry film thickness, except for the following:

1. Members to be encased in concrete.

2. Areas within 2" of field welds.

3. Contact surfaces of high-strength bolted connections.

4. Surfaces receiving shear studs rebar dowels, etc.

5. Milled surfaces (protect with an approved rust- inhibitive coating readily removable prior to erection, or of a type not requiring removal).

6. Members which will receive cementitious fireproofing.

7. Members to be galvanized.

C. After erection all damaged areas in the shop-coat, loosened scale, rust, exposed surfaces of bolts, nuts and washers, and all field welds and unpainted areas shall be cleaned to the same standards as for the shop coat and spot painted with the same paint used for the shop coat, at same film thickness.

D. Steel surfaces which will be inaccessible after erection and are not concrete encased shall be painted prior to erection with an additional coat of shop paint.

END OF SECTION 05 12 00

SECTION 05 31 00 – STEEL DECKING

PART 1 - GENERAL

1.1 REQUIREMENTS

A. Provide metal decking in accordance with the Contract Documents.

1.2 SCOPE

A. The extent of Steel Decking is as shown on the Contract Documents and as herein specified. The General and Supplementary Conditions and Division 1 Specification sections apply to work of this section.

B. Work included but not limited to:

1. Metal deck shown on drawings, including required shoring.

2. Steel flashing between metal deck and adjacent construction, and all other miscellaneous items and accessories required for the completion of metal deck work.

3. Cutting and reinforcing of openings in metal deck.

1.3 GENERAL PROVISIONS

A. Standard Specifications and Codes issued by professional organizations and governmental agencies are specified hereinafter by basic designations and only the latest editions and revisions thereto shall apply to the work of this Section.

B. Applicable Standard Specifications and Codes:

1. The Building Code of New York State, latest edition.

2. "Specification for the Design of Cold-Formed Steel Structural Members" issued by the American Iron and Steel Institute.

3. "Code for Welding in Building Construction" issued by the American Welding Society.

C. In case of any conflict between the referenced standards and these specifications, the one having more stringent requirements shall prevail.

D. Tests of weight of zinc coating shall conform to ASTM A90. Test panels shall be not less than 3” x 6” cut from fabricated deck units equivalent to those to be furnished. A sample of the zinc-coated accessories shall be tested by the same method. Contractor shall submit copies of test reports to Architect for approval.

E. Coordination: Carry out the work of this Section in coordination and cooperation with contiguous work of other trades and/or Contracts involved.

F. Inspection in Mill, Shop and Field: The material to be furnished shall be subject to inspection and tests in the mill, shop, and field by the Owner's inspectors, at no cost to the Contractor. However, inspection in the mill, shop or field will not relieve the Contractor of the responsibility to furnish satisfactory materials.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Metal Deck: Depths and gages are shown on the drawings. The types, design and function of metal decks shown are specified to products as manufactured by Canam USA (manufacturers of United Steel Deck products). Equivalent products meeting design requirements will be accepted if approved by the Architect prior to the award of the Contract.

B. Finish Flashing: Of not less than 18 gauge galvanized sheet steel, except as approved for a particular use, to close openings between floor units and columns, beams and girders where required.

C. Finishes: Composite metal deck shall be phosphatized / painted only on the side that will not be in contact with concrete. All other deck, closures, etc. shall be galvanized.

2.2 ACCESSORIES

A. Provide minimum 18 gauge galvanized end closures and change of direction plates, minimum 18 gauge side closure plates.

B. Include hanger tabs to be suspended from bottom of metal deck units. The hanger tabs shall be spaced 4'-0” on center, each way, designed to support maximum allowable load of 40 lbs. per hanger.

C. Surface Finishes: Accessories shall receive, before being formed, a zinc coating conforming to ASTM A525, wiped coating designation G90.

D. Where bottom of deck is above top flange of beam, provide permanent supporting seat or filler, 18 gage minimum.

PART 3 - EXECUTION

3.1 DELIVERY, STORAGE, AND HANDLING

A. Metal deck, miscellaneous items and accessories shall be delivered, stored, handled and installed, so as not to be damaged or deformed. Failure to wire brush and paint rusted areas immediately upon detection shall be cause for rejection. Decking stored at the site before erection shall be stacked on platforms or pallets and covered with tarpaulins or other suitable covering to provide weather tight enclosure while affording proper air circulation. The decking shall not be used for storage or as a working platform until the sheets have been securely fastened in position and shall not be damaged or overloaded during the entire construction period.

3.2 ERECTION

A. Metal deck shall be installed according to the manufacturer's recommendations. Deck units shall be in lengths to span over three or more supports wherever possible.

B. The deck shall be fastened to supporting steel by electric arc welding. Care shall be exercised in the selection of electrodes and amperage to provide positive welds and prevent high amperage blow holes. Welds shall be made from the top side of the deck with the welder following close behind the placement crew.

C. Puddle welds shall be at least 3/4" diameter or an elongated weld having an equal perimeter. Fillet welds, when used, shall be approximately 1" long. Weld metal shall penetrate all layers of deck material at end laps and side joints and have good fusion to the supporting members.

D. The minimum weld spacing shall be such as to hold the deck against a 30psf gross uplift and to provide lateral stability to the top flange of the supporting structural members. The weld spacing between the adjacent attachment points shall not exceed 12" on center. The adjacent sheets shall be fastened together at maximum spacing of 24” on center.

E. All portions of Metal Deck omitted due to the installation of hoists or for future installation of mechanical equipment, chutes or other requirements shall be installed or patched and be repaired by this Contractor as directed by the Contractor at no additional cost to the Owner.

F. Closures and Flashings:

1. Furnish, install and weld into position, flashings of not less than No. 18 gauge sheet steel except as approved for a particular use, to close openings between floor units and columns, beams and girders where required.

2. Provide where required, minimum 18 gauge galvanized end closure, side closure and change of direction plates. The appropriate gage shall be designed by a structural engineer in contractor’s employ and shown on the shop drawings submitted for Architect’s approval.

3.3 CUTTING AND PATCHING

A. Do all cutting and fitting as may be necessary to provide openings around columns, ducts and other penetrations required in connection with decking. All cutting and fitting shall be performed in accordance with the design drawings and approved shop drawings.

B. In addition to the above, cut out and notch for pipes, conduits, etc. which will penetrate the metal deck and which are indicated on the Heating, Ventilating, Air Conditioning, Plumbing, Drainage, and Electrical drawings.

C. Reinforce all openings to produce rigid installations in conformance with required design loads in the installed work.

3.4 HANGER TABS

A. Provide hanger tabs or tab extenders in such numbers and locations as required for ceiling suspension systems and mechanical and electrical requirements. Contractor shall carefully coordinate number and location of hanger tabs with the respective trades of the ceiling

construction. Unless otherwise directed, hanger tabs or tab extenders shall be spaced at 4'-0" on center, each way.

B. END OF SECTION 05 31 00

SECTION 05 40 00 - COLD FORMED METAL FRAMING

PART 1 - GENERAL

1.1 SCOPE

A. All light gage steel studs, track, joists, trusses, bridging and related accessories as indicated on the Contract Drawings and specified herein, plus all supplementary parts necessary to complete light gage metal work, whether or not definitely shown on drawings or specified herein.

1.2 QUALITY ASSURANCE

A. Inspection and Quality Control:
   1. Contractor shall provide effective full-time quality control over all fabrication and erection activities.
   2. As directed by Architect, Owner's testing agency may inspect the maintenance of a quality control program, including spot checking weldments and welding procedure in accordance with A.W.S. standards.
   3. Steel framing manufacturer shall provide a qualified representative for periodic on-site review of fabrication and installation in accordance with manufacturer's recommendations.
   4. Inspection by Owner's testing agency is not intended to be comprehensive or complete.
   5. Full responsibility for quality control shall remain with Contractor.

B. Standards:
   1. Work shall meet the requirements of the latest edition of the following standards.
      a. The Building Code of State of New York.
      b. American Iron and Steel Institute (A.I.S.I.) Design and Cold Formed Steel Structural Members.
      c. American Welding Society (A.W.S. D.1.3, Structural Welding Code -- Sheet Steel).
      d. American Society for Testing and Materials (A.S.T.M.).
      e. American Institute of Steel Construction (A.I.S.C.) Manual of Steel Construction.
      f. All pertinent Federal, State and Local codes.
   2. The most stringent requirements shall govern in conflicts between specified codes and standards.
      a. Erection plans showing locations and marks of members. Fabrication drawings showing details at every member.
      b. Member gages, spacings and sizes.
      c. Shop and field assembly details including cuts and connections.
      d. Type and location of welds, bolts and other fastening devices.

1.3 PRODUCT HANDLING

A. Protection:
   1. Upon delivery, material shall be protected from rain and snow by impervious covering or shelter.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Framing members shall be manufactured and supplied by Marino Ware or approved equal and be of the type and size as shown on the plans.

2.2 MATERIAL

A. Members:
1. Members shall be formed from steel having a G-60 galvanized coating meeting the requirements of ASTM C-955.
2. Studs and Joists of 12,14 and 16 gage thicknesses shall be formed from steel conforming to ASTM A653 HSLAS Type A, with a minimum yield of 50,000 psi.
3. Except as specified above, all steel shall conform to ASTM A653 SS Grade with a minimum yield of 33,000 psi.

B. Properties:
1. The physical and structural properties listed Marino Ware shall be considered the minimum permitted for framing members. Specifically, the following minimum properties, calculated in accordance with the latest A.I.S.I. Specification shall be provided: Ix (in.4), Area (in.2), rx (in.), Fy (KSI), Resisting Moment (in.-lb.).

C. Substitutions:
1. Any substitutions must be approved in writing ten days prior to bid date by the Architect.

2.3 FABRICATION

A. Framing components may be preassembled into panels prior to erecting. Prefabricated panels shall be square, with components attached in a manner as to prevent racking.

B. Framing components shall be cut squarely for attachment to perpendicular members, or as required for an angular fit against abutting members. Members shall be held positively in place until properly fastened.

C. Provide insulation equal to that specified elsewhere in double jamb studs and double header members which will not be accessible to the insulation contractor.

D. Axially Loaded Studs:
1. Studs shall have full bearing against inside track web, prior to stud and track attachment.
2. Splices in axially loaded studs shall not be permitted.

PART 3 - EXECUTION

3.1 SURFACE CONDITIONS

A. Inspection:
1. Prior to installation inspect work of all other trades. Verify that all such work is complete an accurate to the point where this installation may properly commence in strict accordance with framing shop drawings.

B. Discrepancies:
   1. Immediately notify Architect of all discrepancies.
   2. Do not proceed with installation in areas of discrepancies until such discrepancy has been fully resolved.

3.2 ERECTION

A. Walls:
   1. Erect framing and panels plumb, level and square in strict accordance with the approved shop drawings.
   2. Handling and lifting of prefabricated panels shall be done in a manner as to not cause distortion in any member.
   3. Track shall be securely anchored to the supporting structure as shown on the fabrication and erection drawings.
   4. At track butt joints, abutting pieces of track shall be securely anchored to a common structural element or they shall be butt-welded or spliced together.
   5. Studs shall be plumbed, aligned and securely attached to the flange or webs of both upper and lower tracks.
   6. Wall stud bridging shall be attached in a manner to prevent stud rotation. Bridging rows shall be spaced according to the manufacturer's recommendation. Without supportive data, the minimum bridging shall be at mid-height of walls. Installation of bridging must be completed before any loads are applied to the system.
   7. Temporary bracing shall be provided until erection is completed.

B. Cold Formed Steel Joists:
   1. Joists shall be located directly over bearing studs or a load distribution member shall be provided at the top track.
   2. Provide web stiffeners at reaction points where indicated by plans.
   3. Joist bridging shall be installed at 3'-0" o.c. maximum intervals.
   4. Proper attachments of diaphragm rated products, such as plywood or metal deck, will prevent rotation of the compression flange of the joists. These may be used in lieu of the top flat strap. Installation of these products and the balance of the mechanical bridging components must be completed before any loads are applied to the joists.
   5. Install 16 gage solid bridging in first two and last two joist spaces. Starting at third joist space, install V-bar bridging at bottom, extending for 10'-0" run. Follow with solid bridging in one space. Repeat to completion, with each 10'-0" run of strap bridging followed by one space of solid bridging.
   6. Solid bridging shall not be less than 2" maximum reduction to section depth.
   7. End blocking shall be provided where joist ends are not otherwise restrained from rotation.

3.3 CONNECTIONS

A. Provide close fitting joints cut flush with adjacent structural steel supports, cut, drill, punch and tap for the installation and attachment of other work to miscellaneous metal work as follows:
   1. Joints:
      Make joints as strong and rigid as adjoining sections. Make welds continuous along entire line of contract, except where spot welding is indicated. Grind exposed weld flush and smooth. Where bolted or riveted connections are indicated, such connection may be welded. Seat studs squarely in track with stud web and flange abutting track web.
   2. Welding:
      Perform welding in accordance with AWS D1.1 and AWS D1.3.

3. Screws: Screws and screwed connections shall conform to the AISI Cold-formed Steel Specification.

B. Anchorage:
Except where otherwise specified, members shall be fastened to structural steel by welded or bolted connections and to masonry with toggle bolts. Fastening to wood plugs in concrete or masonry will not be permitted. Drill holes for toggle bolts to the exact diameter of the bolt, using a rotary drill for concrete and a percussion drill for other masonry. Screws shall be threaded full length to the head of the screw.

3.4 WASTE MANAGEMENT

A. Coordinate with Division 01.

1. Separate and recycle cut-offs and waste materials and material packaging in accordance with Waste Management Plan and to the maximum extent economically feasible and place in designated areas for recycling.
2. Set aside and protect materials suitable for reuse and/or remanufacturing.
3. Separate and fold up metal banding; flatten and place along with other metal scrap for recycling in designated area.

END OF SECTION 05 40 00

SECTION 06 10 00 - ROUGH CARPENTRY

PART 1 - GENERAL

1.1 SUMMARY

A. The Work of this Section consists of the provision of all plant, labor, materials, equipment, testing and services necessary to complete the work of rough carpentry as shown on the schedules, keynotes, drawings, as specified herein, and as may be required by conditions and authorities having jurisdiction, including, but not limited to, the following:

1. Wood Preservative Treated Lumber.
2. Fire Retardant Treated Lumber.
3. Misc. Lumber.
4. Plywood backing panels.
5. Un-Treated roof related solid blocking, beveled siding, and plywood.

1.2 ACTION SUBMITTALS

A. Product Data: For each type of process and factory-fabricated product.

1. Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements.
2. Include data for fire-retardant treatment from chemical treatment manufacturer and certification by treating plant that treated materials comply with requirements.
3. Data for each type of fastener and anchor.

B. Mockups:

1. Construct 4 foot long mockups of each roof blocking assembly, to show how it will fit, get fastened to, and relate to adjoining building components.

2. Obtain the Architect's approval of each mock up before proceeding with the work. Remove and replace mockups that are rejected; approved mockups may be left in place and incorporated into the finished project.

1.3 INFORMATIONAL SUBMITTALS

A. Material Certificates: For dimension lumber specified to comply with minimum allowable unit stresses. Indicate species and grade selected for each use and design values approved by the ALSC Board of Review.

B. Evaluation Reports: For the following, from ICC-ES:

1. Wood-preservative-treated wood.
2. Fire-retardant-treated wood.
3. Powder-actuated fasteners.
4. Expansion anchors.
5. Metal framing anchors.

1.4 QUALITY ASSURANCE

A. Testing Agency Qualifications: For testing agency providing classification marking for fire-retardant treated material, an inspection agency acceptable to authorities having jurisdiction that periodically performs inspections to verify that the material bearing the classification marking is representative of the material tested.

PART 2 - PRODUCTS

2.1 WOOD PRODUCTS, GENERAL

A. Certified Wood: Materials shall be produced from wood obtained from forests certified by an FSC-accredited certification body to comply with FSC STD-01-001, "FSC Principles and Criteria for Forest Stewardship".

B. Lumber: DOC PS 20 and applicable rules of grading agencies indicated. If no grading agency is indicated, provide lumber that complies with the applicable rules of any rules-writing agency certified by the ALSC Board of Review. Provide lumber graded by an agency certified by the ALSC Board of Review to inspect and grade lumber under the rules indicated.

1. Factory mark each piece of lumber with grade stamp of grading agency.
2. For exposed lumber indicated to receive a stained or natural finish, mark grade stamp on end or back of each piece or omit grade stamp and provide certificates of grade compliance issued by grading agency.
3. Provide dressed lumber, S4S, unless otherwise indicated.

C. Maximum Moisture Content of Lumber: 15 percent for 2-inch nominal thickness or less, 19 percent for more than 2-inch nominal thickness unless otherwise indicated.

D. Roof blocking:
1. Construction grade Douglas Fir, kiln dried to 15%
2. Utility grade beveled cedar or redwood siding, or equivalent synthetic lumber products.
3. APA rated CDX plywood panels, assembled with exterior glue.

2.2 WOOD-PRESERVATIVE-TREATED LUMBER

A. Preservative Treatment by Pressure Process: AWPA U1; Use Category UC2 for interior construction not in contact with the ground, Use Category UC3b for exterior construction not in contact with the ground, and Use Category UC4a for items in contact with the ground.

1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium. Do not use inorganic boron (SBX) for sill plates.

B. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Do not use material that is warped or that does not comply with requirements for untreated material

C. Mark lumber with treatment quality mark of an inspection agency approved by the ALSC Board of Review.

D. Application: Treat all rough carpentry unless otherwise indicated.

1. Wood cants, nailers, curbs, equipment support bases, blocking, stripping, and similar members in connection with roofing, flashing, vapor barriers, and waterproofing.
2. Wood sills, sleepers, blocking, furring, stripping, and similar concealed members in contact with masonry or concrete.
3. Wood framing and furring attached directly to the interior of below-grade exterior masonry or concrete walls.
4. Wood framing members that are less than 18 inches above the ground in crawlspaces or unexcavated areas.
5. Do not treat roof related blocking or plywood.

2.3 FIRE-RETARDANT-TREATED MATERIALS

A. General: Where fire-retardant-treated materials are indicated, use materials complying with requirements in this article, that are acceptable to authorities having jurisdiction, and with fire-test-response characteristics specified as determined by testing identical products per test method indicated by a qualified testing agency.

B. Fire-Retardant-Treated Lumber and Plywood by Pressure Process: Products with a flame spread index of 25 or less when tested according to ASTM E 84, and with no evidence of significant progressive combustion when the test is extended an additional 20 minutes, and with the flame front not extending more than 10.5 feet beyond the centerline of the burners at any time during the test.

1. Use treatment that does not promote corrosion of metal fasteners.

2. Exterior Type: Treated materials shall comply with requirements specified above for fire-retardant-treated lumber and plywood by pressure process after being subjected to accelerated weathering according to ASTM D 2898. Use for exterior locations and where indicated.
3. Interior Type A: Treated materials shall have a moisture content of 28 percent or less when tested according to ASTM D 3201 at 92 percent relative humidity. Use where exterior type is not indicated.

C. Kiln-dry lumber after treatment to a maximum moisture content of 19 percent. Kiln-dry plywood after treatment to a maximum moisture content of 15 percent.

D. Identify fire-retardant-treated wood with appropriate classification marking of qualified testing agency.

E. Application: Treat all rough carpentry items indicated on Drawings, and the following:

1. Concealed blocking.
2. Plywood backing panels.

F. Allowable Design Loads: Provide products with allowable design loads, as published by manufacturer, which meet or exceed those of basis-of-design products. Manufacturer's published values shall be determined from empirical data or by rational engineering analysis and demonstrated by comprehensive testing performed by a qualified independent testing agency.

2.4 MISCELLANEOUS LUMBER

A. General: Provide miscellaneous lumber indicated and lumber for support or attachment of other construction, including the following:

1. Blocking.
2. Nailers.
3. Rooftop equipment bases and support curbs.
4. Cants.
5. Furring.
6. Grounds

B. Provide miscellaneous lumber for support or attachment of other construction in the following locations **(whether indicated on the plans or not):**

1. All wall mounted counters, shelf millwork units of any kind, and items furnished by the owner requiring wood blocking.
2. Any recessed items requiring wood blocking for attachment and or leveling.
3. Any and all construction elements requiring anchoring to walls and or structure.

C. For items of dimension lumber size, provide Construction or No. 2 grade lumber of any species.

D. For concealed boards, provide lumber with 15 percent maximum moisture content and any of the following species and grades:

1. Mixed southern pine; No. 2 grade; SPIB.
2. Eastern softwoods; No. 2 Common grade; NeLMA.
3. Northern species; No. 2 Common grade; NLGA

2.5 PLYWOOD BACKING PANELS

A. Equipment Backing Panels: DOC PS 1, fire-retardant treated, in thickness indicated or, if not indicated, not less than 3/4-inch nominal thickness.

2.6 FASTENERS

A. General: Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacture.

1. Where rough carpentry is exposed to weather, in ground contact, pressure-preservative treated, or in area of high relative humidity, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M.

B. Power-Driven Fasteners: NES NER-272.

C. Bolts: Steel bolts complying with ASTM A 307, Grade A; with ASTM A 563 hex nuts and, where indicated, flat washers.

D. Fasteners for roof related blocking shall be hot dipped galvanized steel; or steel with a proprietary rust inhibiting coating. Utilize minimum #12 diameter screws where ever possible; nails if used, shall have annular ring shanks. Do not use “dry-wall” screws to assemble roof related wood blocking. Anchors bolts shall have be formed of 1/2 inch diameter steel. Drilled anchors shall have 1/4 inch diameter shanks.

2.7 METAL FRAMING ANCHORS

A. Manufacturers: Subject to compliance with requirements, provide products by the following provide products by one of the following available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. Cleveland Steel Specialty Co.
2. KC Metals Products, Inc.
3. Phoenix Metal products, Inc.
4. Simpson Strong-Tie Co., Inc.
5. USP Structural Connectors.

B. Allowable Design Loads: Provide products with allowable design loads, as published by manufacturer that meet or exceed those indicated. Manufacturer's published values shall be determined from empirical data or by rational engineering analysis and demonstrated by comprehensive testing performed by a qualified independent testing agency.

C. Galvanized-Steel Sheet: Hot-dip, zinc-coated steel sheet complying with ASTM A 653/A 653M, G60 coating designation.

1. Use for interior locations unless otherwise indicated.

D. Hot-Dip, Heavy-Galvanized Steel Sheet: ASTM A 653/A 653M; structural steel (SS), high-strength low-alloy steel Type A (HSLAS Type A), or high-strength low-alloy steel Type B (HSLAS Type B); G185 coating designation; and not less than 0.036 inch thick.

1. Use for wood-preservative-treated lumber and where indicated.

2.8 MISCELLANEOUS MATERIALS

A. Sill-Sealer Gaskets: Glass-fiber-resilient insulation, fabricated in strip form, for use as a sill sealer; 1-inch nominal thickness, compressible to 1/32 inch; selected from manufacturer's standard widths to suit width of sill members indicated.

B. Sill-Sealer Gaskets: Closed-cell neoprene foam, 1/4 inch thick, selected from manufacturer's standard widths to suit width of sill members indicated.

C. Flexible Flashing: Composite, self-adhesive, flashing product consisting of a pliable, butyl rubber or rubberized-asphalt compound, bonded to a high-density polyethylene film, aluminum foil, or spunbonded polyolefin to produce an overall thickness of not less than 0.025 inch (0.6 mm).

D. Adhesives for Gluing Furring and Sleepers to Concrete or Masonry: Formulation complying with ASTM D 3498 that is approved for use indicated by adhesive manufacturer.

1. Adhesives shall have a VOC content of 70 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Set rough carpentry to required levels and lines, with members plumb, true to line, cut, and fitted. Fit rough carpentry to other construction; scribe and cope as needed for accurate fit. Locate furring, nailers, blocking, grounds, and similar supports to comply with requirements for attaching other construction.

B. Framing Standard: Comply with AF&PA's WCD 1, "Details for Conventional Wood Frame Construction," unless otherwise indicated.

C. Framing with Engineered Wood Products: Install engineered wood products to comply with manufacturer's written instructions.

D. Install fire-retardant treated plywood backing panels with classification marking of testing agency exposed to view.

E. Metal Framing Anchors: Install metal framing anchors to comply with manufacturer's written instructions. Install fasteners through each fastener hole.

F. Do not splice structural members between supports unless otherwise indicated.

G. Comply with AWPA M4 for applying field treatment to cut surfaces of preservative-treated lumber.

H. Where wood-preservative-treated lumber is installed adjacent to metal decking, install continuous flexible flashing separator between wood and metal decking.

I. Securely attach rough carpentry work to substrate by anchoring and fastening as indicated, complying with the following:

1. NES NER-272 for power-driven fasteners.

2. Table 2304.9.1, "Fastening Schedule," in ICC's International Building Code.

J. Roof Blocking:

1. Stagger joints in built up assemblies at least 2 feet to obtain maximum strength. Provide the appropriate shapes needed and adjust wood members to suit existing conditions for full bearing and secure attachment. Discard defective material, and pieces which are too small, and fabricate the work with a minimum of joints and an optimum joint arrangement.

2. Securely attach roof blocking to resist a pull of 275 pounds per lineal foot in any direction. Countersink all fasteners flush.

3. Space fasteners to achieve adequate holding power, generally as follows:
   a. Anchor bolts embedded in concrete, anchors drilled into concrete or masonry, screws into a steel deck or structural steel member, or screws into wood framing: 12 inches on center.
   b. Nails into wood: 8 inches on center.
   c. Install two rows of fasteners on blocking wider than 5 inches.
4. Install blocking neatly scribed and cut to fit within 1/4 inch of adjoining materials. Install blocking, shims and similar supports for the proper attachment of subsequent work.

3.2 PROTECTION

A. Protect wood that has been treated with inorganic boron (SBX) from weather. If, despite protection, inorganic boron-treated wood becomes wet, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.

B. Protect rough carpentry from weather. If, despite protection, rough carpentry becomes sufficiently wet that moisture content exceeds that specified, apply EPA-registered borate treatment. Apply borate solution by spraying to comply with EPA-registered label.

C. Do not allow roof blocking to get wet while stored or during installation; remove and replace any roof related blocking that gets wet.

3.3 WASTE MANAGEMENT

A. Coordinate with Section 01 74 19.

1. Separate and recycle cut-offs and waste materials and material packaging in accordance with Waste Management Plan and to the maximum extent economically feasible and place in designated areas for recycling.
2. Set aside and protect materials suitable for reuse and/or remanufacturing.
3. Separate and fold up metal banding; flatten and place along with other metal scrap for recycling in designated area.

END OF SECTION 06 10 00

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SECTION 06 16 00 - SHEATHING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. The Work of this Section consists of the provision of all plant, labor, materials, equipment, testing and services necessary to complete the work of sheathing as shown on the schedules, keynotes, drawings, as specified herein, and as may be required by conditions and authorities having jurisdiction, including, but not limited to, the following:

1. Wall sheathing.
2. Roof sheathing.
3. Fasteners.
4. Sheathing joint and penetration treatment.

B. Related Requirements:

1. Division 06 "Rough Carpentry".
2. Division 07 “Thermal and Moisture Protection”
3. Division 07 “EPDM Roofing”

C. **FOR ROOF SHEATHING, REFER TO SPECIFICATION SECTION 07 53 23**.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of process and factory-fabricated product. Indicate component materials and dimensions and include construction and application details.

1. Include data for wood-preservative treatment from chemical treatment manufacturer and certification by treating plant that treated plywood complies with requirements. Indicate type of preservative used and net amount of preservative retained.
2. Include data for fire-retardant treatment from chemical treatment manufacturer and certification by treating plant that treated plywood complies with requirements. Include physical properties of treated materials.
3. For fire-retardant treatments, include physical properties of treated plywood both before and after exposure to elevated temperatures, based on testing by a qualified independent testing agency according to ASTM D 5516.
4. For products receiving a waterborne treatment, include statement that moisture content of treated materials was reduced to levels specified before shipment to Project site.
5. Include copies of warranties from chemical treatment manufacturers for each type of treatment.

1.4 INFORMATIONAL SUBMITTALS

A. Evaluation Reports: For following products, from ICC-ES:

1. Preservative-treated plywood.
2. Fire-retardant-treated plywood.

1.5 QUALITY ASSURANCE

A. Testing Agency Qualifications: For testing agency providing classification marking for fire-retardant-treated material, an inspection agency acceptable to authorities having jurisdiction that periodically performs inspections to verify that the material bearing the classification marking is representative of the material tested.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Stack panels flat with spacers beneath and between each bundle to provide air circulation. Protect sheathing from weather by covering with waterproof sheeting, securely anchored. Provide for air circulation around stacks and under coverings.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Fire-Test-Response Characteristics: For assemblies with fire-resistance ratings, provide materials and construction identical to those of assemblies tested for fire resistance per ASTM E 119 by a testing and inspecting agency acceptable to authorities having jurisdiction.

1. Fire-Resistance Ratings: Indicated by design designations from UL's "Fire Resistance Directory."

2.2 WOOD PANEL PRODUCTS

A. Certified Wood: For the following wood products, provide materials produced from wood obtained from forests certified by an FSC-accredited certification body to comply with FSC STD-01-001, "FSC Principles and Criteria for Forest Stewardship":

1. Plywood.
2. Particleboard underlayment.
3. Hardboard underlayment.

B. Plywood: Either DOC PS 1 or DOC PS 2 unless otherwise indicated.

C. Thickness: As needed to comply with requirements specified, but not less than thickness indicated.

D. Factory mark panels to indicate compliance with applicable standard.

2.3 PRESERVATIVE-TREATED PLYWOOD

A. Preservative Treatment by Pressure Process: AWPA U1; Use Category UC2for interior construction not in contact with the ground, Use Category UC3b for exterior construction not in contact with the ground, and Use Category UC4a for items in contact with the ground.

1. Preservative Chemicals: Acceptable to authorities having jurisdiction and containing no arsenic or chromium.

B. Mark plywood with appropriate classification marking of an inspection agency acceptable to authorities having jurisdiction.

C. Application: Treat items indicated on Drawings and plywood in contact with masonry or concrete or used with roofing, flashing, vapor barriers, and waterproofing.

2.4 FIRE-RETARDANT-TREATED PLYWOOD

A. General: Where fire-retardant-treated materials are indicated, use materials complying with requirements in this article that are acceptable to authorities having jurisdiction and with fire-test-response characteristics specified as determined by testing identical products per test method indicated by a qualified testing agency.

B. Fire-Retardant-Treated Plywood by Pressure Process: Products with a flame-spread index of 25 or less when tested according to ASTM E 84, and with no evidence of significant progressive combustion when the test is extended an additional 20 minutes, and with the flame front not extending more than 10.5 feet (3.2 m) beyond the centerline of the burners at any time during the test.

1. Use treatment that does not promote corrosion of metal fasteners.
2. Exterior Type: Treated materials shall comply with requirements specified above for fire-retardant-treated plywood by pressure process after being subjected to accelerated weathering according to ASTM D 2898. Use for exterior locations and where indicated.
3. Interior Type A: Treated materials shall have a moisture content of 28 percent or less when tested according to ASTM D 3201 at 92 percent relative humidity. Use where exterior type is not indicated.
4. Design Value Adjustment Factors: Treated lumber plywood shall be tested according ASTM D 5516 and design value adjustment factors shall be calculated according to ASTM D 6305. Span ratings after treatment shall be not less than span ratings specified. For roof sheathing and where high-temperature fire-retardant treatment is indicated, span ratings for temperatures up to 170 deg F (76 deg C) shall be not less than span ratings specified.

C. Kiln-dry material after treatment to a maximum moisture content of 15 percent. Do not use material that is warped or does not comply with requirements for untreated material.

D. Identify fire-retardant-treated plywood with appropriate classification marking of qualified testing agency.

E. Application: Treat plywood indicated on Drawings, and the following:

1. Roof and wall sheathing within 48 inches (1220 mm) of fire walls.
2. Roof sheathing.
   a. Refer to Specification Section 07 53 23 for Gypsum Roof Sheathing. Plywood sheathing may be considered by Architect's Roofing Consultant. Acceptance will depend on condition.

2.5 WALL SHEATHING

A. Glass-Mat Gypsum Wall Sheathing: ASTM C 1177/1177M.

1. Products: Subject to compliance with requirements, provide the following:

   a. CertainTeed Corporation; GlasRoc.
   b. G-P Gypsum Corporation; Dens-Glass Gold.
   c. National Gypsum Company; Gold Bond e(2)XP.
   d. Temple-Inland Inc.; GreenGlass
   e. United States Gypsum Co.; Securock.

2. Type and Thickness: Type X, 5/8 inch (15.9 mm) thick.
3. Size: 48 by 96 inches (1219 by 2438 mm) for vertical installation.

2.6 FASTENERS

A. General: Provide fasteners of size and type indicated that comply with requirements specified in this article for material and manufacture.

1. For roof and wall sheathing, provide fasteners with hot-dip zinc coating complying with ASTM A 153/A 153M.

B. Nails, Brads, and Staples: ASTM F 1667.

C. Power-Driven Fasteners: NES NER-272.

D. Wood Screws: ASME B18.6.1.

E. Screws for Fastening Wood Structural Panels to Cold-Formed Metal Framing: ASTM C 954, except with wafer heads and reamer wings, length as recommended by screw manufacturer for material being fastened.

1. For wall and roof sheathing panels, provide screws with organic-polymer or other corrosion-protective coating having a salt-spray resistance of more than 800 hours according to ASTM B 117.

F. Screws for Fastening Gypsum Sheathing to Cold-Formed Metal Framing: Steel drill screws, in length recommended by sheathing manufacturer for thickness of sheathing to be attached, with organic-polymer or other corrosion-protective coating having a salt-spray resistance of more than 800 hours according to ASTM B 117.

1. For steel framing less than 0.0329 inch (0.835 mm) thick, use screws that comply with ASTM C 1002.

2. For steel framing from 0.033 to 0.112 inch (0.84 to 2.84 mm) thick, use screws that comply with ASTM C 954.

2.7 SHEATHING JOINT-AND-PENETRATION TREATMENT MATERIALS

A. Sealant for Glass-Mat Gypsum Sheathing: Elastomeric, medium-modulus, neutral-curing silicone joint sealant compatible with joint substrates formed by gypsum sheathing and other materials, recommended by sheathing manufacturer for application indicated and complying with requirements for elastomeric sealants specified in Section 079200 "Joint Sealants."

2.8 MISCELLANEOUS MATERIALS

A. Adhesives for Field Gluing Panels to Framing: Formulation complying with APA AFG-01 or ASTM D 3498 that is approved for use with type of construction panel indicated by manufacturers of both adhesives and panels.

1. Adhesives shall have a VOC content of 70 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Do not use materials with defects that impair quality of sheathing or pieces that are too small to use with minimum number of joints or optimum joint arrangement. Arrange joints so that pieces do not span between fewer than three support members.

B. Cut panels at penetrations, edges, and other obstructions of work; fit tightly against abutting construction unless otherwise indicated.

C. Securely attach to substrate by fastening as indicated, complying with the following:

1. NES NER-272 for power-driven fasteners.
2. Table 2304.9.1, "Fastening Schedule," in ICC's "International Building Code."

D. Use common wire nails unless otherwise indicated. Select fasteners of size that will not fully penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections. Install fasteners without splitting wood.

E. Coordinate wall and roof sheathing installation with flashing and joint-sealant installation so these materials are installed in sequence and manner that prevent exterior moisture from passing through completed assembly.

F. Do not bridge building expansion joints; cut and space edges of panels to match spacing of structural support elements.

G. Coordinate sheathing installation with installation of materials installed over sheathing so sheathing is not exposed to precipitation or left exposed at end of the workday when rain is forecast.

3.2 GYPSUM SHEATHING INSTALLATION

A. Comply with GA-253 and with manufacturer's written instructions.

1. Fasten gypsum sheathing to cold-formed metal framing with screws.
2. Install boards with a 3/8-inch (9.5-mm) gap where non-load-bearing construction abuts structural elements.
3. Install boards with a 1/4-inch (6.4-mm) gap where they abut masonry or similar materials that might retain moisture, to prevent wicking.

B. Apply fasteners so heads bear tightly against face of sheathing, but do not cut into facing.

C. Horizontal Installation: Install sheathing with V-grooved edge down and tongue edge up. Interlock tongue with groove to bring long edges in contact with edges of adjacent boards without forcing. Abut ends of boards over centers of studs, and stagger end joints of adjacent boards not less than one stud spacing. Attach boards at perimeter and within field of board to each steel stud.

1. Space fasteners approximately 8 inches (200 mm) o.c. and set back a minimum of 3/8 inch (9.5 mm) from edges and ends of boards.

D. Vertical Installation: Install board vertical edges centered over studs. Abut ends and edges of each board with those of adjacent boards. Attach boards at perimeter and within field of board to each stud.

1. Space fasteners approximately 8 inches (200 mm) o.c. and set back a minimum of 3/8 inch (9.5 mm) from edges and ends of boards.

E. Seal sheathing joints according to sheathing manufacturer's written instructions.

1. Apply elastomeric sealant to joints and fasteners and trowel flat. Apply sufficient amount of sealant to completely cover joints and fasteners after troweling. Seal other penetrations and openings.
2. Apply glass-fiber sheathing tape to glass-mat gypsum sheathing joints and apply and trowel silicone emulsion sealant to embed entire face of tape in sealant. Apply sealant to exposed fasteners with a trowel so fasteners are completely covered. Seal other penetrations and openings.

3.3 WASTE MANAGEMENT

A. Coordinate with Section 01 74 19.
1. Separate and recycle cut-offs and waste materials and material packaging in accordance with Waste Management Plan and to the maximum extent economically feasible and place in designated areas for recycling.
2. Set aside and protect materials suitable for reuse and/or remanufacturing.
3. Separate and fold up metal banding; flatten and place along with other metal scrap for recycling in designated area.

END OF SECTION 06 16 00

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SECTION 07 13 26 SELF-ADHERING SHEET WATERPROOFING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. The work performed under this Section includes the performance criteria, materials, production, and erection of Self-Adhering Sheet Waterproofing for the project and consists of the provision of all plant, materials, labor and equipment and the like necessary and/or required for the complete execution of all Self-Adhering Sheet Waterproofing as required by schedules, keynotes and drawings, as specified herein, and as may be required by conditions and authorities having jurisdiction including, but not limited to the following:

1. Modified bituminous sheet (below grade at outside face of foundations walls),
2. Bonded HDPE sheet for vertical applications.
3. Synthetic plastic hydrophilic expanding concrete water-stop.

B. Related Requirements:
1. Division 03 Concrete
2. Division 04 Masonry
3. Division 07 Thermal and Moisture Protection
4. Division 08 Openings

1.3 PREINSTALLATION MEETINGS

A. Pre-installation Conference: Conduct conference at Project site.

1. Review weather barrier requirements including surface preparation, substrate condition and pretreatment, minimum curing period, forecasted weather conditions, special details and sheet flashings, installation procedures, testing and inspection procedures, and protection and repairs.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

1. Include construction details, material descriptions, and tested physical and performance properties.
2. Include manufacturer's written instructions for evaluating, preparing, and treating substrate.

B. Shop Drawings: Show locations and extent of sheet waterproofing and details of substrate joints and cracks, sheet flashings, penetrations, inside and outside corners, tie-ins with adjoining waterproofing, and other termination conditions.

C. Samples: For each exposed product and for each color and texture specified, including the following products:

1. Mockup for each type of sheet waterproofing.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For Installer.

B. Field quality-control reports.

C. Sample Warranties: For special warranties.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: An entity that employs installers and supervisors who are trained and approved by waterproofing manufacturer.

B. Mockups: Build mockups to verify selections made under Sample submittals and to set quality standards for installation.

1. Build for each typical waterproofing installation including accessories to demonstrate surface preparation, crack and joint treatment, corner treatment, and protection.
2. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
3. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.7 FIELD CONDITIONS

A. Environmental Limitations: Apply waterproofing within the range of ambient and substrate temperatures recommended by waterproofing manufacturer. Do not apply waterproofing to a damp or wet substrate.

1. Do not apply waterproofing in snow, rain, fog, or mist.

B. Maintain adequate ventilation during preparation and application of waterproofing materials.

1.8 WARRANTY

A. Manufacturer's Warranty: Manufacturer's standard materials-only warranty in which manufacturer agrees to furnish replacement waterproofing material for waterproofing that does not comply with requirements or that fails to remain watertight within specified warranty period.

1. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

A. Source Limitations for Waterproofing System: Obtain waterproofing materials an protection course, and molded-sheet drainage panels from single source from single manufacturer.

2.2 MANUFACTURERS

A. Basis of Design: CCW MiraDRI 860/861 Sheet Membrane Waterproofing as manufactured by Carlisle Coatings and Waterproofing Incorporated, 900 Hensley Lane, Wylie, Texas 75098, Phone: (800) 527-7092 Fax: (972) 442-0076.

B. Other products, as approved by Architect

1. CETCO Building Materials Group, a subsidiary of AMCOL International Corp;

2. Envirosheet., Meadows, W.R.,Inc; SealTight Mel-Rol.

2.3 PRODUCTS

A. Self-Adhesive Sheet Membrane Waterproofing: Shall be CCW MiraDRI 860/861consisting of a 56 mil rubberized asphalt membrane laminated to 4 mil cross-laminated polyethylene film, and shall meet or exceed the following requirements:

1. Tensile Strength: 325 psi minimum, ASTM D 412
2. Ultimate Elongation: 350% minimum, ASTM D 412
3. Puncture Resistance: 60 lbs. minimum, ASTM E 154
4. Permeance: 0.05 Perm maximum, ASTM E 96 (B)
5. Low Temperature Flexibility: Unaffected at -45^{O}F, ASTM D 1970, 1" mandrel
6. Tensile to Film: 5000 psi, ASTM D 882
7. Thickness: 60 mils, ASTM D 3767
8. Hydrostatic Head: 230 ft., ASTM D 751
9. Water Absorption: 0.1% by wt., ASTM D 570

B. For application temperatures between 25 and 65^{O}F, use CCW-861 Sheet Membrane and CCW-702. For application temperatures above 40°F use CCW MiraDRI 860 sheet membrane and CCW-702, CCW-714 primer, or CCW-AWP.

2.4 ACCESSORY PRODUCTS

A. Surface Primer: Shall be CCW-702LV Solvent-Based Contact Adhesive, 702WB or Cav-Grip. B.

B. Mastic: Shall be CCW-704 Mastic.

C. Sealants: Shall be CCW-703 Vertical Grade Liquiseal^{7} Membrane, one component approved sealant by CCW, CCW-201 two-component Polyurethane Sealant or CCW LM-800XL

D. Backing Rod: Shall be closed-cell polyethylene foam rod.

E. Protection Course: Shall be CCW Protection Board-H or CCW 300H for horizontal surfaces or CCW Protection Board-V or CCW 200V for vertical surfaces.

F. Drainage Composite: Shall be CCW MiraDRAIN 6200 as recommended by the manufacturer for each condition.

G. Perimeter Drainage System: Where required shall be CCW QuickDRAIN™.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Before any waterproofing work is started the waterproofing applicator shall thoroughly examine all surfaces for any deficiencies. Should any deficiencies exist, the architect, owner, or general contractor shall be notified in writing and corrections made.

B. Condition of Concrete Surfaces:
   1. The concrete surfaces shall be of sound structural grade and shall have a smooth finish, free of fins, ridges, protrusions, rough spalled areas, loose aggregate, exposed course aggregate, voids or entrained air holes. Rough surfaces shall receive a well-adhered parget coat.
   2. Concrete shall be cured by water curing method. Any curing compounds must be of the pure sodium silicate type and be approved by the Carlisle representative.
   3. Concrete shall be cured at least 7 days and shall be sloped for proper drainage.
   4. Voids, rock pockets and excessively rough surfaces shall be repaired with approved non- shrink grout or ground to match the unrepaired areas.
   5. Two-stage drains shall have a minimum 3 inch flange and be installed with the flange flush and level with the concrete surface.
   6. Surfaces at cold joints shall be on the same plane.

3.2 SURFACE PREPARATION

A. Clean, prepare, and treat substrates according to manufacturer's written instructions. Provide clean, dust-free, and dry substrates for waterproofing application. The concrete surface must be thoroughly clean, dry and free from any surface contaminates or cleaning residue that may harmfully affect the adhesion of the membrane.

B. Install a 3/4" face, 45 degree cant of CCW-201 Polyurethane Sealant or CCW LM-800XL at all angle changes and inside corners including penetrations through the deck, walls, curbs, etc.

C. All cracks over 1/16" in width and all moving cracks under 1/16" in width shall be routed out to 1/4" minimum in width and depth and filled flush with an approved sealant by CCW or CCW-201 polyurethane sealant.

D. All expansion joints less than 1" wide shall be cleaned, primed, fitted with a backing rod and caulked with CCW-201 Polyurethane Sealant. For larger joints, contact Carlisle representative.

E. Allow all sealant to cure at least overnight.

F. Stir Primer. Apply a thin film of primer 10" wide, centered over sealed cracks and joints, hairline cracks, and cold joints. Apply primer 8" on each side of all corners. Prime concrete around drain flanges. Allow primer to dry per manufacturer=s recommendations.

G. Install an 8" wide strip of CCW MiraDRI 860/861centered over joints and cracks. Install a 12" wide strip of CCW MiraDRI 860/861centered over the axis of all corners.

H. Terminate membrane around drains per CCW MiraDRI 860 series details. Terminate the membrane under the clamping ring. Seal all edges with CCW-704 Mastic. Do not interfere with weep holes.

3.3 MODIFIED BITUMINOUS SHEET-WATERPROOFING APPLICATION

A. Priming: Clean surfaces to remove residual dust before priming. Stir primer. Apply by spray or roller at a rate recommended by manufacturer. Allow to dry per manufacturer=s recommendation.

B. Horizontal surfaces: Install sheet membrane from low to high point, so that laps will shed water. Overlap edge seams 2½", end laps 5". Stagger end seams. Roll in place with an 18 to 24" wide, 100 lb. (min.) resilient roller. Ensure that all laps are firmly adhered and that there are no gaps or fishmouths.

C. Vertical Surfaces: Apply in lengths of 8' or less. Overlap edge seams 2½". On walls over 8' high, apply in 8' sections, starting at the lowest point with the higher section overlapping the lower section 5". Roll in place using firm pressure with a hand roller.

D. Terminations: Consult Carlisle 860-9 Details for proper terminations. Roll terminating edges firmly. Apply CCW-704 mastic to all terminations and >T= joints. Apply CCW-704 Mastic or CCW-703-V Liquiseal to laps at angle changes, extending 9" in each direction.

3.4 INTEGRITY TESTING

A. Test is required for all expanded warranties beyond the standard material warranty of horizontal applications.

B. The test can be done with Electronic Vector Mapping or flood testing. Flood testing requires 2" minimum head of water for a period of 24 hours

3.5 PROTECTION COURSE

A. VERTICAL APPLICATION: Install CCW QuickDRAIN Perimeter Drainage System as the first course of drainage composite immediately after membrane has been installed on vertical surfaces. Install CCW MiraDRAIN Drainage Composite (consult CCW for recommendation), CCW Protection Board-V Protection Course or CCW 200V on remainder. Stop drainage composite 6" below final grade level.

B. HORIZONTAL APPLICATION: Install CCW MiraDRAIN Drainage Composite (consult CCW for recommendation) or CCW Protection Board-H Protection Course or CCW 300HV immediately after flood testing on horizontal surfaces. If flood testing is delayed, install a temporary covering to protect the CCW MiraDRI 860/861membrane from damage by other trades.

3.6 PROTECTION, REPAIR, AND CLEANING

A. Do not permit foot or vehicular traffic on unprotected membrane.

B. Protect waterproofing from damage and wear during remainder of construction period from damage due to UV light, harmful weather exposures, physical abuse, and other causes. Provide temporary coverings where insulation is subject to abuse and cannot be concealed and protected by permanent construction immediately after installation.

C. Correct deficiencies in or remove waterproofing that does not comply with requirements; repair substrates, reapply waterproofing, and repair sheet flashings.

D. Clean spillage and soiling from adjacent construction using cleaning agents and procedures recommended by manufacturer of affected construction.

3.7 WASTE MANAGEMENT

A. Coordinate with Section 01 74 19.

1. Separate and recycle cut-offs and waste materials and material packaging in accordance with Waste Management Plan and to the maximum extent economically feasible and place in designated areas for recycling.
2. Set aside and protect materials suitable for reuse and/or remanufacturing.
3. Separate and fold up metal banding; flatten and place along with other metal scrap for recycling in designated area.

END OF SECTION 07 13 26

SECTION 07 21 00 - THERMAL INSULATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This section includes the performance criteria, materials, production, and erection of Thermal Insulation for the project. The work performed under this Section consists of the provision of all plant, materials, labor and equipment and the like necessary and/or required for the complete execution of all Thermal Insulation as required by the this section, schedules, keynotes and drawings including, but not limited to the following:

1. Foam-plastic board insulation.
2. Mineral-wool blanket insulation.
3. Glass fiber blanket insulation.
4. Sprayed polyurethane foam insulation

B. Related Requirements:

1. Division 04 “Masonry”
2. Division 07 “Thermal and Moisture Protection”
3. Division 09 “Finishes”

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

1.4 INFORMATIONAL SUBMITTALS

A. Product test reports.

B. Research/evaluation reports.

PART 2 - PRODUCTS

2.1 MATERIAL, GENERAL

A. Source Limitations: Obtain insulation materials from single source from single manufacturer.

B. Must meet NYS Energy Code requirements.

2.2 FOAM-PLASTIC BOARD INSULATION – ABOVE GRADE

A. **FOR USE ON ABOVE GRADE CAVITY WALLS**: Exterior Insulation: Glass-fiber-reinforced enhanced polyisocyanurate foam core sheathing faced with nominal 4 mil embossed blue acrylic-coated aluminum on one side and 1.25 mil embossed aluminum on the other side, complying with ASTM C1289 and meeting the following physical properties:
1. ASTM C1289 Type 1, Class 2
2. Compressive Strength (ASTM D1621): 25 psi, minimum.
3. Aged Thermal Resistance (ASTM C518, measured at Mean Temp of 75F): [R-6.5 at 1 inch] [RSI 1.06 per 25 mm] of thickness [with 15 year thermal warranty]
4. Flexural Strength (ASTM C203): Minimum 55 psi.
5. Water Absorption (ASTM C209): Maximum.0.1 percent by volume.
6. Water Vapor Permeance (ASTM E96): <0.03 perms.
7. Maximum Use Temperature: 250 degrees F.
8. Panel Size: 4’-0” wide x 8’-0” long, square edge, shiplap
9. Thickness and Stabilized R-Value: Nominal 2 inch thickness, R-13.0
10. Wall assembly must comply with NFPA 285 - 2012

B. Manufacturers subject to compliance with requirements, provide products by one of the following:
1. Basis of Design: Dow Chemical Company “THERMAX ci Exterior Insulation.
2. Other comparable products as approved by Architect

C. Accessories:
1. Fasteners: Provide insulated sheathing manufacturer’s recommended polymer or other corrosion protective coated steel screw fasteners for anchoring sheathing to metal wall framing. Fastener length and size based on wall sheathing thickness.
a. Basis of Design: Rodenhouse, Inc. 2 inch diameter “Thermal-Grip” CI prong washer with “Grip-Deck” ceramic- coated, self-drilling screw.
b.Use the Grip-Lok auto-feed fastening system for high speed application

D. Flashing: Provide insulation manufacturer’s recommended board treatment for sealing joints, seams, and veneer tie penetrations through the insulation layer.
a. Acceptable Products:
1) Dow Chemical Company LIQUIDARMOR-CM commercial liquid flashing and sealant.
2) Dow Chemical Company “WEATHERMATE Straight Flashing 4 inch”width with butyl rubber adhesive

E. Wall Opening Flashing: Provide insulated sheathing manufacturer’s recommended flashing sealing window and door wall openings.
a. Acceptable Products:
1) Dow Chemical Company LIQUIDARMOR-CM commercial liquid flashing and sealant
2) Dow Chemical Company “WEATHERMATE Straight Flashing 6 inch and 9 inch”, with butyl rubber adhesive, at straight opening heads, jambs and sills
3) When greater widths are required for through wall flashings butyl rubber adhesive is recommended.

F. Penetration Filler: Provide insulated sheathing manufacturer’s recommended polyurethane foam for sealing penetrations of insulated sheathing.

a. Acceptable Products:
1) Dow Chemical Company “GREAT STUFF PRO Gaps & Cracks” single Component polyurethane insulating foam sealant.
2) Dow Chemical Company “GREAT STUFF PRO Window & Door” single-component polyurethane low-pressure foam sealant

G. Gap Air Infiltration Filler: Two Component, Quick Cure Polyurethane Foam:
1. Acceptable Products:
a) Dow Chemical Company FROTH-PAK Foam Insulation two component, quick-cure polyurethane foam
i) NFPA 286 Approval for Exposed use to the interior of the building without the need for a15-min thermal barrier
ii) ASTM E-84 Class A

H. Flexible polyethylene foam gasket strip to reduce air infiltration between a concrete foundation and sill plate.
a. Acceptable Products: The Dow Chemical Company “STYROFOAM Sill Seal Foam Gasket

2.3 FOAM -PLASTIC BOARD INSULATION – BELOW GRADE

A. **FOR USE BELOW GRADE AND UNDER SLAB:** Rigid closed-cell Extruded-Polystyrene Board Insulation for Perimeter Foundation Wall Installations

1. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
   a. Basis of Design: Dow Chemical Company Perimate Square Edge
   b. DiversiFoam Products.
   c. Owens Corning.
   d. Pactiv Building Products.
2. Wall assembly must comply with NFPA 285 - 2012.
3. ASTM C578-92 Type IV, 25 psi (ASTM D 1621-73)
4. Density 1.6 lb/cu. Ft. min
5. Thickness 2” unless otherwise indicated
6. UL classification: D369.
7. Thermal resistance: 5-year aged R-values of 5.4 and 5.0 min., $^{o}F\text{-}ft^2\text{-}h/Btu^2$/inch at $40^{o}F$ and $75^{o}F$ respectively (ASTM C 518-91).
8. Water absorption: Max. 0.3% by volume (ASTM C 272-91).

2.4 MINERAL-WOOL BOARD INSULATION

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Fibrex Insulations Inc.
2. Isolatek International.
3. Owens Corning.
4. Roxul Inc.
5. Thermafiber.

B. Unfaced, Mineral-Wool Board Insulation (at cavity wall edge of slab, fire-safing conditions): ASTM C 612; with maximum flame-spread and smoke-developed indexes of 15 and zero, respectively, per ASTM E 84; passing ASTM E 136 for combustion characteristics.

C. Foil-faced, Mineral-Wool Board Insulation (at storefront wall edge of slab and spandrel panel locations): ASTM C612; faced on one side with foil-scrim or foil-scrim-polyethylene vapor retarder; with maximum flame-spread and smoke – developed indexes of 25 and 5, respectively, per ASTM E84.

2.5 GLASS-FIBER BLANKET INSULATION

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. CertainTeed Corporation.
2. Guardian Building Products, Inc.
3. Johns Manville.
4. Knauf Insulation.
5. Owens Corning.

B. Unfaced, Glass-Fiber Blanket Insulation: ASTM C 665, Type I; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively, per ASTM E 84; passing ASTM E 136 for combustion characteristics.

2.6 MINERAL-WOOL BLANKET INSULATION

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Fibrex Insulations Inc.
2. Owens Corning.
3. Roxul Inc.
4. Thermafiber.

B. Unfaced, Mineral-Wool Blanket Insulation: ASTM C 665, Type I (blankets without membrane facing); consisting of fibers; with maximum flame-spread and smoke-developed indexes of 25 and 50, respectively, per ASTM E 84; passing ASTM E 136 for combustion characteristics.

2.7 SPRAYED POLYURETHANE FOAM INSULATION

A. Spray Polyurethane Foam Installer shall be certified by spray foam manufacturer.

B. Pre-Installation Meeting to review spray polyurethane foam methods and procedures related to application, including manufacturer’s installation guidelines.

C. Mock-up illustrating typical conditions. Conduct the following tests on the mockup panel:
1. Core density
2. Adhesion between transition sheet membrane and substrate
3. Cohesion or adhesion between sprayed insulation and substrate

D. Ventilate area to receive insulation by introducing fresh air and exhausting air continuously during any 24 hours after application to maintain non-toxic, unpolluted, safe working condition.

E. Protect workers as recommended by insulation manufacturer.

F. Protect adjacent surfaces and equipment from damage by overspray, fall-out and dusting of insulation materials.

G. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Basis of Design: Dow Chemical Styrofoam Spray Polyurethane Foam Insulation (MX Series)
2. Certa Spray Closed Cell Foam Insulation by CertainTeed
3. Icynene ProSeal MD-C-200v3
4. Substitutions: Approved equal

H. Spray Polyurethane Foam: Two-component spray polyurethane cellular plastic foam, complying with the following methods and meeting the following physical properties:

1. Core Density (ASTM D1622): Minimum 2pcf
2. Thermal Resistance (ASTM C518): 140degreeF/90day Aged R-Value, measured at 75F mean Temp: Minimum R6.0/inch.
3. Flame Spread (ASTM E84, Class A): 25 or less.
4. Smoke Developed (ASTM E84, Class A): 450 or less.
5. Compressive Strength minimum (ASTM D1621, 10% parallel to rise): (20 psi)(182 kPa).
6. Closed Cell Content (ASTM D2856): minimum 95 percent.
7. Water Absorption by Volume maximum. (ASTM D2842): 2.5 percent.
8. Wall assembly must comply with NFPA 285 - 2012

I. For oily steel surface like Z-bar, roof deck, curtain wall pan, aluminum tube or PVC pipes cleaning, etching or a primer may be needed before spraying polyurethane foam. Water Vapor Permeability maximum. (ASTM E96): [2.5 perm-inches] [3.6 ng/(Pa.s.m)].

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Comply with insulation manufacturer's written instructions applicable to products and applications indicated.

B. Install insulation that is undamaged, dry, and unsoiled and that has not been left exposed to ice, rain, or snow at any time.

C. Extend insulation to envelop entire area to be insulated. Cut and fit tightly around obstructions and fill voids with insulation. Remove projections that interfere with placement.

D. Provide sizes to fit applications indicated and selected from manufacturer's standard thicknesses, widths, and lengths. Apply single layer of insulation units to produce thickness indicated unless multiple layers are otherwise shown or required to make up total thickness.

3.2 INSTALLATION OF BELOW-GRADE INSULATION

A. On vertical surfaces, set insulation units using manufacturer's recommended adhesive according to manufacturer's written instructions.

1. If not otherwise indicated, extend insulation a minimum of 36 inches (915 mm**)** below exterior grade line.

B. On horizontal surfaces, loosely lay insulation units according to manufacturer's written instructions. Stagger end joints and tightly abut insulation units.

1. If not otherwise indicated, extend insulation a minimum of 36 inches (915 mm**)** in from exterior walls.

C. Cut insulation to fit snugly around pilasters, projections, curves and irregularities on the wall surface. Fill voids with insulation.

3.3 INSTALLATION OF CAVITY-WALL INSULATION

A. Foam-Plastic Board Insulation: Install 2” diameter daubs of adhesive spaced approximately 12 inches (610 mm) o.c. both ways on inside face, and as recommended by manufacturer. Fit courses of insulation between wall ties and other obstructions, with edges butted tightly in both directions. Press units firmly against inside substrates.

1. Supplement adhesive attachment of insulation by securing boards with two-piece wall ties designed for this purpose and specified in Section 042000 "Unit Masonry."

2. Wedge insulation from outside wythe of construction with small fragments of masonry materials spaced 24" o.c. both ways.

3. Make insulation continuous. Fill all voids

3.4 INSTALLATION OF INSULATION FOR FRAMED CONSTRUCTION

A. Apply insulation units to substrates by method indicated, complying with manufacturer's written instructions. If no specific method is indicated, bond units to substrate with adhesive or use mechanical anchorage to provide permanent placement and support of units.

B. Foam-Plastic Board Insulation: Seal joints between units by applying adhesive, mastic, or sealant to edges of each unit to form a tight seal as units are shoved into place. Fill voids in completed installation with adhesive, mastic, or sealant as recommended by insulation manufacturer.

C. Glass-Fiber or Mineral-Wool Blanket Insulation: Install in cavities formed by framing members according to the following requirements:

1. Use insulation widths and lengths that fill the cavities formed by framing members. If more than one length is required to fill the cavities, provide lengths that will produce a snug fit between ends.
2. Place insulation in cavities formed by framing members to produce a friction fit between edges of insulation and adjoining framing members.
3. Maintain 3-inch (76-mm) clearance of insulation around recessed lighting fixtures not rated for or protected from contact with insulation.
4. For metal-framed wall cavities where cavity heights exceed 96 inches (2438 mm), support unfaced blankets mechanically and support faced blankets by taping flanges of insulation to flanges of metal studs.
5. Vapor-Retarder-Faced Blankets: Tape joints and ruptures in vapor-retarder facings, and seal each continuous area of insulation to ensure airtight installation.

    a. Exterior Walls: Set units with facing placed toward as indicated on Drawings.
    b. Interior Walls: Set units with facing placed as indicated on Drawings.

D. Miscellaneous Voids: Install insulation in miscellaneous voids and cavity spaces where required to prevent gaps in insulation using the following materials:

1. Loose-Fill Insulation: Compact to approximately 40 percent of normal maximum volume equaling a density of approximately 2.5 lb/cu. ft. (40 kg/cu. m).
2. Spray Polyurethane Insulation: Apply according to manufacturer's written instructions.

3.5 INSTALLATION OF INSULATION FOR CONCRETE SUBSTRATES

A. Install board insulation on concrete substrates by adhesively attached, spindle-type insulation anchors as follows:

1. Fasten insulation anchors to concrete substrates with insulation anchor adhesive according to anchor manufacturer's written instructions. Space anchors according to insulation manufacturer's written instructions for insulation type, thickness, and application indicated.
2. Apply insulation standoffs to each spindle to create cavity width indicated between concrete substrate and insulation.
3. After adhesive has dried, install board insulation by pressing insulation into position over spindles and securing it tightly in place with insulation-retaining washers, taking care not to compress insulation below indicated thickness.
4. Where insulation will not be covered by other building materials, apply capped washers to tips of spindles.

3.6 INSTALLATION OF STOREFRONT-WALL INSULATION

A. Install board insulation in storefront-wall construction where indicated on Drawings according to curtain-wall manufacturer's written instructions.

1. Hold insulation in place by securing metal clips and straps or integral pockets within window frames, spaced at intervals recommended in writing by insulation manufacturer to hold insulation securely in place without touching spandrel glass. Maintain cavity width of dimension indicated between insulation and glass.
2. Install insulation where it contacts perimeter fire-containment system to prevent insulation from bowing under pressure from perimeter fire-containment system.

3.7 INSTALLATION OF VAPOR RETARDERS

A. Place vapor retarders on side of construction indicated on Drawings. Extend vapor retarders to extremities of areas to protect from vapor transmission. Secure vapor retarders in place with adhesives or other anchorage system as indicated. Extend vapor retarders to cover miscellaneous voids in insulated substrates, including those filled with loose-fiber insulation.

B. Seal vertical joints in vapor retarders over framing by lapping no fewer than two studs.

1. Fasten vapor retarders to wood framing at top, end, and bottom edges; at perimeter of wall openings; and at lap joints. Space fasteners 16 inches (406 mm) o.c.
2. Before installing vapor retarders, apply urethane sealant to flanges of metal framing including runner tracks, metal studs, and framing around door and window openings. Seal overlapping joints in vapor retarders with vapor-retarder tape according to vapor-retarder manufacturer's written instructions. Seal butt joints with vapor-retarder tape. Locate all joints over framing members or other solid substrates.
3. Firmly attach vapor retarders to metal framing and solid substrates with vapor-retarder fasteners as recommended by vapor-retarder manufacturer.

C. Seal joints caused by pipes, conduits, electrical boxes, and similar items penetrating vapor retarders with vapor-retarder tape to create an airtight seal between penetrating objects and vapor retarders.

D. Repair tears or punctures in vapor retarders immediately before concealment by other work. Cover with vapor-retarder tape or another layer of vapor retarders.

3.8 INSTALLATION OF FOAM INSULATION

A. Verify existing conditions are ready to receive work.

B. Ensure surfaces are free of frost, oil, grease, oxidation, dirt, loose paint, loose scale, or other deleterious material that would impair bond.

C. Ensure that items required to penetrate sprayed insulation are installed prior to installation of sprayed insulation.

D. Clean area of work prior to application of sprayed insulation. Beginning of application implies acceptance of existing conditions.

E. Mask and cover adjacent areas to protect from overspray.

F. Apply any required primers for special conditions as recommended by manufacturer. Prepare surfaces within the exterior soffit at the pool to receive sprayed foam insulation where indicated.

G. Cover wide joints with transition sheet membrane as specified in Section 07 27 50.

H. Seal any voids between the existing precast concrete T’s and adjoining building components.

I. Must be installed by manufacturer’s Approved Applicator at time of bidding.

J. Apply SPF in accordance with ASTM C1029 and manufacturer's installation guidelines: complying with preparation methods.

K. Apply sprayed foam insulation in consecutive layers of not less than ½ inch and not more than 2 inch thick each to achieve total thickness required (total thickness as indicated per application) for a minimum R value of 25. For light gage steel and extruded polystyrene board first layer should be a skim coat of (12 mm) (½ inch) before adding extra layers. Ensure the substrate is well supported.

L. Avoid formation of sub-layer air pockets.

M. Apply product in overlapping layers, so as to obtain a smooth, uniform surface.

N. Maintain 3 inch clearance around chimneys, heating vents, steam pipes, recessed lighting fixtures and other heat sources.

O. Do not apply Product to inside of exit openings or electrical junction boxes.

P. Conduct field inspection and testing in accordance with manufacturers and general contractors instructions.

Q. Test completed application daily for core density and cohesion/adhesion to substrate. Record results daily in daily work records.

R. Site Tolerances: Maximum Variation in Applied Thickness: minus 1/4 inch, plus 5/8 inch.

S. Remove overspray from non-prescribed surfaces without causing damage to surfaces.

T. Remove protective covers from adjacent surfaces.

U. Protect completed installation from damage Repair as required.

V. Any open flame or welding shall not be in contact with the Spray Polyurethane Foam.

W. All plastic insulation must be protected from interior occupancy space by an approved thermal barrier to meet the requirements of local Building Codes.

3.9 WASTE MANAGEMENT

A. Coordinate with Section 01 74 19.
   1. Separate and recycle cut-offs and waste materials and material packaging in accordance with Waste Management Plan and to the maximum extent economically feasible and place in designated areas for recycling.
   2. Set aside and protect materials suitable for reuse and/or remanufacturing.
   3. Separate and fold up metal banding; flatten and place along with other metal scrap for recycling in designated area.

END OF SECTION 07 21 00

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SECTION 07 27 13 – FIRE RESISTANT, SELF-ADHERING MEMBRANE AIR & VAPOR BARRIERS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SECTION INCLUDES

A. A self-adhered membrane and accessory products of fire-resistant composition for use as an air and vapor barrier in exterior walls.

B. Materials and installation to bridge and seal the following air leakage pathways and gaps:
1. Connections of the walls to the roof air barrier
2. Connections of the walls to the foundations
3. Seismic and expansion joints
4. Openings and penetrations of window frames, door frames, store front, curtain wall
5. Barrier pre-cast concrete and other envelope systems
6. Door frames Piping, conduit, duct and similar penetrations
7. Masonry ties, screws, bolts and similar penetrations
8. All other air leakage pathways through the walls

1.3 RELATED SECTIONS

A. Section 03 30 00 Cast-in-place Concrete

B. Section 04 20 00 Unit Masonry

C. Section 07 21 00 Thermal Insulation

D. Section 07 53 23 EPDM Roofing

E. Section 07 921 00 Joint Sealants

F. Section 08 12 55 Fiberglass Reinforced Polyester Doors

G. Section 08 41 13 Aluminum Framed entrances and storefronts

H. Section 09 29 00 Gypsum Board

1.4 REFERENCES

A. American Association of Textile Chemists and Colorists (AATCC) Test Method 127. “Water Resistance – Hydrostatic Pressure Test”

B. American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) Standard 90.1-2010 “Energy Standard for Buildings Except Low-Rise Residential Buildings”

C. ASTM C 920 Standard Specification for Elastomeric Joint Sealants

D. ASTM C 1305 Standard Test Method for Crack Bridging Ability of Liquid-Applied Waterproofing Membrane

E. ASTM D 882 Standard Test Methods for Vulcanized Rubber and Thermoplastic Elastomers – Tension

F. ASTM D 1876 Standard Test Method for Peel Resistance of Adhesive

G. ASTM D 1970 Standard Specification for Self-Adhering Polymer Modified Bituminous Sheet Materials Used as Steep slope roofing Underlayment for Ice Dam Protection

H. ASTM D 4073 Standard Test Method for Tensile-Tear Strength of Bituminous Roofing Membranes

I. ASTM D 4541 Standard Test Method for Pull-Off Strength of Coatings Using Portable Adhesion Testers

J. ASTM E 84 Standard Test Method for Surface Burning Characteristics of Building Materials

K. ASTM E 96 Standard Test Methods for Water Vapor Transmission of Materials.

L. ASTM E 154 Standard Test Methods for Water Vapor Retarders used in Contact with Earth under Concrete Slabs, on Walls or as Ground Cover

M. ASTM E 783 Standard Test Method for Field Measurement of Air Leakage Through Installed Exterior Windows and Doors

N. ASTM E 1105 Standard Test Method for Field Determination of Water Penetration of Installed Exterior Windows, Skylights, Doors, and Curtain Walls by Uniform or Cyclic Static Air Pressure Difference.

O. ASTM E 1354 Standard Test Method for Heat and Visible Smoke Release Rates for Materials and Products Using an Oxygen Consumption Calorimeter

P. ASTM E 2178 Standard Test Method for Air Permeance of Building Materials

Q. ASTM E 2357 Standard Test Method for Determining Air Leakage of Air Barrier Assemblies

R. National Fire Protection Association (NFPA) 285 Standard Fire Test Method for Evaluation of Fire Propagation Characteristics of Exterior Non-Load-Bearing Wall Assemblies Containing Combustible Components

1.5 MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1. Review air-barrier requirements and installation, special details, mockups, air-leakage and bond testing, air-barrier protection, and work scheduling that covers air barriers.

1.6 SUBMITTALS

A. Product Data: For each type of product.

1. Include manufacturer's written instructions for evaluating, preparing, and treating substrate; technical data; and tested physical and performance properties of products.

B. At bid submission, provide evidence to the Architect of installer qualification by the air & vapor barrier manufacturer.

C. Shop drawings showing locations and extent of air & vapor barrier and details of all typical conditions.

D. Manufacturer’s list and description of wall assemblies, incorporating product, tested per NFPA 285

E. Manufacturer's technical data sheets and material safety data sheets for product and accessories.

F. Manufacturer's installation instructions.

G. Certification of compatibility by manufacturer, listing all materials on the project with which the product and accessories may come into contact.

H. Sample of product and transition membrane, minimum 2 inch by 3 inch size.

1.7 PERFORMANCE REQUIREMENTS

A. Installed product and accessories constitute a continuous air barrier, as described in ASHRAE Standard 90.1-2010 Section 5.4.3.1

B. Installed product and accessories shall perform as a liquid water drainage plane flashed to discharge to the exterior any incidental condensation or water penetration.

C. Installed product and accessories shall exhibit an air leakage rate, infiltration and exfiltration modes, measured after pressure cycling, not to exceed 0.2 $L/s*m^2$ at 75 Pa (0.040 CFM/ft^2 at 1.57 PSF) according to ASTM E 2357.

D. Installed product and accessories shall perform as a vapor barrier, installed on the predominantly warm side of the insulation.

E. For Type I, II, III and IV construction: Installed product and accessories shall be evaluated to NFPA 285 in wall assemblies of Project.

F. Product shall consist of nominal 0.040 inch (40 mils) thickness composite membrane consisting of an aluminum-faced cross-laminated high density polyethylene sheet laminated with a styrene-butadiene-styrene modified asphalt adhesive.

G. Product shall meet the following requirements:

REQUIREMENT	RESULT	TEST METHOD
Air Permeance	Not more than 0.02 L/s*m^2 at 75 Pa (0.004 CFM/ft^2 at 1.57 PSF)	ASTM E-2178
Tensile Strength	Not less than 40 lb_f per inch	ASTM D-882
Puncture Resistance	Not less than 50 lb_f	ASTM E 154
Tear Initiation and Propagation	Not less than 30 lb_f, machine direction and cross direction	ASTM D 4073
Low Temperature Flexibility	No cracking at minus 20 degrees F, 1 inch mandrel	ASTM D 1970
Fastener Sealability	No water leaking through fastener penetration after 24 h.	ASTM D 1970
Water Resistance	Membrane specimen including a lap shall resist a 55 cm (22 inch) column of water for 5 hours, no leaking or wet through.	AATCC-127, modified static head generated with 5”diameter PVC pipe sealed to specimen
Pull Adhesion	Not less than 16 lb_f per square inch (or report value at substrate failure) on glass-faced gypsum sheathing and concrete masonry unit, substrate prepared with contact adhesive	ASTM D 4541, modified 4 inch puck
Lap Adhesion	Not less than 5 lb_f per inch of width	ASTM D 1876
Water Vapor Permeance	Not more than 0.1 Perm	ASTM E-96, Method B
Surface Burning Characteristics.	Flame Spread Index: Not more than 25 Smoke Generation Index: Not more than 450	ASTM E 84, sample tested at full coverage, cement board substrate, including surface preparation
Measurement of Heat Release Rate by Cone Calorimeter	Effective Heat of Combustion of 0 MJ/kg or less Peak heat release rate of 6.67 kW/m^2 or less Total heat release rate of 1.1 MJ/m^2 or less	ASTM E 1354, membrane applied to glass-faced gypsum sheathing, including surface preparation. 50 kW/m^2 heat flux.

1.8 QUALITY ASSURANCE

A. Installer Qualifications: Shall be experienced in applying the same or similar materials and shall be specifically approved in writing by Manufacturer.

B. Single-Source Responsibility: Obtain product and accessories from single manufacturer.

C. Product and Accessories shall comply with all state and local regulations controlling use of volatile organic compounds (VOCs).

D. Pre-Installation Meeting: Convene one week prior to commencing Work of this Section.

E. Field-Constructed Mock-Ups: Prior to installation on Project, apply Product and Accessories on mock-up to verify details under shop drawing submittals, to demonstrate tie-ins with adjoining construction and other termination conditions and to become familiar with properties of materials in application:

F. Construct typical exterior wall panel, 8 feet long by 8 feet wide, incorporating back-up wall, cladding, window and doorframe and sill, insulation, flashing; illustrating interface of materials and seals

G. Test mock-up in accordance with ASTM E 783 and ASTM E1105 for air and water infiltration

H. Cooperate and coordinate with the Owner's inspection and testing agency. Do not cover any installed Product unless it has been inspected, tested and approved.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Remove and replace liquid materials that cannot be applied within their stated shelf life.

B. Refer to current Product MSDS for proper storage and handling.

C. Deliver materials to the job site in undamaged and original packaging indicating the name of the manufacturer and product.

D. Store roll materials on end in original packaging. Protect rolls from direct sunlight until ready for use.

E. Store air barrier membranes, adhesives and primers at temperatures of 40 degrees

F. Protect stored materials from direct sunlight.

G. Keep solvent away from flame or excessive heat.

1.10 FIELD CONDITIONS

A. Do not apply product or accessories during rain or accumulating snowfall.

B. Apply product and accessories within approved ambient and substrate temperature range stated in manufacturer’s literature.

C. Do not apply product or accessories over incompatible materials.

D. Observe safety and environmental measures indicated in manufacturer’s MSDS, and mandated by federal, state and local regulations.

1.11 WARRANTY

A. System Warranty: Provide the manufacturer's five (5) year system warranty, including the primary air/vapor barrier and installed accessory sealant and membrane materials which fail to achieve air tight and watertight seal, exhibit loss of adhesion or cohesion, or do not cure.

PART 2 - PRODUCTS

2.1 FIRE-RESISTANT, SELF-ADHERING MEMBRANE AIR & VAPOR BARRIERS

A. **TO BE INSTALLED FOR ALL ABOVE-GRADE WALLS OVER TOP OF THE DENSGLASS GOLD SHEATHING**

B. Basis of Design: Fire Resist™ 705 FR-A by Carlisle Coatings & Waterproofing, Incorporated (CCW). 900 Hensley Lane, Wylie, TX 75098. Phone 1-800-527-7092. Website http://www.carlisleccw.com

C. Other comparable manufacturers and products, as approved by Architect.

2.2 ACCESSORIES

A. Provide from same manufacturer as air barrier membrane

B. Detail Flashing: Similar composition to air barrier membrane. Factory slit to convenient sizes.
1. CCW: Fire Resist 705 FR-A
2. Others: As specified by air barrier membrane manufacturer

C. Contact Adhesive: Liquid or spray-applied for preparing surfaces accepting air barrier membrane
1. CCW: CCW-702 Solvent-Based , CCW-702 LV VOC Compliant, Solvent-Based, CCW-702 WB Water-Based or CAV-GRIP™ Aerosol Spray
2. Others: As specified by air barrier membrane manufacturer

D. Detail Mastic: 1-part material for sealing details. Installation over air barrier membrane.
1. CCW: Universal Single Ply Sealant
2. Others: As specified by air barrier membrane manufacturer

E. Transition Membrane: Tough, elastomeric sheet capable of bridging a 1" gap. Minimum 60 mils thickness
1. CCW: SURE-SEAL Pressure-Sensitive Elastoform.
2. Others: As specified by air barrier membrane manufacturer

F. Fill Compound: 2-part chemical cure sealant, compatible with adhesive side of air barrier membrane.
1. CCW: CCW-703 V Modified polyurethane, 2-part or CCW-201 Polyurethane, 2-part
2. Others: As specified by air barrier membrane manufacturer

2.3 RELATED MATERIALS

A. Polyurethane Sealant: used for sealing membrane surface defects, penetrations and terminations :
1. Approved by CCW: Sonneborn NP-1, Dymonic FC, S-M 7100 Permathane Pro-Installer by Schnee-Morehead Div, ITW or Xtra-Bond 7500 TX by Premiere Industrial Supply
2. Others: As specified by air barrier membrane manufacturer

B. Silicone Sealant: used for sealing fenestration to air barrier membrane, surface defects and penetrations
1. Approved by CCW: Dow-Corning 758, 790, 791 or 795 or Pecora AVB Silicone, 890, 891 or 895 or GE Silpruf or Silpruf LM
2. Others: As specified by air barrier membrane manufacturer

C. Polyurethane Foam Sealant: used for sealing gaps around fenestration and other penetrations
1. Approved by CCW: Great Stuff by Dow Chemical Company, FireBlock Gun Foam by TVM Building Products or Fireblock Foam Sealant by FOMO
2. Others: As specified by air barrier membrane manufacturer

D. Insulation Adhesive: used for bonding foam board insulation to air barrier membrane
1. Approved by CCW for polyisocyanurate insulation: LM 800 XL or CAV-GRIP Spray Contact Adhesive by Carlisle Coatings & Waterproofing Incorporated
2. Approved by CCW for extruded polystyrene insulation: CAV-GRIP Spray Contact Adhesive by CCW, QB-300 Multi-Pupose Construction Adhesive by OSI or PL-300 VOC Foamboard Adhesive by Loctite
3. Others: As specified by air barrier membrane manufacturer

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions affecting installation of the air & vapor barrier and accessory products for compliance with requirements. Verify that surfaces and conditions are suitable prior to commencing Work of this section. Do not proceed with installation until unsatisfactory conditions have been corrected.

B. Verify that wall assemblies are dried in, such that water intrusion will not occur from above, behind or around the air barrier installation.

C. Concrete shall be cured for a minimum of seven days. It shall be smooth, with sharp protrusions such as form joints ground flush. Honeycomb and holes/cracks exceeding ¼ inch across shall be filled with grout or mortar.

D. Surfaces shall be sound, dry and free of oil, grease, dirt, excess mortar or other contaminants.

E. Surfaces shall be supported and flush at joints without large voids or sharp protrusions.

F. Mortar joints shall be struck flush and shall be free of voids exceeding ¼ inch across. Mortar droppings shall be removed from brick ties and all other surfaces accepting air barrier.

G. Sheathing boards shall be flush at joints, with gaps between boards according to building code and sheathing manufacturer's requirements. Sheathing boards shall also be securely fastened to the structure with proper fastener type, technique and spacing according to building code and sheathing manufacturer's requirements. Sheathing boards shall be repaired or replaced if inspection reveals moisture damage, mechanical damage or if sheathing boards have exceeded the exposure duration or exposure conditions as required by the sheathing manufacturer.

H. Plywood, OSB, lumber or pressure-treated wood moisture content, measured with a wood moisture meter in the core of the substrate, shall be below 20%.

I. Inform Architect [Consultant] [Owner] in writing of
1. Cracks in concrete and masonry.
2. Gaps or obstructions such as steel beams, angles, plates and projections which cannot be spanned or covered by Product or Accessories.
3. Anticipated problems applying Product and Accessories over substrate.

3.2 SURFACE PREPARATION

A. Concrete masonry unit (CMU) wall shall be prepared as follows to accept the air & vapor barrier:
1. Surfaces shall be free of contaminants such as grease, oil and wax on surfaces to receive membrane
2. The CMU surfaces shall be free from projections.
3. Strike all mortar joints flush to the face of the concrete block.
4. Fill all voids and holes greater than ¼ inch across at any point with mortar, sealant or other approved fill material.
5. Surface irregularities exceeding ¼ inch in height or sharp to touch shall be ground flush or made smooth.
6. Fill around all penetrations with mortar, sealant or other approved fill material and strike flush.
7. If the surfaces cannot be made smooth to the satisfaction of the Architect, it will be the responsibility of the trade to alternatively apply a parge coat (typically one part cement to three parts sand) over the entire surface to receive Air & Vapor Barrier Membrane
8. Remove mortar droppings on brick ties, shelf angles, brick shelves or other horizontal obstructions.

B. Fill cracks, gaps and joints exceeding ¼ inch width with fill compound or paintable sealant.

C. Fill rough gaps around pipe, conduit and similar penetrations with mortar, non-shrink grout, fill compound or polyurethane foam sealant shaved flush.

D. Apply a ¾ inch cant of fill compound at the intersection of the base of the wall and the footing.

3.3 INSTALLATION

A. Apply product over opaque wall surfaces as indicated in Project.

B. Allow sealants used during surface preparation to cure fully before applying product.

C. Apply contact adhesive to all surfaces accepting product, according to manufacturer's instructions.

D. Apply product to prepared surfaces according to manufacturer's instructions and drawings.

E. Sequence installation to provide shingled laps. Lap neighboring sheets 2 inches minimum.

F. Install detail flashing or transition membrane according to manufacturer's drawings and instructions at expansion joints, seismic joints, mechanical/electrical penetrations and similar conditions.

G. Install detail mastic, polyurethane sealant or silicone sealant covering non-water shedding laps, penetrations and similar surface defects.

3.4 SCHEDULE

A. Wall substrates and roof or temporary roof shall be in place, effectively enclosing interior space, before proceeding with air barrier installation.

B. Seal penetrations made through installed product according to manufacturer's instructions and drawings.

C. Seal fenestration to product with detail membrane, transition membrane, polyurethane sealant, silicone sealant or polyurethane foam sealant according to Project drawings

D. Through-wall flashing may be installed before or after product. Seal termination of metal through-wall flashing to product with 6 inch wide detail flashing.

E. Cladding shall be installed after product.

F. Rigid or semi-rigid insulation installed over product shall be attached with insulation adhesive and mechanical fastening according to insulation manufacturer and air barrier manufacturer's instructions.

G. Sequence Work to enable air barrier continuity at wall-to-foundation, shelf angle, wall-to-roof, fenestration, different wall assemblies and other conditions providing challenges to air barrier continuity.

3.5 REPAIR AND PROTECTION

A. Protect from damage during application and remainder of construction period.

B. Inspect before covering. Repair or replace damaged material according to manufacturer's literature.

C. Product and accessories are not designed for permanent exposure. Cover with insulation or exterior cladding as soon as schedule allows.

D. Outdoor exposure of installed product and accessories shall not exceed 180 days.

3.6 WASTE MANAGEMENT

A. Coordinate with Section 01 74 19.

1. Separate and recycle cut-offs and waste materials and material packaging in accordance with Waste Management Plan and to the maximum extent economically feasible and place in designated areas for recycling.
2. Set aside and protect materials suitable for reuse and/or remanufacturing.
3. Separate and fold up metal banding; flatten and place along with other metal scrap for recycling in designated area.

END OF SECTION 07 27 13

SECTION 07 53 23 - EPDM ROOFING

PART 1 - GENERAL

1.1 SUMMARY

A. The Work of this Section consists of the provision of all plant, labor, materials, equipment, testing and services necessary to complete the work of EPDM Roofing, as shown on the schedules, keynotes, drawings, as specified herein, and as may be required by conditions and authorities having jurisdiction, including, but not limited to, the following:

1. Remove and legally dispose of existing gravel surfacing, roofing, insulation, the vapor barrier, underlayment, wood blocking, and flashing. Clean all residual material from the surface of the deck, and the flutes of the steel deck.

2. Install a new fully adhered unreinforced 60 mil thick EPDM roofing system, including a vapor barrier on concrete deck areas, insulation, a cover board, flashings, stripping and related accessories.

3. Provide any miscellaneous mechanical, electrical, hoisting and other work needed, and remove, adjust, modify, reset and reconnect existing roof-mounted and roof-penetrating devices.

4. Install new flashings at the roof drains, and all roof-mounted and roof-penetrating equipment.

5. Disconnect and remove abandoned mechanical equipment and curbs, and infill the roof deck.

6. Refasten loose sections of existing metal deck with self drilling / tapping screws as Base Bid work.

7. Alert the Architect and Owner and replace deteriorated sections of existing metal deck as extra work, after receiving direction from them.

B. Related Requirements

1. Rough Carpentry - Section 06 10 00
2. Sheet Metal Flashing & Specialties - Section 07 62 00
3. Roof Accessories - Section 07 72 00

1.2 CODE APPROVAL REQUIREMENTS

A. Install roofing and insulation system components to meet the following minimum requirements:

1. New York State Uniform Fire Prevention and Building Code.
2. Underwriters Laboratories Inc. Class A external fire rating for Roof Covering Materials.
3. ASCE 7-16 minimum uplift resistance, calculated using a safety factor of 2

B. Provide written certification from the Manufacturer, before beginning work, to confirm the roofing system meets these requirements.

1.3 QUALITY ASSURANCE

A. Installer Qualifications:

1. A firm (Installer) with at least 5 continuous years experience performing EPDM roofing work similar to that required for this project, employing personnel skilled in the specified work.
   a. The Installer shall directly employ the personnel performing the work of this section.
   b. The Installer shall have a full time supervisor/foreman on the roof when roofing work is in progress. The Supervisor shall have a minimum of 5 years experience in EPDM roofing work similar in nature and scope to this project, and speak fluent English.
2. The Installer shall provide a reference list of at least three projects of comparable size and similar design, within a fifty mile radius of this project, which may be observed by representatives of the Owner:
   a. The reference list shall include the completion date, a description of the work performed, the Owner's name - contact person - phone number and address and the Architect's name - contact person and phone number.
   b. The Installer shall provide the reference list prior to contract award if requested.
3. The Installer shall be acceptable to or licensed by the Manufacturer of the primary roofing materials, and provide written certification from the Manufacturer to confirm this prior to award if requested.

B. Material Quality: Obtain each product, including the vapor barrier, insulation, cover board, EPDM roofing and flashing, and the cements, primers and adhesives from a single Manufacturer, which has manufactured the same products in the United States of America for not less than 5 continuous years.

C. Pre-Work Conference: Meet at the project site approximately 10 days prior to starting work, with the Architect, Owner and other representatives concerned about the work, to discuss the following:

1. How the existing building will be kept watertight as old roofing is removed and the work progresses.
2. How new roofing will be coordinated with the installation of related building components, including the drains and mechanical equipment, the vapor barrier, insulation, cover board, flashings and other items to provide a watertight installation.
3. Generally accepted industry practice, the Manufacturer's instructions for handling and installing his products, and specified work requirements.
4. The condition of the existing and new substrates (decks), curbs, penetrations and other preparatory work needed.
5. Submittals, both completed and yet to be completed.
6. The construction schedule, forecast weather, availability of materials, personnel, equipment and facilities needed to proceed and complete the work on schedule.
7. A schedule for Manufacturer and Architect inspections.

1.4 SUBMITTALS

A. Submit the following items far enough in advance to obtain approval prior to performing any work:

1. Written certification from the Manufacturer which states that the Installer is acceptable or licensed to install the specified roofing; if not previously provided.
2. Manufacturer's installation instructions and technical data sheets for each component of the roofing system. Material sample submittals are not needed or wanted.
3. Samples of the Contractor's and Manufacturer's guarantee/warranty forms.
4. Technical submittals shall be prepared and made by the firm that will perform the actual work.

5. Payment requisitions will not be processed until all submittals are received and approved.

1.5 JOB CONDITIONS (CAUTIONS & WARNINGS)

A. Do not use oil base or plastic roof cement with EPDM roofing. Do not allow waste products, (petroleum grease or oil, solvents, vegetable or mineral oil, animal fat) or direct steam venting to come in contact with any roofing, insulation or flashing product. Do not expose EPDM roofing and accessories to a temperature in excess of 175 degrees Fahrenheit.

B. Splice cleaner, primer, cements and bonding adhesives are flammable. Do not breathe vapors or use near fire or flame or in a confined or unventilated area. Dispense only from a UL listed or approved safety can.

C. Remove empty adhesive and solvent containers and contaminated rags from the roof and legally dispose of them daily.

D. Do not apply adhesives adjacent to open ventilation system louvers, or windows. Temporarily cover the louvers and windows with 6 mil fire retardant polyethylene and prevent adhesive odors from entering the building. Remove temporary covers at the end of each days work.

1.6 PRODUCT DELIVERY, STORAGE AND HANDLING

A. Deliver material to the site in the Manufacturer's original and unopened packaging, bearing labels which identify the products and Manufacturers, with the labels intact and legible.

B. Cover all stored materials, except rolls of EPDM and sealed cans of adhesives, with watertight tarpaulins installed immediately upon delivery.

C. Immediately remove any insulation or cover board which gets wet from the job site.

D. Do not overload the structure when storing materials on the roof.

E. Store and install all material within the Manufacturer’s recommended temperature range.

1.7 GUARANTEE/WARRANTY

A. Provide a written Manufacturer's "Full System Guarantee/Warranty" which warrants that the roofing system, including the insulation, cover board, EPDM roofing and flashings, will remain in a watertight condition for a twenty year period beginning upon Final Completion.

1. Guarantee/Warranty coverage shall remain in effect for gust wind speeds up to 72 miles per hour, measured at ground level at the site.

2. Guarantee and Warranty coverage shall have no dollar value limit.

B. Provide a Contractor's written Guarantee which warrants that all work will remain free of material and workmanship defects and in a watertight condition for a five year period beginning upon Final Completion:

1. Defective work includes but is not limited to the following types of failure: leakage, adhesive separation, delamination, lifting, loosening, splitting, cracking, and undue expansion.

2. The Contractor's Guarantee shall provide that the Contractor will make the repairs and modifications necessary to enable the work to perform as warranted at his own expense:

3. The Guarantee shall include the removal and replacement of items or materials installed as part of the original work, if removal is needed to affect guaranteed repairs.

C. Manufacturer's and Contractor's Guarantees/Warranties shall be issued no more than 30 days before the satisfactory completion of punch list work.

D. Guarantees/Warranties shall include the removal and replacement of items or materials installed as part of the original work, if removal is needed to make warranty repairs.

E. Guarantee/Warranty coverage may be cancelled, for the affected portion of the roof, if the work is damaged by winds in excess of 72 mph, by hail, lightning, insects or animals, by failure of the structural substrate, by exposure to harmful chemicals, by other trades on the roof, or by vandalism, or if the Owner fails to maintain the roof in accordance with, or makes roof alterations contrary to, the Manufacturer’s printed recommendations.

F. Guarantee/Warranty coverage shall be reinstated, for the remainder of the original period; if the Owner restores the roof to the condition it was in prior to the damage occurring.

G. The Contractor’s Surety Company may add a rider to the Performance Bond which clarifies that Bond Coverage expires two years after Final Completion; i.e., Performance Bond Coverage does not run for the entire five year term of the Contractor’s Guarantee.

1.8 SUBSTITUTIONS

A. The following factors will be considered when evaluating a possible alternative to the roofing system specified:

1. The wording and intent of the warranty to be issued.
2. The financial status, numbers of years in business, and stability of the entity that will issue the warranty.
3. A reference list of at least five completed similar projects of comparable size, with a successful functional history of at least five years, within an approximate fifty mile radius of the Project.
4. Technical aspects of the system, especially relating to durability, serviceability and performance.
5. The capacity and history of the Manufacturer in providing technical response, on-site inspections and assistance.
6. The availability and prior experience of local authorized applicators, within a 50 mile radius of the project, to install and maintain the proposed alternate system.
7. The willingness and history of the Manufacturer in responding to warranty claims previously made by the Owner, Architect or any Consultant involved in this project.

PART 2 - PRODUCTS

2.1 GENERAL

A. EPDM roof system components are specified as products of Firestone Building Products Company to establish a standard of quality. Equal products and systems from Carlisle SynTec will be accepted.

B. Primary products required for this project include:

1. Vapor barrier
2. Roof insulation
3. Cover board
4. EPDM roofing
5. Primers and adhesives
6. Sealants
7. EPDM flashing
8. Fasteners

2.2 VAPOR BARIER

A. 154 mm thick smooth surfaced APP modified bitumen sheet suitable for torch application over ASTM D 41, Type II asphalt primer applied on concrete deck surfaces.

2.3 INSULATION:

A. Isocyanurate – Rigid cellular polyisocyanurate boards with fibrous felt/fiberglass mat facers, minimum compressive strength 20 psi, meeting ASTM C1289-01, Type II, Class1, Grade 2, as manufactured by Firestone under the trade name of “ISO 95+ Isocyanurate Insulation”.

1. Flat insulation sloped as shown on the roof plan.
2. Crickets sloping 1/4 and 1/2 inch per foot.

2.4 GYPSUM COVER BOARD:

A. 1/4 inch thick fire resistant gypsum board decking with inorganic glass mat facers and a water resistant core, formulated in 48 x 96 inch square edge boards, UL Class A, meeting ASTM C-1177, manufactured under the trade name Dens-Deck.

2.5 INSULATION ADHESIVE:

A. Two component low rise polyurethane foam adhesive, installed with a mixing extruding Pace-Cart dispenser, or with a pleural heated foam rig, Firestone I.S.O. Adhesive intended for application at the temperatures that will be encountered.

B. Do not use twin cartridge adhesive except on very small isolated sections of roof.

2.6 EPDM

A. Unreinforced 60 mils thick, fire retardant, EPDM (Ethylene Propylene Diene Monomer) sheet membrane conforming to the following minimum physical properties.

PROPERTY	TEST METHOD	SPECIFICATION
Color	—	Gray/Black
Tensile Strength	ASTM D-412	1305 psi min.
Elongation	ASTM D-412	300% min
Tear Strength	ASTM D-624	150 lb/in min
Ozone Resistance	ASTM D-1149	No cracks,7 days/100 pphm/100ºF/50% strain
Heat Aging	ASTM D-573	1200 psi min@ 200% elongation/4 wks/240ºF
Brittleness Temperature	ASTM D-746	-49ºF
Water Vapor Permanence	ASTM E-96	2.0 perm max
Thickness	ASTM D-412	60 mils plus/minus 6 mils
Fire Retardant		UL Class A

2.7 RELATED MATERIALS

A. Cleaners, adhesives, sealants, caulking and fasteners furnished by the EPDM system Manufacturer and as listed below. Use low VOC adhesives and cleaners as required by regulations in effect at the time of application.

1. Stripping: 90 mil thick 5 inch and 9 inch wide self adhering flashing, consisting of 45 mils of semi-cured EPDM factory laminated to 45 mils of cured seaming tape.

2. Bonding Adhesive: High strength contact adhesive.

3. Splice Adhesive: High strength synthetic polymer based contact cement formulated specifically to splice EPDM sheets.

4. Lap Sealant: EPDM rubber based gun grade sealant.

5. Water Block Seal: One component low viscosity butyl rubber sealant.

6. Pre-Molded Pipe Flashing: Pressure sensitive prefabricated flashings with pre-applied adhesive.

7. Pourable Sealer: Two component, solvent free polyurethane based sealant.

8. Reinforced Perimeter Fastening Strips: .030 inch thick reinforced cured EPDM.

9. Seam Tape Primer: Synthetic rubber polymer based primer designed to clean and prime seam tape spice areas prior to installing the tape.

10. Seam Splice Tape: Nominal 30 mil thick cured polymer self adhesive tape with release paper carrier, 6 inches wide.

11. Plates and Bars: Galvanized and corrosion resistant specialty products.

12. Fasteners: #14 Fluorocarbon polymer coated heavy duty screws.

PART 3 - EXECUTION

3.1 GENERAL

A. Construct the new roofing system in a watertight, workmanlike manner, meeting the guarantee requirements specified herein; in strict accordance with the drawings and in conformance with the Manufacturer's requirements, except as enhanced in this specification.

B. Perform work in areas with roof mounted mechanical equipment, so the work coincides with equipment shutdown periods and does not affect building occupants. Temporarily cover and protect equipment openings, and windows adjoining the work area, with 6 mil fire retardant polyethylene, so dirt, dust and odors do not enter the equipment or building. Remove covers at the end of each workday, and as soon as roof work is complete.

C. Clean the surface on which roofing system components will be applied, of all laitance, dirt, oil, grease or other foreign matter which would in any way affect the quality of the installation.

D. Install roof system components on dry surfaces only. Do not install any items when weather conditions and outside temperatures are not suitable in accordance with the Manufacturer's recommendations.

E. Complete all work in sequence as quickly as possible so that as small an area as practicable is in the process of construction at any one time. Complete the entire area of work begun each day, the same day, and make all exposed edges watertight at the end of each day's work.

3.2 SUBSTRATE INSPECTION

A. Remove existing roofing, insulation, flashings, underlayment material and the vapor barrier as indicated, and carefully check the existing deck. To be an acceptable surface for the new roofing system, it is to be well secured to the underlying structure and not rotted or otherwise deteriorated.

B. Immediately notify the Architect and Owner by telephone and in writing if defects in the substrate are discovered.

C. Maintain the building watertight in the interim, but do not proceed with the installation of new roofing until defects have been corrected.

3.3 DECK REPAIR & REPLACEMENT

A. Refasten loose sections of steel deck using self drilling / tapping screws as Base Bid work

B. Steel deck replacement:

1. Alert the Owner and Architect if deteriorated steel decking is encountered, maintain the building watertight in the interim, and obtain direction before continuing with the work.
2. Remove damage decking across the entire width of individual sections by a length equal to a minimum of two joist bays.
3. Install new deck of thickness, gauge and cross section configuration to match existing. New steel deck shall be galvanized.
4. Fasten new deck to the joists with #12 screws spaced 6 inches on center in each joist.
5. Stitch side seams of steel deck with #10 screws spaced 24 inches apart.

3.4 PRIMER & VAPOR BARRIER

A. Install asphalt primer on concrete deck surfaces and allow it to dry before installing the vapor barrier.

1. Apply the primer only after new concrete has cured for at least 21 days, and when the concrete is dry.
2. Do not thin the primer.

B. Torch apply the vapor barrier to fully adhere it to the primer deck surface. Overlap end laps 6 inches, overlap ply lines 3 inches, and turn the vapor barrier up at perimeter blocking, curbs and change in elevation walls.

C. Post an English speaking fire watch employee, with a cell phone, on the roof when torch work occurs, and for 1 hour after it finishes each day.

3.5 INSULATION AND COVER BOARD

A. Install tapered insulation neatly cut at all miters and transitions. Do not lace corner boards.

B. Install insulation with joints offset between rows and layers a minimum of 12 inches. Cut insulation to fit neatly at penetrations and joints. Fill any gap which is greater than 1/4 inch.

C. Fasten all layers of insulation only to the top flute of steel decks with screws and discs which penetrate through the deck a minimum of 3/4 inch and a maximum of 1-1/2 inches.

1. Install 16 fasteners per 4 by 8 foot insulation board in the field of the roof.
2. Install 28 fasteners per 4 by 8 foot insulation board in 8 foot wide perimeter zones.
3. Install 32 fasteners per 4 by 8 foot insulation board in 8 foot square corner zones.

D. Install all layers of insulation over the vapor barrier on concrete decks in low rise polyurethane foam adhesive.

E. Install gypsum cover board over the insulation using foam adhesive, with joints offset between the insulation and cover board a minimum of 12 inches. Cut gypsum cover board to fit neatly at penetrations and joints. Fill any gap which is greater than 1/4 inch.

F. Install foam adhesive in accordance with the Manufacturer's recommendations and to achieve the specified minimum uplift resistance.

1. Install 1/2 inch diameter adhesive beads spaced 12 inches on center in the field of the roof.
2. Install 1/2 inch diameter adhesive beads spaced 6 inches on center in 8 foot wide perimeter zones.
3. Install 1/2 inch diameter adhesive beads spaced 4 inches on center in 8 foot square corner zones.
4. Place 5 gallon pails half full of gravel or concrete on the insulation and gypsum cover board to hold it firmly in position while the low rise foam adhesive sets. Position the pails no more than 24 inches apart in all directions.

3.6 EPDM

A. Position the EPDM roofing over the substrate without stretching it, and allow it to relax approximately one hour before adhering it to the substrate or forming the seams.

B. Position adjoining sheets in the same manner lapping the edges about 7 inches.

C. Fully adhere the EPDM to the substrate with bonding adhesive.

1. Open each can of adhesive and stir it with an electric paddle mixer for at least 5 minutes before applying the adhesive. Re-stir adhesive that isn't used within two hours of initial mixing.
2. Do not punch holes in cans of adhesive and use them in a "Better Spreader" without first opening the cans to mix them.
3. Replace used roller covers each day; discard covers after each days use.
4. Allow bonding adhesive to dry to the touch before joining the EPDM to the substrate.
5. Roll the EPDM onto the dried bonding adhesive and immediately rub it vigorously with a soft bristle broom to ensure complete adhesion.

D. **Roofing installed over improperly applied adhesive, and roofing installed with blisters, ridges, mole runs and similar deficiencies shall be removed and replaced at the Contractor's expense.**

3.7 SPLICING

A. Form all EPDM roof splices with 6 inch wide seam tape.

1. Fold the top sheet back about 7 inches. Clean both mating surfaces using clean rags with splice wash.
2. Scrub a smooth coat of QuickPrime to both mating surfaces, with long strokes obtaining complete coverage, using approximately 1 gallon per 225 square. Do not allow the QuickPrime to glop, streak or puddle. Allow it to dry to the touch before installing the seam tape.
3. Install the seam tape on the bottom sheet of EPDM roofing, using guide marks to position it so 1/8 inch minimum and 1/2 inch maximum will be exposed out of the seam when the seam is complete.
4. Roll and allow the top sheet to fall freely into place without stretching or wrinkling it.
5. Pull the splice tape release paper from within the seam area and neatly mate the seam using hand pressure to rub the membrane together.
6. Immediately roll the splice with a 2 inch wide roller, using positive pressure, toward the outer edge of splice.
7. Install uncured EPDM surface patches with rounded corners, over all T-Seam intersections.
8. Install 5 inch uncured EPDM stripping over any seam where the tape is exposed less than 1/8 inch or more than 1/2 inch.

3.8 PERIMETER FASTENING

A. Secure the EPDM roof at the perimeter of each section, and at eaves, penetrations, expansion joints and slope changes greater than 1 inch in 12 inches. Secure discs through the membrane or adhere it to continuous reinforced EPDM fastening strips. Fasten the discs and EPDM fastening strips 12 inches on center.

3.9 FLASHING

A. Utilized cured EPDM for all flashings; utilize self-curing EPDM at corners and angle changes only where required by the Manufacturer.

1. Form flashing splices, and the splice between the flashing and main roof sheet with 7 inch seam tape.
2. Adhere the flashing to vertical surfaces with bonding adhesive.
3. Fasten the top edge of all flashings, positioning the fasteners 12 inches on center, to be covered by the cap flashing.

B. Install premolded pipe flashings wherever possible. Where premolded pipe flashings cannot be installed, use field wrapped flashings. Install pitch pockets as a last resort.

C. Remove existing pipe flashings and Kennedy type couplings and extend the vent pipes to finish a minimum of 18 inches above the roof surface.

3.10 MISCELLANEOUS

A. Provide any miscellaneous roofing, flashing, caulking, and metal work needed to leave the work complete and entirely watertight, neatly and carefully executed in a thorough and workmanlike manner.

B. Mechanical and electrical work shall be performed by mechanics skilled and licensed in these trades. Provide new material, couplings, transition pieces, blocking, fasteners and the like needed to complete the work.

3.11 CLEANING, PROTECTION AND WATERTIGHTNESS

A. Conduct an inspection of the interior and exterior of the existing building and grounds, and submit a written report with photos to document any pre-existing leakage or damage, prior to performing any work.

B. The Owner will conduct a similar inspection at the completion of the work, and the Contractor will be charged for all leakage or damage which was not documented in the Contractor's report, or repaired to the Owners satisfaction at the Contractor's expense.

C. Provide any equipment, material and labor necessary to protect the site, the building, its contents and occupants, pedestrians, and surrounding landscaped and paved areas from damage due to the construction work or from inclement weather during construction.

D. Do not perform work during inclement weather. Protect incomplete work and the building from damage by inclement weather which may occur unexpectedly. Make all work areas watertight at the end of each day's work.

E. Frequently clean up all refuse, rubbish, scrap materials and debris so the work site presents a neat, orderly and workmanlike appearance.

F. Carefully clean the roof to remove all residual debris when work is complete. After cleaning the roof, thoroughly clean all drain sumps, drain lines, leader heads and leaders. Do not allow debris to enter the drainage system.

3.12 ROOF INSPECTIONS BY MANUFACTURER

A. Arrange for the roofing Manufacturer, or his authorized representative, to make a minimum of five inspections in accordance with the following schedule and submit a written report of each inspection to the Architect within one week following each inspection:

1. First inspection during the first two days of new roof installation.
2. Second inspection when roofing is approximately one third complete.
3. Third inspection when roofing is approximately two thirds complete.
4. Fourth inspection when all roofing and flashings are installed.
5. Final inspection at the completion of all work.

B. Provide 48 hours advance written notice to the Architect, so he may have a representative attend the inspections.

C. Payment requisitions will not be reviewed nor approved until the inspection reports are received.

3.13 WASTE MANAGEMENT

A. Coordinate with Section 01 74 19

1. Separate and recycle cut-offs and waste materials and material packaging in accordance with the Waste Management Plan and to the maximum extent economically feasible and place in designated areas for recycling.
2. Set aside and protect materials suitable for reuse and/or remanufacturing until removed from the site.
3. Separate and fold up metal banding; flatten and place along with other metal scrap for recycling in designated area.

END OF SECTION 07 52 23

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SECTION 07 62 00 - SHEET METAL FLASHINGS & SPECIALTIES

PART 1 - GENERAL

1.1 SUMMARY

A. The Work of this Section consists of the provision of all plant, labor, materials, equipment, testing and services necessary to complete the work of Sheet Metal Flashings & Specialties, shown on the schedules, keynotes, drawings, as specified herein, and as may be required by conditions and authorities having jurisdiction, including, but not limited to, the following:

1. Sheet metal work that is compatible with the roofing systems specified, including cap and through wall flashings, hook strips, fascia, gravel stops, copings, gutters, leaders, valleys, flat and standing seam panels, ridges and miscellaneous flashings.

B. Related Requirements

1. Rough Carpentry - Section 06 10 00
2. EPDM Roofing - Section 07 53 23
3. Roof Accessories - Section 07 20 00

1.2 CODE APPROVAL REQUIREMENTS

A. Fabricate and install roof perimeter flashings that comply with the NY State Uniform Fire Prevention and Building Code and ANSI/SPRI ES-1 requirements.

1.3 QUALITY ASSURANCE

A. Installer Qualifications:

1. A firm (Installer) with not less than 5 continuous years experience performing Sheet Metal work similar to that required for this project, employing personnel skilled in the specified work.
    a. The Installer shall directly employ the personnel performing the work of this section.
    b. The Installer shall have a full time supervisor/foreman on the roof when work is in progress. The Supervisor shall have a minimum of 5 years experience in work similar in nature and scope to this project and speak fluent English.
2. The Installer shall provide a reference list of at least three projects of comparable size and similar design, within a fifty mile radius of this project, which may be observed by representatives of the Owner:
    a. The reference list shall include at a minimum, the completion date, a description of the work performed, the Owner’s name - contact person - phone number and address and the Architect’s name - contact person and phone number.
    b. The Installer shall provide the reference list prior to contract award if requested.

B. Material Quality:

1. Obtain each product from a single Manufacturer which has manufactured the same product in the United States of America for not less than 5 continuous years.
2. Obtain copper and pre-finished sheet metal items from the same mill run to maintain consistent color hue and surface finish.

C. Pre-Work Conference: Meet at the project site approximately one week prior to starting work, with the Architect, Owner and other representatives concerned about the work, to discuss the following:

1. How the existing building will be kept watertight as work progresses.
2. How sheet metal work will be coordinated with the installation of the vapor barrier, thermal barrier, insulation, cover board, roofing, flashings, roof accessories and other items to provide a watertight installation.
3. Generally accepted industry practice, the Manufacturer's instructions for handling and installing his products, and specified work requirements.
4. The condition of the substrate (deck), curbs, penetrations and other preparatory work needed.
5. Submittals, both completed and yet to be completed.
6. The construction schedule, forecast weather, availability of materials, personnel, equipment and facilities needed to proceed and complete the work on schedule.
7. A schedule for Manufacturer and Architect inspections.

1.4 SUBMITTALS

A. Submit the following items far enough in advance to obtain approval prior to performing any work:

1. Pre-work site and existing building inspection report with photos to document conditions before work starts.
2. Shop drawings, or 2 foot long samples, for each sheet metal item, to show how it relates and fits on adjoining masonry and wood blocking assemblies, and with the roof, stripping, and flashings.
3. A 6 inch square piece of each type of sheet metal to show surface finish, texture and color.
4. Literature for each type of sheet metal, sealant and fastener, including the Manufacturer's instructions which show how to install the items, and form and seal joints.
5. A sample of the Contractor’s guarantee form.

B. Technical submittals shall be prepared and made by the firm that will perform the actual work.

C. Payment requisitions will not be processed until all submittals are received and approved.

1.5 JOB MOCK-UPS

A. After the submittals are approved, prepare in actual job locations, mock-ups of cap and through wall flashings, hook strips, drip edges, fascia, gravel stops, and all other items of sheet metal and related work, for inspection and approval by the Architect.

B. Construct each mock-up of two full lengths of metal, fastened, connected and stripped-in to the related roofing system, to show the following:

1. Type, gauge, color, cross-sectional dimensions and shape, and joint and mitering techniques.
2. Related masonry work, wood blocking, and the attachment techniques and fasteners for all wood and metal components.
3. Other sheet metal related materials and their installation techniques to fully define the detailing of each mock-up.

C. The purpose of each mock-up is to establish the minimum standard of materials and workmanship, and to assure that completed work which matches the mock-ups will be fully functional and serve the purpose for it has been designed.

D. Approved mock-ups may be left in place and incorporated into the permanent installation. Rejected mock-ups shall be removed and replaced until approved.
E. Do not purchase or fabricate sheet metal items until mock-up installation, inspection and approval are completed and approval is documented in writing.

1.6 GUARANTEE

A. Provide a Contractor's written Guarantee which warrants that all work will remain free of material and workmanship defects and in a watertight condition for a five year period beginning upon Final Completion:

1. Defective work includes but is not limited to the following types of failure: leakage, adhesive separation, delamination, lifting, loosening, splitting, cracking, and undue expansion.
2. The Contractor's Guarantee shall provide that the Contractor will make the repairs and modifications necessary to enable the work to perform as warranted at his own expense.
3. The Guarantee shall include the removal and replacement of items or materials installed as part of the original work, if removal is needed to affect guaranteed repairs.

B. The Guarantee shall be issued no more than 30 days before the satisfactory completion of punch list work.

C. The Contractor’s Surety Company may add a rider to the Performance Bond which clarifies that Bond Coverage expires two years after Final Completion; i.e., Performance Bond Coverage does not run for the entire five year term of the Contractor’s Guarantee.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Copper sheet: ASTM B370, 99.0 % pure copper, thickness 16 ounces per square foot. Use copper for all metal items not otherwise indicated

B. Zinc-Tin coated copper: copper sheet, coated on both sides, with a smooth uniform coating of zinc and tin, base metal weight 16 ounces per square foot, cold rolled temper, available as FreedomGray Copper by Revere.

C. Solder:

1. 50-50 tin and lead for plain copper, supplied in one pound bars with the alloy mixture stamped into the bar by the Manufacturer.
2. Lead free / or pure tin solder for zinc-tin coated copper, Number 497 by Johnson Manufacturing.

D. Flux:

1. Water-Soluble Liquid Flux, Kester #3345 for iron soldering of brass and copper.
2. Tin-bearing flux such as “Flux-N-Solder E127 with pure tin” by Johnson Manufacturing.

E. Factory Fabricated Roof Edge System: Extruded aluminum anchor bars secured with #9 stainless steel screws spaced 12 inches on center and .050 inch thick Kynar 500 prefinished aluminum trim covers, independently tested to comply with the ANSI / SPRI ES-1 Wind Design Guide.

F. Fasteners: stainless steel, or to match the sheet metal being fastened.

G. Glass Cloth: open mesh glass fabric coated on each side with plasticized asphalt as manufactured by Karnak Corporation or equal.

H. Asphalt cement: Federal Specification SS-C-153B, Type 1, asbestos free grade.

I. Exterior mounted leaders and straps: .027 inch thick rectangular corrugated aluminum leaders factory finished with baked acrylic enamel. Fasten each leader with 1/16 inch thick by 1 inch wide straps spaced 7 feet on center.

J. Sealant: High performance, solvent free, formulated and moisture curing silyl-terminated polyether sealant, ASTM C-920, Type S, Grade NS, Class 25, NovaLink construction sealant by ChemLink, color as selected.

PART 3 - EXECUTION

3.1 GENERAL

A. Accurately reproduce the details and design shown, and form profiles, bends and intersections, sharp, true and even. Fabricate sheet metal in the shop whenever possible, and form joints, laps, splices and connections to shed water and condensation in the direction of flow.

B. Provide any miscellaneous flashing and sheet metal work not shown on the drawings but otherwise needed to leave the project complete and entirely watertight, neatly and carefully executed in a thorough and workmanlike manner.

3.2 INSPECTION

A. Examine surfaces to receive work of this section and report any defects to the Owner and Architect.

3.3 INSTALLATION

A. Fabricate and install copper work in accordance with the current edition of "Copper and Common Sense" as published by the Revere Copper and Brass Company, unless otherwise indicated.

1. Form all joints, except loose locked sealant filled expansion joints, to overlap 2 inches.
2. Secure the joints with rivets spaced 1 inch on center positioned about 1/2 inch from the top edge of the joint, then sweat solder the joint.
3. Use solder only to fill and seal the joint, not for mechanical strength. Form soldered joints continuous, strong and free from defects, with well heated soldering irons. Do not use open flame torches for soldering.
4. Clean soldered joints daily, immediately after soldering, by washing them with soap and water applied with a soft bristle brush, then rinsing with clear water.

B. Securely fasten and anchor all work, and make provisions for thermal expansion. Submit details of expansion joints for approval. Install fasteners through one edge of metal only, use a hook strip on the other edge.

C. Use stainless steel pin Zamac type nail-in fasteners, or stainless steel screws and washers with neoprene inserts where fasteners will be exposed.

3.4 CAP FLASHINGS

A. Install new copper cap flashings built into masonry walls properly joined to all related materials in a watertight manner.

1. Solder all joints in the new cap flashing, except form 2 inch wide flat locked sealant filled expansion joints a maximum of 32 feet on center.
2. Form the flashing to turn up 2 inches inside the wall and finish with a hem on the bottom exposed edge.
3. Fasten the top edge of the cap flashing to the back up masonry 12 inches on center.
4. Install the new cap flashing under flexible type wall flashings where possible. Where it is not possible to lap the new cap flashing under an existing wall flashing, install a ply of glass cloth set in and coated with asphalt cement to connect the new cap flashing to the existing wall flashing.
5. In the absence of an existing wall flashing, or at a solid masonry wall, turn up the new cap flashing 2 inches behind the first wythe of masonry.
6. Install new cap flashings where shown on the drawings, and at a height of 10 to 12 inches above the roof surface.

B. Install new aluminum cap flashings on existing and new skylight and equipment curbs.

1. Form the cap flashing to extend 2 inches under the equipment or skylight, 4 inches over the base flashing, and finish with a 1/2 inch hem on the bottom edge.
2. Install a 1/2 inch thick by 2 inch wide continuous foam gasket between the cap flashing and mechanical equipment or skylight. Do not set the equipment or skylight in sealant.
3. Secure the equipment or skylight to the curb with stainless steel screws spaced 12 inches on center.

3.5 DRIP EDGES

A. Fabricate drip edges to extend 1-1/2 inches past the roof edge, and turn down to ensure water cannot track back and run down the fascia. Secure the drip edge with roofing nails along the top edge, spaced 4 inches apart along the raw metal edge. Form joints in the drip edge with 6 inch wide concealed under plates which duplicate the profile of the drip edge. Set the underplates in a full bed of sealant.

3.6 HOOK STRIPS

A. Form continuous hook strips with locks that engage the superimposed trim piece a minimum of 3/4 inch, and to cover the entire underside edge of the wood blocking and neatly extend to the building wall.

B. Fasten hook strips along their bottom edge, just above the 45 degree bend, with nails spaced 4 inches on center into underlying wood blocking; Zamac type nail-in type fasteners spaced 8 inches on center into masonry surfaces, or screws spaced 8 inches on-center into sheet metal surfaces.

3.7 ROOF EDGE SYSTEM

A. Install a factory fabricated roof edge system on all roof eaves.

1. Extend the EPDM roof down the face of the fascia trim, so it stops just short of the bottom edge of the anchor bar.
2. Install the anchor bar straight, level and true, set in a full bed of sealant, and secure the bar with #9 by 2 inch long stainless steel screws spaced no more than 12 inches apart.
3. Pre-drill screw holes in the underlying metal fascia trim, and where extra fasteners are needed at corners and special conditions.

4. Install color matching under plates at each joint in the roof edge trim; set the under plates in a full bed of sealant.

3.8 CLEANING, PROTECTION AND WATERTIGHTNESS

A. Conduct an inspection of the interior and exterior of the building and grounds, and submit a written report with photos to document any pre-existing leakage or damage, prior to performing any work.

B. The Owner will conduct a similar inspection at the completion of the work, and the Contractor will be charged for all leakage or damage which was not documented in the Contractor's report, or repaired to the Owners satisfaction at the Contractor's expense.

C. Provide any equipment, material and labor necessary to protect the site, the building, its contents and occupants, pedestrians, and surrounding landscaped and paved areas from damage due to the construction work or from inclement weather during construction.

D. Do not perform work during inclement weather. Protect incomplete work and the building from damage by inclement weather which may occur unexpectedly. Make all work areas watertight at the end of each day's work.

E. Frequently clean up all refuse, rubbish, scrap materials and debris so the work site presents a neat, orderly and workmanlike appearance.

F. Carefully clean the roof to remove all residual debris when work is complete. After cleaning the roof, thoroughly clean all drain sumps, drain lines, leader heads and leaders. Do not allow debris to enter the drainage system.

3.9 WASTE MANAGEMENT

A. Coordinate with Section 01 74 19

1. Separate and recycle cut-offs and waste materials and material packaging in accordance with the Waste Management Plan and to the maximum extent economically feasible and place in designated areas for recycling.
2. Set aside and protect materials suitable for reuse and/or remanufacturing until removed from the site.
3. Separate and fold up metal banding; flatten and place along with other metal scrap for recycling in designated area.

END OF SECTION 07 62 00

SECTION 07 84 13 - PENETRATION FIRESTOPPING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This section includes the performance criteria, materials, production, and erection of penetration firestopping for the project. The work performed under this Section consists of the provision of all plant, materials, labor and equipment and the like necessary and/or required for the complete execution of all penetration firestopping as required by the this section, schedules.

1. Penetrations in fire-resistance-rated walls.
2. Penetrations in horizontal assemblies.
3. Penetrations in smoke barriers.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

B. Product Schedule: For each penetration firestopping system. Include location and design designation of qualified testing and inspecting agency.

1. Where Project conditions require modification to a qualified testing and inspecting agency's illustration for a particular penetration firestopping condition, submit illustration, with modifications marked, approved by penetration firestopping manufacturer's fire-protection engineer as an engineering judgment or equivalent fire-resistance-rated assembly.

1.4 INFORMATIONAL SUBMITTALS

A. Qualification Data: For qualified Installer.

B. Installer Certificates: From Installer indicating penetration firestopping has been installed in compliance with requirements and manufacturer's written recommendations.

C. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, for penetration firestopping.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: A firm that has been approved by FM Global according to FM Global 4991, "Approval of Firestop Contractors," or been evaluated by UL and found to comply with its "Qualified Firestop Contractor Program Requirements."

B. Installer Qualifications: A firm experienced in installing penetration firestopping similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful performance. Qualifications include having the necessary experience, staff, and training to install manufacturer's products per specified requirements. Manufacturer's willingness to sell its penetration firestopping products to Contractor or to Installer engaged by Contractor does not in itself confer qualification on buyer.

C. Fire-Test-Response Characteristics: Penetration firestopping shall comply with the following requirements:

1. Penetration firestopping tests are performed by a qualified testing agency acceptable to authorities having jurisdiction.
2. Penetration firestopping is identical to those tested per testing standard referenced in "Penetration Firestopping" Article. Provide rated systems complying with the following requirements:

    a. Penetration firestopping products bear classification marking of qualified testing and inspecting agency.
    b. Classification markings on penetration firestopping correspond to designations listed by the following:

        1) UL in its "Fire Resistance Directory."

D. Preinstallation Conference: Conduct conference at Project site.

1.6 REFERENCED STANDARDS

A. American Society for Testing and Materials (ASTM).

1. E 814 – Standard Method of fire Tests of Through Penetration Fire Stops.
2. E 119 – Methods of Fire Tests of Building Construction and Materials.
3. E 84 – Standard Test Method for Surface Burning Characteristics of Building Materials.
4. E 136 – Test Method for Behavior of Materials in a Vertical Tube Furnace at 750F.
5. E 1399 – Cyclic Movement and Measuring Minimum and Maximum Joint Widths.
6. E 1966 – Test method for Resistance of Building Joint.
7. E 2174 – Standard practice for On-Site Inspection of Installed Firestops.
8. E 05.11.14 – Standard Test method for Determining the fire endurance of Perimeter Fire Barrier Systems Using the Intermediate-Scale, Multi Story Test Apparatus (ISMA): ASTM number pending draft approval.

B. Underwriters Laboratories, Inc. (UL).

1. UL 1479 – Fire Tests of Through Penetration fire Stops.
2. UL 263 – Fire Test of Building Construction and Materials.
3. UL 723 – Surface Burning Characteristics of Building Materials.
4. UL 2079 – Tests for Fire Resistance of Building Joint Systems.

5. UL "Fire Resistance Directory", current year, including but not limited to the following:

   a. For penetrations by uninsulated, non-combustible items including steel pipe, copper pipe, rigid steel conduit and electrical metallic tubing (EMT):
      1) UL System: CAJ-1235, CAJ-1404, WL-1152.
   b. For penetrations by insulated, non-combustible items including steel pipe, cooper pipe, rigid steel conduit and electrical metallic tubing (EMT):
      1) UL Systems: CAJ-5222, CAJ-5250, CAJ-5251, WL-5171.
   c. For penetrations of PVC jacketed, flexible cable or cable bundles and plastic pipe (closed piping systems):
      1) UL Systems: CAJ-2401, CAJ-3185, CAJ-3199, CAJ-3234, WL-3118, WL-3179, WL-3199.
   d. For penetrations of combustible plastic pipe (open piping system):
      1) UL Systems: CAJ-2174, CAJ-2330, CAJ-2351, CAJ-2432, WL-2168, WL-2170, WL-2185, WL-2259.
   e. For penetrations by multiple combustible and/or non-combustible items:
      1) UL Systems: CAJ-8101, CAJ-8133, WL-8007.
   f. For large size / complex penetrations made to accommodate cable trays, multiple steel and cooper pipes, electrical busways in raceways:
      1) UL Systems: CAJ-1406, CAJ-1502, CAJ-4053, CAJ-6027, WJ6004, WL-1207, WL-2343, WL-4030, WL-6018.
   g. For penetrations by steel ducts:
      1) UL Systems: CAJ-7075, CAJ-7082, WJ-7045, WJ-7046, WL-7006, WL-7046, WL-7081, WL-7082.
   h. For fire-rated construction joints and other gaps:
      1) UL Systems: CEJ-296P, CEJ-302P.
   i. For openings between structurally separate sections of wall and floors:
      1) At the top of walls: UL systems: HWD-0107, HWD-0110, HWD-0257, HWD-0267, HWD-0299, HWD-0327, HWD-0266, HWD-0333, HWD-0334.

C. Factory Mutual (FM) Approval guide, current year.

D. National Fire Protection Association.

E. FICA "Manual of Practice".

F. International Firestop Council (IFC).

1.7 PROJECT CONDITIONS

A. Environmental Limitations: Do not install penetration firestopping when ambient or substrate temperatures are outside limits permitted by penetration firestopping manufacturers or when substrates are wet because of rain, frost, condensation, or other causes.

B. Install and cure penetration firestopping per manufacturer's written instructions using natural means of ventilations or, where this is inadequate, forced-air circulation.

1.8 COORDINATION

A. Coordinate construction of openings and penetrating items to ensure that penetration firestopping is installed according to specified requirements.

B. Coordinate sizing of sleeves, openings, core-drilled holes, or cut openings to accommodate penetration firestopping.

C. Notify Owner's testing agency at least seven days in advance of penetration firestopping installations; confirm dates and times on day preceding each series of installations.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following, or approved equal:

1. Grace Construction Products.
2. Hilti, Inc.
3. Johns Manville.
4. NUCO Inc.
5. Passive Fire Protection Partners.
6. Specified Technologies Inc.
7. 3M Fire Protection Products.
8. Tremco, Inc.; Tremco Fire Protection Systems Group.
9. USG Corporation.

2.2 PENETRATION FIRESTOPPING

A. Provide penetration firestopping that is produced and installed to resist spread of fire according to requirements indicated, resist passage of smoke and other gases, and maintain original fire-resistance rating of construction penetrated. Penetration firestopping systems shall be compatible with one another, with the substrates forming openings, and with penetrating items if any.

B. Penetrations in Fire-Resistance-Rated Walls: Provide penetration firestopping with ratings determined per ASTM E 814 or UL 1479, based on testing at a positive pressure differential of 0.01-inch wg (2.49 Pa).

1. Fire-resistance-rated walls include fire walls, fire-barrier walls, smoke-barrier walls and fire partitions.
2. F-Rating: Not less than the fire-resistance rating of constructions penetrated.

C. Penetrations in Horizontal Assemblies: Provide penetration firestopping with ratings determined per ASTM E 814 or UL 1479, based on testing at a positive pressure differential of 0.01-inch wg (2.49 Pa).

1. Horizontal assemblies include floors, floor/ceiling assemblies and ceiling membranes of roof/ceiling assemblies.
2. F-Rating: At least 1 hour, but not less than the fire-resistance rating of constructions penetrated.
3. T-Rating: At least 1 hour, but not less than the fire-resistance rating of constructions penetrated except for floor penetrations within the cavity of a wall.

D. Penetrations in Smoke Barriers: Provide penetration firestopping with ratings determined per UL 1479.

1. L-Rating: Not exceeding 5.0 cfm/sq. ft. (0.025 cu. m/s per sq. m) of penetration opening at 0.30-inch wg (74.7 Pa) at both ambient and elevated temperatures.

E. W-Rating: Provide penetration firestopping showing no evidence of water leakage when tested according to UL 1479.

F. Exposed Penetration Firestopping: Provide products with flame-spread and smoke-developed indexes of less than 25 and 450, respectively, as determined per ASTM E 84.

G. VOC Content: Penetration firestopping sealants and sealant primers shall comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24):

1. Sealants: 250 g/L.
2. Sealant Primers for Nonporous Substrates: 250 g/L.
3. Sealant Primers for Porous Substrates: 775 g/L.

H. Accessories: Provide components for each penetration firestopping system that are needed to install fill materials and to maintain ratings required. Use only those components specified by penetration firestopping manufacturer and approved by qualified testing and inspecting agency for firestopping indicated.

1. Permanent forming/damming/backing materials, including the following:

a. Slag-wool-fiber or rock-wool-fiber insulation.
b. Sealants used in combination with other forming/damming/backing materials to prevent leakage of fill materials in liquid state.
c. Fire-rated form board.
d. Fillers for sealants.

2. Temporary forming materials.
3. Substrate primers.
4. Collars.
5. Steel sleeves.

2.3 FILL MATERIALS

A. Cast-in-Place Firestop Devices: Factory-assembled devices for use in cast-in-place concrete floors and consisting of an outer metallic sleeve lined with an intumescent strip, a radial extended flange attached to one end of the sleeve for fastening to concrete formwork, and a neoprene gasket.

B. Flexible Firestop Sealant (For use where roof joists penetrate fire-rated walls): Acrylic based firestop sealant that provides movement capability in fire rated joint applications. Basis of Design: Hilti CP 606.

C. Latex Sealants: Single-component latex formulations that do not re-emulsify after cure during exposure to moisture.

D. Firestop Devices: Factory-assembled collars formed from galvanized steel and lined with intumescent material sized to fit specific diameter of penetrant.

E. Intumescent Composite Sheets: Rigid panels consisting of aluminum-foil-faced elastomeric sheet bonded to galvanized-steel sheet.

F. Intumescent Putties: Nonhardening dielectric, water-resistant putties containing no solvents, inorganic fibers, or silicone compounds.

G. Intumescent Wrap Strips: Single-component intumescent elastomeric sheets with aluminum foil on one side.

H. Mortars: Prepackaged dry mixes consisting of a blend of inorganic binders, hydraulic cement, fillers, and lightweight aggregate formulated for mixing with water at Project site to form a nonshrinking, homogeneous mortar.

I. Pillows/Bags: Reusable heat-expanding pillows/bags consisting of glass-fiber cloth cases filled with a combination of mineral-fiber, water-insoluble expansion agents, and fire-retardant additives. Where exposed, cover openings with steel-reinforcing wire mesh to protect pillows/bags from being easily removed.

J. Silicone Foams: Multicomponent, silicone-based liquid elastomers that, when mixed, expand and cure in place to produce a flexible, nonshrinking foam.

K. Silicone Sealants: Single-component, silicone-based, neutral-curing elastomeric sealants of grade indicated below:

1. Grade: Pourable (self-leveling) formulation for openings in floors and other horizontal surfaces, and nonsag formulation for openings in vertical and sloped surfaces, unless indicated firestopping limits use of nonsag grade for both opening conditions.

2.4 MIXING

A. For those products requiring mixing before application, comply with penetration firestopping manufacturer's written instructions for accurate proportioning of materials, water (if required), type of mixing equipment, selection of mixer speeds, mixing containers, mixing time, and other items or procedures needed to produce products of uniform quality with optimum performance characteristics for application indicated.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions, with Installer present, for compliance with requirements for opening configurations, penetrating items, substrates, and other conditions affecting performance of the Work.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Surface Cleaning: Clean out openings immediately before installing penetration firestopping to comply with manufacturer's written instructions and with the following requirements:

1. Remove from surfaces of opening substrates and from penetrating items foreign materials that could interfere with adhesion of penetration firestopping.
2. Clean opening substrates and penetrating items to produce clean, sound surfaces capable of developing optimum bond with penetration firestopping. Remove loose particles remaining from cleaning operation.
3. Remove laitance and form-release agents from concrete.

B. Priming: Prime substrates where recommended in writing by manufacturer using that manufacturer's recommended products and methods. Confine primers to areas of bond; do not allow spillage and migration onto exposed surfaces.

C. Masking Tape: Use masking tape to prevent penetration firestopping from contacting adjoining surfaces that will remain exposed on completion of the Work and that would otherwise be permanently stained or damaged by such contact or by cleaning methods used to remove stains. Remove tape as soon as possible without disturbing firestopping's seal with substrates.

3.3 INSTALLATION

A. General: Install penetration firestopping to comply with manufacturer's written installation instructions and published drawings for products and applications indicated.

B. Install forming materials and other accessories of types required to support fill materials during their application and in the position needed to produce cross-sectional shapes and depths required to achieve fire ratings indicated.

1. After installing fill materials and allowing them to fully cure, remove combustible forming materials and other accessories not indicated as permanent components of firestopping.

C. Install fill materials for firestopping by proven techniques to produce the following results:

1. Fill voids and cavities formed by openings, forming materials, accessories, and penetrating items as required to achieve fire-resistance ratings indicated.
2. Apply materials so they contact and adhere to substrates formed by openings and penetrating items.

3. For fill materials that will remain exposed after completing the Work, finish to produce smooth, uniform surfaces that are flush with adjoining finishes.

3.4 IDENTIFICATION

A. Identify penetration firestopping with preprinted metal or plastic labels. Attach labels permanently to surfaces adjacent to and within 6 inches (150 mm) of firestopping edge so labels will be visible to anyone seeking to remove penetrating items or firestopping. Use mechanical fasteners or self-adhering-type labels with adhesives capable of permanently bonding labels to surfaces on which labels are placed. Include the following information on labels:

1. The words "Warning - Penetration Firestopping - Do Not Disturb. Notify Building Management of Any Damage."
2. Contractor's name, address, and phone number.
3. Designation of applicable testing and inspecting agency.
4. Date of installation.
5. Manufacturer's name.
6. Installer's name.

3.5 FIELD QUALITY CONTROL

A. Owner will engage a qualified testing agency to perform tests and inspections.

B. Where deficiencies are found or penetration firestopping is damaged or removed because of testing, repair or replace penetration firestopping to comply with requirements.

C. Proceed with enclosing penetration firestopping with other construction only after inspection reports are issued and installations comply with requirements.

3.6 CLEANING AND PROTECTION

A. Clean off excess fill materials adjacent to openings as the Work progresses by methods and with cleaning materials that are approved in writing by penetration firestopping manufacturers and that do not damage materials in which openings occur.

B. Provide final protection and maintain conditions during and after installation that ensure that penetration firestopping is without damage or deterioration at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, immediately cut out and remove damaged or deteriorated penetration firestopping and install new materials to produce systems complying with specified requirements.

3.7 PENETRATION FIRESTOPPING SCHEDULE

A. The following schedules shall be completed by the Contractor and reviewed prior to submission to the Architect. The Table included shall be completed with each of the following categories of penetrating items:

1. Single uninsulated metallic piping and conduit.

2. Multiple uninsulated metallic piping and conduit.
3. Uninsulatted plastic piping and conduit.
4. Insulated metallic piping.
5. Insulated high temperature flues and exhaust pipes (boiler flues, generator exhausts insulated with calcium silicate or on the non-combustible insulation, etc.)
6. Cable tray.
7. Electric / telephone cable.
8. Bus duct.
9. Miscellaneous penetrations.

B. Complete the additional Tables for the following, using the format provided.

1. Blanks, voids, holes (including edge of slab).
2. Engineering judgments.
3. Ductwork engineering judgments.

3.3 WASTE MANAGEMENT

A. Coordinate with Section 01 74 19.

1. Separate and recycle cut-offs and waste materials and material packaging in accordance with Waste Management Plan and to the maximum extent economically feasible and place in designated areas for recycling.
2. Set aside and protect materials suitable for reuse and/or remanufacturing.
3. Separate and fold up metal banding; flatten and place along with other metal scrap for recycling in designated area.

END OF SECTION 07 84 13

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SECTION 07 84 46 - FIRE-RESISTIVE JOINT SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. The Work of this Section consists of the provision of all plant, labor, materials, equipment, testing and services necessary to complete the work for fire resistive joint systems as shown on the schedules, keynotes, drawings, as specified herein, and as may be required by conditions and authorities having jurisdiction, including, but not limited to, the following:

1. Joints in or between fire-resistance-rated constructions.
2. Joints at exterior storefront-wall/floor intersections.
3. Joints in smoke barriers.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product indicated.

B. Product Schedule: For each fire-resistive joint system. Include location and design designation of qualified testing agency. Retain subparagraph below only after verifying that authorities having jurisdiction will accept modifications handled by method in subparagraph.

1. Where Project conditions require modification to a qualified testing agency's illustration for a particular fire-resistive joint system condition, submit illustration, with modifications marked, approved by fire-resistive joint system manufacturer's fire-protection engineer as an engineering judgment or equivalent fire-resistance-rated assembly.

1.4 INFORMATIONAL SUBMITTALS

A. Installer Certificates: From Installer indicating fire-resistive joint systems have been installed in compliance with requirements and manufacturer's written recommendations.

B. Product test reports.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: A firm that has been approved by FM Global according to FM Global 4991, "Approval of Firestop Contractors," or been evaluated by UL and found to comply with UL's "Qualified Firestop Contractor Program Requirements."

B. Fire-Test-Response Characteristics: Fire-resistive joint systems shall comply with the following requirements:

1. Fire-resistive joint system tests are performed by a qualified testing agency acceptable to authorities having jurisdiction.

C. Pre-installation Conference: Conduct conference at Project site.

PART 2 - PRODUCTS

2.1 FIRE-RESISTIVE JOINT SYSTEMS

A. Where required, provide fire-resistive joint systems that are produced and installed to resist spread of fire according to requirements indicated, resist passage of smoke and other gases, and maintain original fire-resistance rating of assemblies in or between which fire-resistive joint systems are installed. Fire-resistive joint systems shall accommodate building movements without impairing their ability to resist the passage of fire and hot gases.

B. Joints in or between Fire-Resistance-Rated Construction: Ratings determined per ASTM E 1966 or UL 2079:

1. Fire-Resistance Rating: Equal to or exceeding the fire-resistance rating of construction they will join.

2. Manufacturers: Subject to compliance with requirements, provide products by one of the following available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. Grace Construction Products.
b. Hilti, Inc.
c. 3M Fire Protection Products.
d. Tremco, Inc.; Tremco Fire Protection Systems Group.
e. USG Corporation.

C. Joints at Exterior Storefront-Wall/Floor Intersections: Rating determined by ASTM E 119 based on testing at a positive pressure differential of 0.01-inch wg or ASTM E 2307.

1. Fire-Resistance Rating: Equal to or exceeding the fire-resistance rating of the floor assembly.

2. Basis of Design: Perimeter Fire Barrier System CEJ 127P (HI/JS 120-05) by Hilti, Inc.

3. Manufacturers: Subject to compliance with requirements, provide products by one of the following available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

a. Grace Construction Products.
b. Hilti, Inc.
c. 3M Fire Protection Products.
d. Thermafiber, Inc.
e. Tremco, Inc.; Tremco Fire Protection Systems Group.
f. USG Corporation.

D. Joints in Smoke Barriers: Ratings determined per UL 2079.

1. L-Rating: Not exceeding 5.0 cfm/ft of joint at 0.30 inch wg at both ambient and elevated temperatures.

2. Manufacturers: Subject to compliance with requirements, provide products by one of the following available manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

   a. Grace Construction Products.
   b. Hilti, Inc.
   c. 3M Fire Protection Products.
   d. Tremco, Inc.; Tremco Fire Protection Systems Group.
   e. USG Corporation.

E. Exposed Fire-Resistive Joint Systems: Provide products with flame-spread and smoke-developed indexes of less than 25 and 450, respectively, as determined per ASTM E 84.

F. VOC Content: Fire-resistive joint system sealants shall comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24):

1. Architectural Sealants: 250 g/L.

2. Sealant Primers for Nonporous Substrates: 250 g/L.

3. Sealant Primers for Porous Substrates: 775 g/L.

G. Accessories: Provide components of fire-resistive joint systems, including primers and forming materials that are needed to install fill materials and to maintain ratings required. Use only components specified by fire-resistive joint system manufacturer and approved by the qualified testing agency for systems indicated.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Examine substrates and conditions, with Installer present, for compliance with requirements for joint configurations, substrates, and other conditions affecting performance of the Work.

B. Install fire-resistive joint systems to comply with manufacturer's written installation instructions and published drawings for products and applications indicated.

C. Install forming materials and other accessories of types required to support fill materials during their application and in position needed to produce cross-sectional shapes and depths required to achieve fire ratings indicated.

1. After installing fill materials and allowing them to fully cure, remove combustible forming materials and other accessories not indicated as permanent components of fire-resistive joint system.

D. Install fill materials for fire-resistive joint systems by proven techniques to produce the following results:

1. Fill voids and cavities formed by joints and forming materials as required to achieve fire-resistance ratings indicated.

2. Apply fill materials so they contact and adhere to substrates formed by joints.

3. For fill materials that will remain exposed after completing the Work, finish to produce smooth, uniform surfaces that are flush with adjoining finishes.

3.2 IDENTIFICATION

A. Identify fire-resistive joint systems with preprinted metal or plastic labels. Attach labels permanently to surfaces adjacent to and within 6 inches of joint edge so labels will be visible to anyone seeking to remove or penetrate joint system. Use mechanical fasteners or self-adhering-type labels with adhesives capable of permanently bonding labels to surfaces on which labels are placed. Include the following information on labels:

1. The words "Warning - Fire-Resistive Joint System - Do Not Disturb. Notify Building Management of Any Damage."

2. Contractor's name, address, and phone number.

3. Designation of applicable testing agency.

4. Date of installation.

5. Manufacturer's name.

6. Installer's name.

3.3 FIELD QUALITY CONTROL

A. Inspecting Agency: Owner will engage a qualified testing agency to perform tests and inspections.

B. Where deficiencies are found or fire-resistive joint systems are damaged or removed due to testing, repair or replace fire-resistive joint systems so they comply with requirements.

C. Proceed with enclosing fire-resistive joint systems with other construction only after inspection reports are issued and installations comply with requirements

3.4 FIRE-RESISTIVE JOINT SYSTEM SCHEDULE

A. Where UL-classified systems are indicated, they refer to system numbers in UL's "Fire Resistance Directory" under product Category XHBN or Category XHDG.

B. Where Intertek ETL SEMKO-listed systems are indicated, they refer to design numbers in Intertek ETL SEMKO's "Directory of Listed Building Products" under product category Expansion/Seismic Joints or Firestop Systems.

C. Floor-to-Floor, Fire-Resistive Joint Systems FRJS-1:

1. UL-Classified Systems: FF-D S-Insert four-digit number 0000-0999 1000-1999 2000-2999 3000-3999 4000-4999.

D. Wall-to-Wall, Fire-Resistive Joint Systems FRJS-2:

1. UL-Classified Systems: WW-D S-Insert four-digit number 0000-0999 1000-1999 2000-2999 3000-3999 4000-4999.

E. Floor-to-Wall, Fire-Resistive Joint Systems FRJS-3:

1. UL-Classified Systems: FW-D or S-Insert four-digit number 0000-0999 1000-1999 2000-2999 3000-3999 4000-4999.

F. Head-of-Wall, Fire-Resistive Joint Systems FRJS-4:

1. UL-Classified Systems: HW-D S-Insert four-digit number 0000-0999 1000-1999 2000-2999 3000-3999 4000-4999.
2. Intertek ETL SEMKO-Listed Systems:

G. Bottom-of-Wall, Fire-Resistive Joint Systems FRJS-5:

1. UL-Classified Systems: BW-D S-Insert four-digit number 0000-0999 1000-1999 2000-2999 3000-3999 4000-4999.

H. Wall-to-Wall, Fire-Resistive Joint Systems Intended for Use as Corner Guards FRJS-6:

1. UL-Classified Systems: CG-D S-Insert four-digit number 0000-0999 1000-1999 2000-2999 3000-3999 4000-4999.

I. Perimeter Fire-Resistive Joint Systems PFRJS-1:

1. UL-Classified Perimeter Fire-Containment Systems: CW-D S-Insert four-digit number 0000-0999 1000-1999 2000-2999.
2. Intertek ETL SEMKO-Listed, Perimeter Fire-Barrier Systems.

3.5 WASTE MANAGEMENT

A. Coordinate with Section 01 74 19.

1. Separate and recycle cut-offs and waste materials and material packaging in accordance with Waste Management Plan and to the maximum extent economically feasible and place in designated areas for recycling.
2. Set aside and protect materials suitable for reuse and/or remanufacturing.
3. Separate and fold up metal banding; flatten and place along with other scrap for recycling.

END OF SECTION 07 84 46

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SECTION 07 92 00 - JOINT SEALANTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. The Work of this Section consists of the provision of all plant, labor, materials, equipment, testing and services necessary to complete the work for joint sealants as shown on the schedules, keynotes, drawings, as specified herein, and as may be required by conditions and authorities having jurisdiction, including, but not limited to, the following:

1. Architectural Sealants.
2. Sealant Primers for Nonporous Substrates.
3. Sealant Primers for Porous Substrates.

B. Related Sections:

1. Division 04 "Unit Masonry" for masonry control and expansion joint fillers and gaskets.
2. Division 07 "Expansion Control" for building expansion joints, "Fire-Resistive Joint Systems" for sealing joints in fire-resistance-rated construction.
3. Division 08 "Glazing" for glazing sealants.
4. Division 09 "Gypsum Board" for sealing perimeter joints, "Tiling" for sealing tile joints,
5. "Acoustical Tile Ceilings**"** for sealing edge moldings at perimeters with acoustical sealant.

1.3 PRECONSTRUCTION TESTING

A. Preconstruction Compatibility and Adhesion Testing: Submit to joint-sealant manufacturers, for testing indicated below, samples of materials that will contact or affect joint sealants.

1. Use ASTM C 1087 to determine whether priming and other specific joint preparation techniques are required to obtain rapid, optimum adhesion of joint sealants to joint substrates.
2. Submit not fewer than eight pieces of each kind of material, including joint substrates, shims, joint-sealant backings, secondary seals, and miscellaneous materials.
3. Schedule sufficient time for testing and analyzing results to prevent delaying the Work.
4. For materials failing tests, obtain joint-sealant manufacturer's written instructions for corrective measures including use of specially formulated primers.
5. Testing will not be required if joint-sealant manufacturers submit joint preparation data that are based on previous testing, not older than 24 months, of sealant products for adhesion to, and compatibility with, joint substrates and other materials matching those submitted.

B. Preconstruction Field-Adhesion Testing: Before installing sealants, field test their adhesion to Project joint substrates as follows:

1. Locate test joints where indicated on Project or, if not indicated, as directed by Architect.
2. Conduct field tests for each application indicated below:

    a. Each kind of sealant and joint substrate indicated.

3. Notify Architect seven days in advance of dates and times when test joints will be erected.
4. Arrange for tests to take place with joint-sealant manufacturer's technical representative present.

    a. Test Method: Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab, in Appendix X1 in ASTM C 1193 or Method A, Tail Procedure, in ASTM C 1521.

        1) For joints with dissimilar substrates, verify adhesion to each substrate separately; extend cut along one side, verifying adhesion to opposite side. Repeat procedure for opposite side.

5. Report whether sealant failed to adhere to joint substrates or tore cohesively. Include data on pull distance used to test each kind of product and joint substrate. For sealants that fail adhesively, retest until satisfactory adhesion is obtained.
6. Evaluation of Preconstruction Field-Adhesion-Test Results: Sealants not evidencing adhesive failure from testing, in absence of other indications of noncompliance with requirements, will be considered satisfactory. Do not use sealants that fail to adhere to joint substrates during testing.

1.4 ACTION SUBMITTALS

A. Product Data: For each joint-sealant product indicated.

B. Samples for Initial Selection: Manufacturer's color charts consisting of strips of cured sealants showing the full range of colors available for each product exposed to view.

C. Samples for Verification: For each kind and color of joint sealant required, provide Samples with joint sealants in 1/2-inch- (13-mm-) wide joints formed between two 6-inch- (150-mm-) long strips of material matching the appearance of exposed surfaces adjacent to joint sealants.

D. Joint-Sealant Schedule: Include the following information:

1. Joint-sealant application, joint location, and designation.
2. Joint-sealant manufacturer and product name.
3. Joint-sealant formulation.
4. Joint-sealant color.

1.5 INFORMATIONAL SUBMITTALS

A. Qualification Data: For qualified Installer and testing agency.

B. Product Certificates: For each kind of joint sealant and accessory, from manufacturer.

C. Sealant, Waterproofing, and Restoration Institute (SWRI) Validation Certificate: For each sealant specified to be validated by SWRI's Sealant Validation Program.

D. Product Test Reports: Based on evaluation of comprehensive tests performed by a qualified testing agency, indicating that sealants comply with requirements.

E. Preconstruction Compatibility and Adhesion Test Reports: From sealant manufacturer, indicating the following:

1. Materials forming joint substrates and joint-sealant backings have been tested for compatibility and adhesion with joint sealants.
2. Interpretation of test results and written recommendations for primers and substrate preparation needed for adhesion.

F. Preconstruction Field-Adhesion Test Reports: Indicate which sealants and joint preparation methods resulted in optimum adhesion to joint substrates based on testing specified in "Preconstruction Testing" Article.

G. Field-Adhesion Test Reports: For each sealant application tested.

H. Warranties: Sample of special warranties.

1.6 QUALITY ASSURANCE

A. Installer Qualifications: Manufacturer's authorized representative who is trained and approved for installation of units required for this Project.

B. Source Limitations: Obtain each kind of joint sealant from single source from single manufacturer.

C. Product Testing: Test joint sealants using a qualified testing agency.

1. Testing Agency Qualifications: An independent testing agency qualified according to ASTM C 1021 to conduct the testing indicated.
2. Test according to SWRI's Sealant Validation Program for compliance with requirements specified by reference to ASTM C 920 for adhesion and cohesion under cyclic movement, adhesion-in-peel, and indentation hardness.

D. Mockups: Install sealant in mockups of assemblies specified in other Sections that are indicated to receive joint sealants specified in this Section. Use materials and installation methods specified in this Section.

E. Preinstallation Conference: Conduct conference at Project site.

1.7 PROJECT CONDITIONS

A. Do not proceed with installation of joint sealants under the following conditions:

1. When ambient and substrate temperature conditions are outside limits permitted by joint-sealant manufacturer or are below 40 deg F (5 deg C).
2. When joint substrates are wet.
3. Where joint widths are less than those allowed by joint-sealant manufacturer for applications indicated.
4. Where contaminants capable of interfering with adhesion have not yet been removed from joint substrates.

1.8 WARRANTY

A. Special Installer's Warranty: Manufacturer's standard form in which Installer agrees to repair or replace joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.

1. Warranty Period: Five years from date of Substantial Completion.

B. Special Manufacturer's Warranty: Manufacturer's standard form in which joint-sealant manufacturer agrees to furnish joint sealants to repair or replace those that do not comply with performance and other requirements specified in this Section within specified warranty period.

1. Warranty Period: Five years from date of Substantial Completion.

C. Special warranties specified in this article exclude deterioration or failure of joint sealants from the following:

1. Movement of the structure caused by structural settlement or errors attributable to design or construction resulting in stresses on the sealant exceeding sealant manufacturer's written specifications for sealant elongation and compression.
2. Disintegration of joint substrates from natural causes exceeding design specifications.
3. Mechanical damage caused by individuals, tools, or other outside agents.
4. Changes in sealant appearance caused by accumulation of dirt or other atmospheric contaminants.

PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

A. Compatibility: Provide joint sealants, backings, and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by joint-sealant manufacturer, based on testing and field experience.

B. VOC Content of Interior Sealants: Sealants and sealant primers used inside the weatherproofing system shall comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24):

1. Architectural Sealants: 250 g/L.
2. Sealant Primers for Nonporous Substrates: 250 g/L.
3. Sealant Primers for Porous Substrates: 775 g/L.

C. Liquid-Applied Joint Sealants: Comply with ASTM C 920 and other requirements indicated for each liquid-applied joint sealant specified, including those referencing ASTM C 920 classifications for type, grade, class, and uses related to exposure and joint substrates.

1. Suitability for Immersion in Liquids. Where sealants are indicated for Use I for joints that will be continuously immersed in liquids, provide products that have undergone testing according to ASTM C 1247. Liquid used for testing sealants is deionized water, unless otherwise indicated.

D. Stain-Test-Response Characteristics: Where sealants are specified to be nonstaining to porous substrates, provide products that have undergone testing according to ASTM C 1248 and have not stained porous joint substrates indicated for Project.

E. Suitability for Contact with Food: Where sealants are indicated for joints that will come in repeated contact with food, provide products that comply with 21 CFR 177.2600.

F. Colors of Exposed Joint Sealants: As selected by Architect from manufacturer's full range.

G. Suitability for Contact with Food: Comply with 21 CFR 177.2600, where applicable.

2.2 SILICONE JOINT SEALANTS

A. Single-Component, Nonsag, Neutral-Curing Silicone Joint Sealant: ASTM C 920, Type S, Grade NS, Class 100/50, for Use NT.

1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:

a. Dow Corning Corporation; 790
b. GE Advanced Materials - Silicones; SilPruf LM SCS2700.
c. May National Associates, Inc.; [Bondaflex Sil 290] [Bondaflex Sil 728 NS].
d. Pecora Corporation; [301 NS] [311 NS] [890] [890FTS].
e. Sika Corporation, Construction Products Division; SikaSil-C990.
f. Tremco Incorporated; [Spectrem 1] [Spectrem 800].

B. Single-Component, Nonsag, Urethane Joint Sealant: ASTM C 920, Type S, Grade NS, Class 100/50, for Use NT.

1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:

a. Sika Corporation, Construction Products Division; Sikaflex - 15LM.
b. Tremco Incorporated; [Vulkem 921] [Dymonic FC].

2.3 ACOUSTICAL JOINT SEALANTS

A. Acoustical Joint Sealant: Manufacturer's standard nonsag, paintable, nonstaining latex sealant complying with ASTM C 834. Product effectively reduces airborne sound transmission through perimeter joints and openings in building construction as demonstrated by testing representative assemblies according to ASTM E 90.

1. Products: Subject to compliance with requirements, [provide the following] [provide one of the following] [available products that may be incorporated into the Work include, but are not limited to, the following]:

    a. Pecora Corporation; [AC-20 FTR] [AIS-919].
    b. USG Corporation; SHEETROCK Acoustical Sealant.

2.4 JOINT SEALANT BACKING

A. General: Provide sealant backings of material that are nonstaining; are compatible with joint substrates, sealants, primers, and other joint fillers; and are approved for applications indicated by sealant manufacturer based on field experience and laboratory testing.

B. Cylindrical Sealant Backings: ASTM C 1330, Type C (closed-cell material with a surface skin), Type O (open-cell material), Type B (bicellular material with a surface skin), or any of the preceding types, as approved in writing by joint-sealant manufacturer for joint application indicated, and of size and density to control sealant depth and otherwise contribute to producing optimum sealant performance.

C. Bond-Breaker Tape: Polyethylene tape or other plastic tape recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint-filler materials or joint surfaces at back of joint. Provide self-adhesive tape where applicable.

2.5 MISCELLANEOUS MATERIALS

A. Primer: Material recommended by joint-sealant manufacturer where required for adhesion of sealant to joint substrates indicated, as determined from preconstruction joint-sealant-substrate tests and field tests.

B. Cleaners for Nonporous Surfaces: Chemical cleaners acceptable to manufacturers of sealants and sealant backing materials, free of oily residues or other substances capable of staining or harming joint substrates and adjacent nonporous surfaces in any way, and formulated to promote optimum adhesion of sealants to joint substrates.

C. Masking Tape: Nonstaining, nonabsorbent material compatible with joint sealants and surfaces adjacent to joints.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, with Installer present, to verify actual locations, dimensions, and other conditions affecting performance of the Work.

B. Examine joints for suitable conditions.

C. Verify that substrate is sound, dry, smooth, clean, sloped for drainage, and securely anchored.

D. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealants to comply with joint-sealant manufacturer's written instructions and the following requirements:

1. Remove all foreign material from joint substrates that could interfere with adhesion of joint sealant, including dust, paints (except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer), old joint sealants, oil, grease, waterproofing, water repellents, water, surface dirt, and frost.
2. Clean porous joint substrate surfaces by brushing, grinding, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealants. Remove loose particles remaining after cleaning operations above by vacuuming or blowing out joints with oil-free compressed air. Porous joint substrates include the following:

    a. Concrete.
    b. Masonry.
    c. Unglazed surfaces of ceramic tile.

3. Remove laitance and form-release agents from concrete.
4. Clean nonporous joint substrate surfaces with chemical cleaners or other means that do not stain, harm substrates, or leave residues capable of interfering with adhesion of joint sealants. Nonporous joint substrates include the following:

    a. Metal.
    b. Glass.
    c. Porcelain enamel.
    d. Glazed surfaces of ceramic tile.

B. Joint Priming: Prime joint substrates where recommended by joint-sealant manufacturer or as indicated by preconstruction joint-sealant-substrate tests or prior experience. Apply primer to comply with joint-sealant manufacturer's written instructions. Confine primers to areas of joint-sealant bond; do not allow spillage or migration onto adjoining surfaces.

C. Masking Tape: Use masking tape where required to prevent contact of sealant or primer with adjoining surfaces that otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

3.3 INSTALLATION OF JOINT SEALANTS

A. General: Comply with joint-sealant manufacturer's written installation instructions for products and applications indicated, unless more stringent requirements apply.

B. Sealant Installation Standard: Comply with recommendations in ASTM C 1193 for use of joint sealants as applicable to materials, applications, and conditions indicated.

C. Install sealant backings of kind indicated to support sealants during application and at position required to produce cross-sectional shapes and depths of installed sealants relative to joint widths that allow optimum sealant movement capability.

1. Do not leave gaps between ends of sealant backings.
2. Do not stretch, twist, puncture, or tear sealant backings.
3. Remove absorbent sealant backings that have become wet before sealant application and replace them with dry materials.

D. Install bond-breaker tape behind sealants where sealant backings are not used between sealants and backs of joints.

E. Install sealants using proven techniques that comply with the following and at the same time backings are installed:

1. Place sealants so they directly contact and fully wet joint substrates.
2. Completely fill recesses in each joint configuration.
3. Produce uniform, cross-sectional shapes and depths relative to joint widths that allow optimum sealant movement capability.

F. Tooling of Nonsag Sealants: Immediately after sealant application and before skinning or curing begins, tool sealants according to requirements specified in subparagraphs below to form smooth, uniform beads of configuration indicated; to eliminate air pockets; and to ensure contact and adhesion of sealant with sides of joint.

1. Remove excess sealant from surfaces adjacent to joints.
2. Use tooling agents that are approved in writing by sealant manufacturer and that do not discolor sealants or adjacent surfaces.
3. Provide concave joint profile per Figure 8A in ASTM C 1193, unless otherwise indicated.
4. Provide flush joint profile where indicated per Figure 8B in ASTM C 1193.
5. Provide recessed joint configuration of recess depth and at locations indicated per Figure 8C in ASTM C 1193.

    a. Use masking tape to protect surfaces adjacent to recessed tooled joints.

G. Installation of Preformed Silicone-Sealant System: Comply with the following requirements:

1. Apply masking tape to each side of joint, outside of area to be covered by sealant system.
2. Apply silicone sealant to each side of joint to produce a bead of size complying with preformed silicone-sealant system manufacturer's written instructions and covering a bonding area of not less than 3/8 inch (10 mm). Hold edge of sealant bead 1/4 inch inside masking tape.
3. Within 10 minutes of sealant application, press silicone extrusion into sealant to wet extrusion and substrate. Use a roller to apply consistent pressure and ensure uniform contact between sealant and both extrusion and substrate.
4. Complete installation of sealant system in horizontal joints before installing in vertical joints. Lap vertical joints over horizontal joints. At ends of joints, cut silicone extrusion with a razor knife.

H. Acoustical Sealant Installation: At sound-rated assemblies and elsewhere as indicated, seal construction at perimeters, behind control joints, and at openings and penetrations with a continuous bead of acoustical sealant. Install acoustical sealant at both faces of partitions at perimeters and through penetrations. Comply with ASTM C 919 and with manufacturer's written recommendations.

3.4 FIELD QUALITY CONTROL

A. Field-Adhesion Testing: Field test joint-sealant adhesion to joint substrates as follows:

1. Extent of Testing: Test completed and cured sealant joints as follows:

    a. Perform 10 tests for the first 1000 feet (300 m) of joint length for each kind of sealant and joint substrate.
    b. Perform 1 test for each 1000 feet (300 m) of joint length thereafter or 1 test per each floor per elevation.

2. Test Method: Test joint sealants according to Method A, Field-Applied Sealant Joint Hand Pull Tab, in Appendix X1 in ASTM C 1193 or Method A, Tail Procedure, in ASTM C 1521.

    a. For joints with dissimilar substrates, verify adhesion to each substrate separately; extend cut along one side, verifying adhesion to opposite side. Repeat procedure for opposite side.

3. Inspect tested joints and report on the following:

    a. Whether sealants filled joint cavities and are free of voids.
    b. Whether sealant dimensions and configurations comply with specified requirements.
    c. Whether sealants in joints connected to pulled-out portion failed to adhere to joint substrates or tore cohesively. Include data on pull distance used to test each kind of product and joint substrate. Compare these results to determine if adhesion passes sealant manufacturer's field-adhesion hand-pull test criteria.

4. Record test results in a field-adhesion-test log. Include dates when sealants were installed, names of persons who installed sealants, test dates, test locations, whether joints were primed, adhesion results and percent elongations, sealant fill, sealant configuration, and sealant dimensions.
5. Repair sealants pulled from test area by applying new sealants following same procedures used originally to seal joints. Ensure that original sealant surfaces are clean and that new sealant contacts original sealant.

B. Evaluation of Field-Adhesion Test Results: Sealants not evidencing adhesive failure from testing or noncompliance with other indicated requirements will be considered satisfactory. Remove sealants that fail to adhere to joint substrates during testing or to comply with other requirements. Retest failed applications until test results prove sealants comply with indicated requirements.

3.5 CLEANING

A. Clean off excess sealant or sealant smears adjacent to joints as the Work progresses by methods and with cleaning materials approved in writing by manufacturers of joint sealants and of products in which joints occur.

3.6 PROTECTION

A. Protect joint sealants during and after curing period from contact with contaminating substances and from damage resulting from construction operations or other causes so sealants are without deterioration or damage at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated joint sealants immediately so installations with repaired areas are indistinguishable from original work.

3.7 JOINT-SEALANT SCHEDULE

A. Joint-Sealant Application: Exterior joints in vertical surfaces and horizontal nontraffic surfaces.

1. Joint Locations:

    a. Construction joints in cast-in-place concrete.
    b. Joints between plant-precast architectural concrete units.
    c. Control and expansion joints in unit masonry.
    d. Joints in dimension cast stone cladding.
    e. Joints in glass unit masonry assemblies.
    f. Joints between metal panels.
    g. Joints between different materials listed above.
    h. Perimeter joints between materials listed above and frames of doors, windows and louvers.
    i. Control and expansion joints in ceilings and other overhead surfaces.

2. Silicone Joint Sealant: Single component, nonsag, neutral curing, Class 100/50.
3. Urethane Joint Sealant: Single component, nonsag, Class 100/50.
4. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.

B. Joint-Sealant Application: Interior joints in vertical surfaces and horizontal nontraffic surfaces.

1. Joint Locations:

    a. Control and expansion joints on exposed interior surfaces of exterior walls.
    b. Perimeter joints of exterior openings where indicated.
    c. Tile control and expansion joints.
    d. Vertical joints on exposed surfaces of interior unit masonry, concrete walls and] partitions.
    e. Joints on underside of plant-precast structural concrete planks.
    f. Perimeter joints between interior wall surfaces and frames of interior doors, windows and elevator entrances.
    g. Other joints as indicated.
2. Joint-Sealant Color: As selected by Architect from manufacturer's full range of colors.

C. Joint-Sealant Application: Interior acoustical joints in vertical surfaces and horizontal nontraffic surfaces.

1. Joint Location:

    a. Acoustical joints where indicated.
    b. Other joints as indicated.

2. Joint Sealant: Acoustical.
3. Joint-Sealant Color: As selected by Architect from manufacturer's full range.

3.8 WASTE MANAGEMENT

A. Coordinate with Section 01 74 19.

1. Separate and recycle cut-offs and waste materials and material packaging in accordance with Waste Management Plan and to the maximum extent economically feasible and place in designated areas for recycling.
2. Set aside and protect materials suitable for reuse and/or remanufacturing.
3. Separate and fold up metal banding; flatten and place along with other scrap for recycling.

END OF SECTION 07 92 00

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SECTION 07 95 00 - EXPANSION CONTROL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. The Work of this Section consists of the provision of all plant, labor, materials, equipment, testing and services necessary to complete the work for expansion control as shown on the schedules, keynotes, drawings, as specified herein, and as may be required by conditions and authorities having jurisdiction, including, but not limited to, the following:

1. Interior floor wall ceiling expansion control systems.
2. Exterior wall expansion control systems.

B. Related Requirements:
1. Division 3 for concrete work
2. Division 5 for structural and non-structural metal work
3. Section 07 92 00 Joint Sealants
4. Section 07 53 23 EPDM Roofing
5. Section 07 62 00 SM Flashing and Specialties
6. Section 07 72 00 Roof Accessories
7. Division 9 for interior wall and floor work

1.3 ACTION SUBMITTALS

A. Shop Drawings: For each expansion control system specified. Include plans, elevations, sections, details, splices, blockout requirement, attachments to other work, and line diagrams showing entire route of each expansion control system. Where expansion control systems change planes, provide isometric or clearly detailed drawing depicting how components interconnect.

B. Samples: For each exposed expansion control system and for each color and texture specified, full width by 6 inches (150 mm) long in size.

C. Samples for Initial Selection: For each type of expansion control system indicated.

1. Include manufacturer's color charts showing the full range of colors and finishes available for each exposed metal and elastomeric seal material.

D. Samples for Verification: For each type of expansion control system indicated, full width by 6 inches (150 mm) long in size.

E. Product Schedule: Prepared by or under the supervision of the supplier. Include the following information in tabular form:

1. Manufacturer and model number for each expansion control system.
2. Expansion control system location cross-referenced to Drawings.
3. Nominal joint width.
4. Movement capability.
5. Classification as thermal or seismic.
6. Materials, colors, and finishes.
7. Product options.
8. Fire-resistance ratings.

1.4 INFORMATIONAL SUBMITTALS

A. Product Test Reports: For each fire barrier provided as part of an expansion control system, for tests performed by a qualified testing agency.

PART 2 - PRODUCTS

2.1 SYSTEM DESCRIPTION

A. General: Provide expansion control systems of design, basic profile, materials, and operation indicated. Provide units with capability to accommodate variations in adjacent surfaces.

1. Furnish units in longest practicable lengths to minimize field splicing. Install with hairline mitered corners where expansion control systems change direction or abut other materials.
2. Include factory-fabricated closure materials and transition pieces, T-joints, corners, curbs, cross-connections, and other accessories as required to provide continuous expansion control systems.

B. Coordination: Coordinate installation of exterior wall and soffit expansion control systems with roof expansion control systems to ensure that wall transitions are watertight. Roof expansion joint assemblies are specified elsewhere.

2.2 PERFORMANCE REQUIREMENTS

A. Fire-Resistance Ratings: Where indicated, provide expansion control systems with fire barriers identical to those of systems tested for fire resistance per UL 2079 or ASTM E 1966 by a testing and inspecting agency acceptable to authorities having jurisdiction.

1. Hose Stream Test: Wall-to-wall and wall-to-ceiling systems shall be subjected to hose stream testing.

B. Seismic Performance: Expansion control systems shall withstand the effects of earthquake motions determined according to ASCE/SEI 7.

1. The term "withstand" means "the system will remain in place without separation of any parts when subjected to the seismic forces specified and the system will be fully operational after the seismic event."
2. Component Importance Factor is 1.5.

2.3 INTERIOR EXPANSION CONTROL SYSTEMS

A. Locations: Between existing Salzmann Building and new East and West Wing Additions and between existing Salzmann Building and new Entry Addition.

B. Basis-of-Design Product: Subject to compliance with requirements, provide products by MM Systems Corporation, as indicated on the drawings or a comparable product by one of the following:

1. Architectural Art Mfg., Inc.; Division of Pittcon Industries.
2. Balco, Inc.
3. JointMaster/InPro Corporation.
4. Michael Rizza Company, LLC.
5. Construction Specialties, Inc.
6. Nystrom, Inc.

C. Source Limitations: Obtain expansion control systems from single source from single manufacturer.

D. Interior Expansion Control System Requirement:

1. Floor to Floor - LASD
2. Floor to Wall – FSSTE
3. Wall to Wall – VSW
4. Wall to Corner – VSWL
5. Wall to Ceiling – VSWL
6. Ceiling to Ceiling – VSG
7. Wall to Soffit – VSWL

E. Finishes shall be compatible with adjacent materials or as designated in the drawings.

2.4 EXTERIOR WALL EXPANSION CONTROL SYSTEMS

A. Basis-of-Design Product: Subject to compliance with requirements, provide products by MM Systems Corporation, as indicated on the drawings or a comparable product by one of the following:

1. Architectural Art Mfg., Inc.; Division of Pittcon Industries.
2. Balco, Inc.
3. JointMaster/InPro Corporation.
4. Michael Rizza Company, LLC.
5. Construction Specialties, Inc.
6. Nystrom, Inc.

B. Source Limitations: Obtain expansion control systems from single source from single manufacturer.

C. Fire Resistance Rating: same as adjacent construction.

D. Exterior Expansion Control System Requirement with cover plates:
1. Wall to Wall – ESS
2. Wall to Corner – ESS

E. Exposed gasket: Extruded flexible gasket. Color as selected by Architect from manufacture's full range.

2.5 MATERIALS

A. Aluminum: ASTM B 221 (ASTM B 221M), Alloy 6063-T5 for extrusions; ASTM B 209 (ASTM B 209M), Alloy 6061-T6 for sheet and plate.

1. Apply manufacturer's standard protective coating on aluminum surfaces to be placed in contact with cementitious materials.

B. Elastomeric Seals: ASTM E 1783; preformed elastomeric membranes or extrusions to be installed in metal frames.

C. Compression Seals: ASTM E 1612; preformed elastomeric extrusions having an internal baffle system and designed to function under compression.

D. Cellular Foam Seals: Extruded, compressible foam designed to function under compression.

E. Elastomeric Concrete: Modified epoxy or polyurethane extended into a prepackaged aggregate blend, specifically designed for bonding to concrete substrates.

F. Fire Barriers: Any material or material combination, when fire tested after cycling, designated to resist the passage of flame and hot gases through a movement joint and to meet performance criteria for required fire-resistance rating.

G. Nonmetallic, Shrinkage-Resistant Grout: ASTM C 1107/C 1107M, factory-packaged, nonmetallic aggregate grout, noncorrosive, nonstaining, mixed with water to consistency suitable for application and a 30-minute working time.

H. Accessories: Manufacturer's standard anchors, clips, fasteners, set screws, spacers, and other accessories compatible with material in contact, as indicated or required for complete installations.

2.6 GENERAL FINISH REQUIREMENTS

A. Comply with NAAMM's "Metal Finishes Manual for Architectural and Metal Products" for recommendations for applying and designating finishes.

B. Protect mechanical finishes on exposed surfaces from damage by applying a strippable, temporary protective covering before shipping.

C. Appearance of Finished Work: Noticeable variations in same piece are not acceptable. Variations in appearance of adjoining components are acceptable if they are within the range of approved Samples and are assembled or installed to minimize contrast.

2.7 ALUMINUM FINISHES

A. Mill finish.

B. Clear Anodic Finish: AAMA 611, AA-M12C22A41, Class I, 0.018 mm or thicker.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine surfaces where expansion control systems will be installed for installation tolerances and other conditions affecting performance of work.

1. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Prepare substrates according to expansion control system manufacturer's written instructions.

B. Coordinate and furnish anchorages, setting drawings, and instructions for installing expansion control systems. Provide fasteners of metal, type, and size to suit type of construction indicated and to provide for secure attachment of expansion control systems.

C. Cast-In Frames: Coordinate and furnish frames to be cast into concrete.

3.3 INSTALLATION

A. Comply with manufacturer's written instructions for storing, handling, and installing expansion control systems and materials unless more stringent requirements are indicated.

B. Metal Frames: Perform cutting, drilling, and fitting required to install expansion control systems.

1. Install in true alignment and proper relationship to joints and adjoining finished surfaces measured from established lines and levels.
2. Adjust for differences between actual structural gap and nominal design gap due to ambient temperature at time of installation. Notify Architect where discrepancies occur that will affect proper expansion control system installation and performance.
3. Cut and fit ends to accommodate thermal expansion and contraction of metal without buckling of frames.
4. Repair or grout blockout as required for continuous frame support using nonmetallic, shrinkage-resistant grout.
5. Install frames in continuous contact with adjacent surfaces.
   a. Shimming is not permitted.

6. Locate anchors at interval recommended by manufacturer, but not less than 3 inches (75 mm) from each end and not more than 24 inches (600 mm) o.c.

C. Seals in Metal Frames: Install elastomeric seals and membranes in frames to comply with manufacturer's written instructions. Install with minimum number of end joints.

1. Provide in continuous lengths for straight sections.
2. Seal transitions according to manufacturer's written instructions. Vulcanize or heat-weld field-spliced joints as recommended by manufacturer.
3. Installation: Mechanically lock seals into frames or adhere to frames with adhesive or pressure-sensitive tape as recommended by manufacturer.

D. Compression Seals: Apply adhesive or lubricant adhesive as recommended by manufacturer before installing compression seals.

E. Foam Seals: Install with adhesive recommended by manufacturer.

F. Epoxy-Bonded Seals: Pressurize seal for time period and to pressure recommended by manufacturer. Do not overpressurize.

G. Terminate exposed ends of expansion control systems with field- or factory-fabricated termination devices.

H. Fire-Resistance-Rated Assemblies: Coordinate installation of expansion control system materials and associated work so complete assemblies comply with assembly performance requirements.

1. Fire Barriers: Install fire barriers to provide continuous, uninterrupted fire resistance throughout length of joint, including transitions and field splices.

I. Moisture Barrier: Provide at all exterior joints and where indicated on Drawings. Provide drainage fittings at a maximum of 50 feet (15.2 m) or where indicated on Drawings.

3.4 PROTECTION

A. Do not remove protective covering until finish work in adjacent areas is complete. When protective covering is removed, clean exposed metal surfaces to comply with manufacturer's written instructions.

B. Protect the installation from damage by work of other Sections. Where necessary due to heavy construction traffic, remove and properly store cover plates or seals and install temporary protection over expansion control systems. Reinstall cover plates or seals prior to Substantial Completion of the Work.

3.5 WASTE MANAGEMENT

A. Coordinate with Section 01 74 19.

1. Separate and recycle cut-offs and waste materials and material packaging in accordance with Waste Management Plan and to the maximum extent economically feasible and place in designated areas for recycling.

2. Set aside and protect materials suitable for reuse and/or remanufacturing.
3. Separate and fold up metal banding; flatten and place along with other metal scrap for recycling in designated area.

END OF SECTION 07 95 00

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SECTION 09 22 16 - NON-STRUCTURAL METAL FRAMING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Non-load-bearing steel framing systems for interior gypsum board assemblies.
2. Suspension systems for interior gypsum ceilings, soffits, and grid systems.

B. Related Requirements:

1. None

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

1.4 INFORMATIONAL SUBMITTALS

A. Evaluation Reports: For dimpled steel studs and runners and firestop tracks, from ICC-ES.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Fire-Test-Response Characteristics: For fire-resistance-rated assemblies that incorporate non-load-bearing steel framing, provide materials and construction identical to those tested in assembly indicated, according to ASTM E 119 by an independent testing agency.

B. STC-Rated Assemblies: For STC-rated assemblies, provide materials and construction identical to those tested in assembly indicated, according to ASTM E 90 and classified according to ASTM E 413 by an independent testing agency.

2.2 FRAMING SYSTEMS

A. Framing Members, General: Comply with ASTM C 754 for conditions indicated.

1. Steel Sheet Components: Comply with ASTM C 645 requirements for metal unless otherwise indicated.
2. Protective Coating: ASTM A 653/A 653M, G40 (Z120), Coating with equivalent corrosion resistance of ASTM A 653/A 653M, G40 (Z120), hot-dip galvanized unless otherwise indicated.

B. Studs and Runners: ASTM C 645. Use either steel studs and runners or dimpled steel studs and runners.

1. Steel Studs and Runners:

a. Thickness: 20 ga. **Unless otherwise indicated**
b. Depth: As indicated on Drawings.

C. Slip-Type Head Joints: Where indicated, provide one of the following:

1. Single Long-Leg Runner System: ASTM C 645 top runner with 2-inch- (51-mm-) deep flanges in thickness not less than indicated for studs, installed with studs friction fit into top runner and with continuous bridging located within 12 inches (305 mm) of the top of studs to provide lateral bracing.
2. Double-Runner System: ASTM C 645 top runners, inside runner with 2-inch- (51-mm-) deep flanges in thickness not less than indicated for studs and fastened to studs, and outer runner sized to friction fit inside runner.
3. Deflection Track: Steel sheet top runner manufactured to prevent cracking of finishes applied to interior partition framing resulting from deflection of structure above; in thickness not less than indicated for studs and in width to accommodate depth of studs.

a. Products: Subject to compliance with requirements, provide one of the following or approved equal:

1) Dietrich Metal Framing; SLP-TRK Slotted Deflection Track.
2) MBA Building Supplies; FlatSteel Deflection Track or Slotted Deflecto Track.
3) Steel Network Inc. (The); VertiTrack VTD Series.
4) Superior Metal Trim; Superior Flex Track System (SFT).
5) Telling Industries; Vertical Slip Track.

D. Firestop Tracks: Top runner manufactured to allow partition heads to expand and contract with movement of the structure while maintaining continuity of fire-resistance-rated assembly indicated; in thickness not less than indicated for studs and in width to accommodate depth of studs.

1. Products: Subject to compliance with requirements, provide one of the following, or approved equal:

a. Fire Trak Corp.; Fire Trak System.
b. Grace Construction Products; FlameSafe FlowTrak System.

E. Flat Strap and Backing Plate: Steel sheet for blocking and bracing in length and width indicated.

1. Minimum Base-Metal Thickness: 0.0219 inch (0.556 mm).

F. Cold-Rolled Channel Bridging: Steel, 0.053-inch (1.34-mm) minimum base-metal thickness, with minimum 1/2-inch- (13-mm-) wide flanges.

1. Depth: As indicated on Drawings.
2. Clip Angle: Not less than 1-1/2 by 1-1/2 inches (38 by 38 mm), 0.068-inch- (1.72-mm-) thick, galvanized steel.

G. Hat-Shaped, Rigid Furring Channels: ASTM C 645.

1. Minimum Base-Metal Thickness: 0.0219 inch (0.556 mm).
2. Depth: 7/8 inch (22.2 mm).

H. Resilient Furring Channels: 1/2-inch- (13-mm-) deep, steel sheet members designed to reduce sound transmission.

1. Configuration: Asymmetrical or hat shaped.

I. Cold-Rolled Furring Channels: 0.053-inch (1.34-mm) uncoated-steel thickness, with minimum 1/2-inch- (13-mm-) wide flanges.

1. Depth: As indicated on Drawings.
2. Furring Brackets: Adjustable, corrugated-edge type of steel sheet with minimum uncoated-steel thickness of 0.033 inch (0.8 mm).
3. Tie Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, 0.062-inch- (1.59-mm-) diameter wire, or double strand of 0.048-inch- (1.21-mm-) diameter wire.

J. Z-Shaped Furring: With slotted or nonslotted web, face flange of 1-1/4 inches (32 mm), wall attachment flange of 7/8 inch (22 mm), minimum uncoated-metal thickness of 0.018 inch (0.45 mm), and depth required to fit insulation thickness indicated.

2.3 SUSPENSION SYSTEMS

A. Tie Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, 0.062-inch- (1.59-mm-) diameter wire, or double strand of 0.048-inch- (1.21-mm-) diameter wire.

B. Hanger Attachments to Concrete:

1. Anchors: Fabricated from corrosion-resistant materials with holes or loops for attaching wire hangers and capable of sustaining, without failure, a load equal to 5 times that imposed by construction as determined by testing according to ASTM E 488 by an independent testing agency.
2. Powder-Actuated Fasteners: Suitable for application indicated, fabricated from corrosion-resistant materials with clips or other devices for attaching hangers of type indicated, and capable of sustaining, without failure, a load equal to 10 times that imposed by construction as determined by testing according to ASTM E 1190 by an independent testing agency.

C. Wire Hangers: ASTM A 641/A 641M, Class 1 zinc coating, soft temper, 0.16 inch (4.12 mm) in diameter.

D. Flat Hangers: Steel sheet, 1 by 3/16 inch (25 by 5 mm) by length indicated.

E. Carrying Channels: Cold-rolled, commercial-steel sheet with a base-metal thickness of 0.053 inch (1.34 mm) and minimum 1/2-inch- (13-mm-) wide flanges.

F. Furring Channels (Furring Members):

1. Cold-Rolled Channels: 0.053-inch (1.34-mm) uncoated-steel thickness, with minimum 1/2-inch- (13-mm-) wide flanges, 3/4 inch (19 mm) deep.
2. Steel Studs and Runners: ASTM C 645.
3. Dimpled Steel Studs and Runners: ASTM C 645.
4. Hat-Shaped, Rigid Furring Channels: ASTM C 645, 7/8 inch (22 mm) deep.
5. Resilient Furring Channels: 1/2-inch- (13-mm-) deep members designed to reduce sound transmission.

G. Grid Suspension System for Gypsum Board Ceilings: ASTM C 645, direct-hung system composed of main beams and cross-furring members that interlock.

1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:

a. Armstrong World Industries, Inc.; Drywall Grid Systems.
b. Chicago Metallic Corporation; Drywall Grid System.
c. USG Corporation; Drywall Suspension System.

2.4 AUXILIARY MATERIALS

A. General: Provide auxiliary materials that comply with referenced installation standards.

1. Fasteners for Metal Framing: Of type, material, size, corrosion resistance, holding power, and other properties required to fasten steel members to substrates.

B. Isolation Strip at Exterior Walls: Provide one of the following:

1. Asphalt-Saturated Organic Felt: ASTM D 226, Type I (No. 15 asphalt felt), nonperforated.
2. Foam Gasket: Adhesive-backed, closed-cell vinyl foam strips that allow fastener penetration without foam displacement, 1/8 inch (3.2 mm) thick, in width to suit steel stud size.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and substrates, with Installer present, and including welded hollow-metal frames, cast-in anchors, and structural framing, for compliance with requirements and other conditions affecting performance of the Work.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Suspended Assemblies: Coordinate installation of suspension systems with installation of overhead structure to ensure that inserts and other provisions for anchorages to building structure have been installed to receive hangers at spacing required to support the Work and that hangers will develop their full strength.

1. Furnish concrete inserts and other devices indicated to other trades for installation in advance of time needed for coordination and construction.

B. Coordination with Sprayed Fire-Resistive Materials:

1. Before sprayed fire-resistive materials are applied, attach offset anchor plates or ceiling runners (tracks) to surfaces indicated to receive sprayed fire-resistive materials. Where offset anchor plates are required, provide continuous plates fastened to building structure not more than 24 inches (610 mm) o.c.
2. After sprayed fire-resistive materials are applied, remove them only to extent necessary for installation of non-load-bearing steel framing. Do not reduce thickness of fire-resistive materials below that required for fire-resistance ratings indicated. Protect adjacent fire-resistive materials from damage.

3.3 INSTALLATION, GENERAL

A. Installation Standard: ASTM C 754.

1. Gypsum Board Assemblies: Also comply with requirements in ASTM C 840 that apply to framing installation.

B. Install supplementary framing, and blocking to support fixtures, equipment services, heavy trim, grab bars, toilet accessories, furnishings, or similar construction.

C. Install bracing at terminations in assemblies.

D. Do not bridge building control and expansion joints with non-load-bearing steel framing members. Frame both sides of joints independently.

3.4 INSTALLING FRAMED ASSEMBLIES

A. Install framing system components according to spacings indicated, but not greater than spacings required by referenced installation standards for assembly types.

1. Single-Layer Application: 16 inches (406 mm) o.c. unless otherwise indicated.
2. Multilayer Application: 16 inches (406 mm) o.c. unless otherwise indicated.
3. Tile Backing Panels: 16 inches (406 mm)] o.c. unless otherwise indicated.

B. Where studs are installed directly against exterior masonry walls or dissimilar metals at exterior walls, install isolation strip between studs and exterior wall.

C. Install studs so flanges within framing system point in same direction.

D. Install tracks (runners) at floors and overhead supports. Extend framing full height to structural supports or substrates above suspended ceilings except where partitions are indicated to terminate at suspended ceilings. Continue framing around ducts penetrating partitions above ceiling.

1. Slip-Type Head Joints: Where framing extends to overhead structural supports, install to produce joints at tops of framing systems that prevent axial loading of finished assemblies.
2. Door Openings: Screw vertical studs at jambs to jamb anchor clips on door frames; install runner track section (for cripple studs) at head and secure to jamb studs.

    a. Install two studs at each jamb unless otherwise indicated.
    b. Install cripple studs at head adjacent to each jamb stud, with a minimum 1/2-inch (13-mm) clearance from jamb stud to allow for installation of control joint in finished assembly.
    c. Extend jamb studs through suspended ceilings and attach to underside of overhead structure.

3. Other Framed Openings: Frame openings other than door openings the same as required for door openings unless otherwise indicated. Install framing below sills of openings to match framing required above door heads.
4. Fire-Resistance-Rated Partitions: Install framing to comply with fire-resistance-rated assembly indicated and support closures and to make partitions continuous from floor to underside of solid structure.

    a. Firestop Track: Where indicated, install to maintain continuity of fire-resistance-rated assembly indicated.

5. Sound-Rated Partitions: Install framing to comply with sound-rated assembly indicated.
6. Curved Partitions:

    a. Bend track to uniform curve and locate straight lengths so they are tangent to arcs.
    b. Begin and end each arc with a stud, and space intermediate studs equally along arcs. On straight lengths of no fewer than two studs at ends of arcs, place studs 6 inches (150 mm) o.c.

E. Direct Furring:

1. Screw to wood framing.
2. Attach to concrete or masonry with stub nails, screws designed for masonry attachment, or powder-driven fasteners spaced 24 inches (610 mm) o.c.

F. Z-Furring Members:

1. Erect insulation, specified in Section 072100 "Thermal Insulation," vertically and hold in place with Z-furring members spaced 24 inches (610 mm) o.c.
2. Except at exterior corners, securely attach narrow flanges of furring members to wall with concrete stub nails, screws designed for masonry attachment, or powder-driven fasteners spaced 24 inches (610 mm) o.c.
3. At exterior corners, attach wide flange of furring members to wall with short flange extending beyond corner; on adjacent wall surface, screw-attach short flange of furring channel to web of attached channel. At interior corners, space second member no more than 12 inches (305 mm) from corner and cut insulation to fit.

G. Installation Tolerance: Install each framing member so fastening surfaces vary not more than 1/8 inch (3 mm) from the plane formed by faces of adjacent framing.

3.5 INSTALLING SUSPENSION SYSTEMS

A. Install suspension system components according to spacings indicated, but not greater than spacings required by referenced installation standards for assembly types.

1. Hangers: 48 inches (1219 mm) o.c.
2. Carrying Channels (Main Runners): 48 inches (1219 mm) o.c.
3. Furring Channels (Furring Members): 16 inches (406 mm) o.c.

B. Isolate suspension systems from building structure where they abut or are penetrated by building structure to prevent transfer of loading imposed by structural movement.

C. Suspend hangers from building structure as follows:

1. Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structural or suspension system.

    a. Splay hangers only where required to miss obstructions and offset resulting horizontal forces by bracing, countersplaying, or other equally effective means.

2. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with locations of hangers required to support standard suspension system members, install supplemental suspension members and hangers in the form of trapezes or equivalent devices.

    a. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced installation standards.

3. Wire Hangers: Secure by looping and wire tying, either directly to structures or to inserts, eye screws, or other devices and fasteners that are secure and appropriate for substrate, and in a manner that will not cause hangers to deteriorate or otherwise fail.
4. Flat Hangers: Secure to structure, including intermediate framing members, by attaching to inserts, eye screws, or other devices and fasteners that are secure and appropriate for structure and hanger, and in a manner that will not cause hangers to deteriorate or otherwise fail.
5. Do not attach hangers to steel roof deck.
6. Do not attach hangers to permanent metal forms. Furnish cast-in-place hanger inserts that extend through forms.
7. Do not attach hangers to rolled-in hanger tabs of composite steel floor deck.
8. Do not connect or suspend steel framing from ducts, pipes, or conduit.

D. Fire-Resistance-Rated Assemblies: Wire tie furring channels to supports.

E. Seismic Bracing: Sway-brace suspension systems with hangers used for support.

F. Grid Suspension Systems: Attach perimeter wall track or angle where grid suspension systems meet vertical surfaces. Mechanically join main beam and cross-furring members to each other and butt-cut to fit into wall track.

G. Installation Tolerances: Install suspension systems that are level to within 1/8 inch in 12 feet (3 mm in 3.6 m) measured lengthwise on each member that will receive finishes and transversely between parallel members that will receive finishes.

3.6 WASTE MANAGEMENT

A. Coordinate with Section 017423.

1. Separate and recycle cut-offs and waste materials and material packaging in accordance with Waste Management Plan and to the maximum extent economically feasible and place in designated areas for recycling.
2. Set aside and protect materials suitable for reuse and/or remanufacturing.
3. Separate and fold up metal banding; flatten and place along with other metal scrap for recycling in designated area.

END OF SECTION 092216

SECTION 09 29 00 - GYPSUM BOARD

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This section includes the performance criteria, materials, production, and erection of gypsum board for the project. The work performed under this Section consists of the provision of all plant, materials, labor and equipment and the like necessary and/or required for the complete execution of all gypsum board as required by this section, schedules, keynotes and drawings including, but not limited to the following.

1. Interior gypsum board.
2. Moisture resistant gypsum board (all wet locations and as tile backer)
3. Trim.

B. Related Requirements:
1. Section 09 22 16 "Non-Structural Metal Framing" for non-structural framing and suspension systems that support gypsum board panels.

1.3 PERFORMANCE REQUIREMENTS

A. Structural Performance of Ceiling Suspension Systems: Ceiling suspension systems and cantilevered ceiling soffits shall withstand the effects of gravity and seismic effects.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Shop Drawings for Gypsum Board Ceiling Systems: Include reflected ceiling plans, drawn to scale, on which the following items are shown and coordinated with each other, and as reviewed by a qualified professional engineer using input from installers of the items involved:.

1. Layout of all ceilings/soffits with dimensions based on as-built construction
2. Gypsum board ceiling suspension-system members.
3. Miscellaneous metal/steel framing sizing for soffits and cantilevers
4. Method of attaching hangers to building structure.

a. Furnish layouts and sizing for cast-in-place anchors, clips, metal framing, miscellaneous steel shapes, and other ceiling attachment devices whose installation is specified in other Sections.

5. Size and location of initial access modules for suspended gypsum board ceilings and soffits.
6. Ceiling-mounted items including lighting fixtures, diffusers, grilles, speakers, sprinklers, access panels, and special moldings.
7. Minimum Drawing Scale: 1/8 inch = 1 foot (1:96) for layout drawings, 1 inch = 1 foot for detail drawings

C. Evaluation Reports: For each ceiling suspension system and anchor and fastener type, from ICC-ES.

D. Field quality-control reports.

E. Samples: For the following products:

1. Trim Accessories: Full-size Sample in 12-inch- (300-mm-) long length for each trim accessory indicated.
2. Textured Finishes: 12” x 12” sample for each textured finish indicated and on same backing indicated for Work.

1.5 QUALITY ASSURANCE

A. Mockups: Before beginning gypsum board installation, install mockups of at least 100 sq. ft. (9 sq. m) in surface area to demonstrate aesthetic effects and set quality standards for materials and execution.

1. Install mockups for the following:

a. Each level of gypsum board finish indicated for use in exposed locations.
b. Each texture finish indicated.

2. Apply or install final decoration indicated, including painting and wallcoverings, on exposed surfaces for review of mockups.
3. Simulate finished lighting conditions for review of mockups.
4. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.6 DELIVERY, STORAGE AND HANDLING

A. Store materials inside under cover and keep them dry and protected against weather, condensation, direct sunlight, construction traffic, and other potential causes of damage. Stack panels flat and supported on risers on a flat platform to prevent sagging.

1.7 FIELD CONDITIONS

A. Environmental Limitations: Comply with ASTM C 840 requirements or gypsum board manufacturer's written recommendations, whichever are more stringent.

B. Do not install paper-faced gypsum panels until installation areas are enclosed and conditioned.

C. Do not install panels that are wet, those that are moisture damaged, and those that are mold damaged.

1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.

PART 2 - Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Fire-Resistance-Rated Assemblies: For fire-resistance-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E 119 by an independent testing agency.

B. STC-Rated Assemblies: For STC-rated assemblies, provide materials and construction identical to those tested in assembly indicated according to ASTM E 90 and classified according to ASTM E 413 by an independent testing agency.

2.2 GYPSUM BOARD, GENERAL

A. Size: Provide maximum lengths and widths available that will minimize joints in each area and that correspond with support system indicated.

2.3 INTERIOR GYPSUM BOARD

A. Manufacturers: Subject to compliance with requirements, provide products by the following:

1. National Gypsum Company
2. American Gypsum.
3. CertainTeed Corp.
4. Georgia-Pacific Gypsum LLC.
5. Lafarge North America Inc.
6. USG Corporation.

B. Gypsum Wallboard: ASTM C 1396/C 1396M.

1. Thickness: 5/8 inch (12.7 mm).
2. Long Edges: Tapered.

C. Gypsum Board, Type X: ASTM C 1396/C 1396M.

1. Thickness: 5/8 inch (15.9 mm).
2. Long Edges: Tapered.

D. Flexible Gypsum Board: ASTM C 1396/C 1396M. Manufactured to bend to fit radii and to be more flexible than standard regular-type gypsum board of same thickness.

1. Thickness: 1/4 inch (6.4 mm).
2. Long Edges: Tapered.

E. Gypsum Ceiling Board: ASTM C 1396/C 1396M.

1. Thickness: 1/2 inch (12.7 mm).
2. Long Edges: Tapered.

F. Abuse-Resistant Gypsum Board: ASTM C 1629/C 1629M.

1. Products Paper Faced, ASTM C 1396: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
   a. National Gypsum Company; Hi-Abuse XP.
2. Products Glass-Mat Faced, ASTM C 1658: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
   a. National Gypsum Company; eXP Interior Extreme AR Gypsum Panel.
3. Core**:** 5/8 inch (15.9 mm), Type X.
4. Long Edges: Tapered.
5. Mold Resistance: ASTM D 3273, score of 10 as rated according to ASTM D 3274.
6. Surface Abrasion Resistance: Level 3 in accordance with ASTM C 1629.
7. Indentation Resistance: Level 1 in accordance with ASTM C 1629.
8. Soft Body Impact Resistance: Level 2 in accordance with ASTM C 1629.

G. Impact-Resistant Gypsum Board: ASTM C 1629/C 1629M.

1. Products Paper Faced, ASTM C 1396: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
   a. National Gypsum Company; Hi-Impact XP.
2. Products Glass-Mat Faced, ASTM C 1658: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:
   a. Georgia-Pacific Gypsum LLC; DensArmor Plus Impact-Resistant Interior Panel.
   b. National Gypsum Company; eXP Interior Extreme IR Gypsum Panel.
3. Core**:** 5/8 inch (15.9 mm), Type X.
4. Long Edges: Tapered.
5. Mold Resistance: ASTM D 3273, score of 10 as rated according to ASTM D 3274.
6. Surface Abrasion Resistance: Level 3 in accordance with ASTM C 1629.
7. Indentation Resistance: Level 1 in accordance with ASTM C 1629.
8. Soft Body Impact Resistance: Level 3 in accordance with ASTM C 1629.
9. Hard Body Impact Resistance: Level 2 in accordance with ASTM C 1629.

H. Moisture- and Mold-Resistant Gypsum Board: ASTM C 1396/C 1396M. With moisture- and mold-resistant core and paper surfaces.

1. Core: 5/8 inch (15.9 mm), Type X.
2. Long Edges: Tapered.
3. Mold Resistance: ASTM D 3273, score of 10 as rated according to ASTM D 3274.

I. Glass-Mat Interior Gypsum Board: ASTM C 1658/C 1658M. With fiberglass mat laminated to both sides. Specifically designed for interior use, where indicated on Drawings. Retain "Products" Subparagraph and list of manufacturers and products below to require specific products or a comparable product from other manufacturers.

1. Products: Subject to compliance with requirements, available products that may be incorporated into the Work include, but are not limited to, the following:

    a. Georgia-Pacific Gypsum LLC; DensArmor Plus.
    b. National Gypsum Company; eXP Interior Extreme.

2. Core: 5/8 inch, Type X.
3. Long Edges: Tapered.
4. Mold Resistance: ASTM D 3273, score of 10 as rated according to ASTM D 3274.

2.4 TRIM ACCESSORIES

A. Interior Trim: ASTM C 1047.

1. Material: Galvanized or aluminum-coated steel sheet, rolled zinc, plastic, or paper-faced galvanized steel sheet.
2. Shapes:

    a. Cornerbead.
    b. Bullnose bead.
    c. LC-Bead: J-shaped; exposed long flange receives joint compound.
    d. L-Bead: L-shaped; exposed long flange receives joint compound.
    e. U-Bead: J-shaped; exposed short flange does not receive joint compound.
    f. Expansion (control) joint.
    g. Curved-Edge Cornerbead: With notched or flexible flanges.

2.5 JOINT TREATMENT MATERIALS

A. General: Comply with ASTM C 475/C 475M.

B. Joint Tape:

1. Interior Gypsum Board: Paper.
2. Glass-Mat Gypsum Sheathing Board: 10-by-10 glass mesh.

C. Joint Compound for Interior Gypsum Board: For each coat use formulation that is compatible with other compounds applied on previous or for successive coats.

1. Prefilling: At open joints, rounded or beveled panel edges, and damaged surface areas, use setting-type taping compound.

2. Embedding and First Coat: For embedding tape and first coat on joints, fasteners, and trim flanges, use setting-type taping compound.

    a. Use setting-type compound for installing paper-faced metal trim accessories.

3. Fill Coat: For second coat, use setting-type, sandable topping compound.
4. Finish Coat: For third coat, use setting-type, sandable topping compound.
5. Skim Coat: For final coat of Level 5 finish, use setting-type, sandable topping compound.

2.6 AUXILIARY MATERIALS

A. General: Provide auxiliary materials that comply with referenced installation standards and manufacturer's written recommendations.

B. Laminating Adhesive: Adhesive or joint compound recommended for directly adhering gypsum panels to continuous substrate.

1. Laminating adhesive shall have a VOC content of 50 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

C. Steel Drill Screws: ASTM C 1002, unless otherwise indicated.

1. Use screws complying with ASTM C 954 for fastening panels to steel members from 0.033 to 0.112 inch (0.84 to 2.84 mm) thick.

D. Sound Attenuation Blankets: ASTM C 665, Type I (blankets without membrane facing) produced by combining thermosetting resins with mineral fibers manufactured from glass, slag wool, or rock wool.

1. Fire-Resistance-Rated Assemblies: Comply with mineral-fiber requirements of assembly.

E. Acoustical Joint Sealant: Manufacturer's standard nonsag, paintable, nonstaining latex sealant complying with ASTM C 834. Product effectively reduces airborne sound transmission through perimeter joints and openings in building construction as demonstrated by testing representative assemblies according to ASTM E 90.

1. Products: Subject to compliance with requirements, provide product by one of the following:

    a. Accumetric LLC; BOSS 824 Acoustical Sound Sealant.
    b. Grabber Construction Products; Acoustical Sealant GSC.
    c. Pecora Corporation
    d. Specified Technologies, Inc.; Smoke N Sound Acoustical Sealant.
    e. USG Corporation; SHEETROCK Acoustical Sealant.

2. Acoustical joint sealant shall have a VOC content of 250 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

F. Thermal Insulation: As specified in Section 07 21 00 "Thermal Insulation."

G. Vapor Retarder: As specified in Section 07 21 00 "Thermal Insulation."

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas and substrates including welded hollow-metal frames and framing, with Installer present, for compliance with requirements and other conditions affecting performance.

B. Examine panels before installation. Reject panels that are wet, moisture damaged, and mold damaged.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 APPLYING AND FINISHING PANELS, GENERAL

A. Comply with ASTM C 840 and Gypsum Association GA 214-10.

B. Install ceiling panels across framing to minimize the number of abutting end joints and to avoid abutting end joints in central area of each ceiling. Stagger abutting end joints of adjacent panels not less than one framing member.

C. Install panels with face side out. Butt panels together for a light contact at edges and ends with not more than 1/16 inch (1.5 mm) of open space between panels. Do not force into place.

D. Locate edge and end joints over supports, except in ceiling applications where intermediate supports or gypsum board back-blocking is provided behind end joints. Do not place tapered edges against cut edges or ends. Stagger vertical joints on opposite sides of partitions. Do not make joints other than control joints at corners of framed openings.

E. Form control and expansion joints with space between edges of adjoining gypsum panels.

F. Cover both faces of support framing with gypsum panels in concealed spaces (above ceilings, etc.), except in chases braced internally.

1. Unless concealed application is indicated or required for sound, fire, air, or smoke ratings, coverage may be accomplished with scraps of not less than 8 sq. ft. (0.7 sq. m) in area.
2. Fit gypsum panels around ducts, pipes, and conduits.
3. Where partitions intersect structural members projecting below underside of floor/roof slabs and decks, cut gypsum panels to fit profile formed by structural members; allow 1/4- to 3/8-inch- (6.4- to 9.5-mm-) wide joints to install sealant.

G. Isolate perimeter of gypsum board applied to non-load-bearing partitions at structural abutments, except floors. Provide 1/4- to 1/2-inch- (6.4- to 12.7-mm-) wide spaces at these locations and trim edges with edge trim where edges of panels are exposed. Seal joints between edges and abutting structural surfaces with acoustical sealant.

H. Attachment to Steel Framing: Attach panels so leading edge or end of each panel is attached to open (unsupported) edges of stud flanges first.

I. STC-Rated Assemblies: Seal construction at perimeters, behind control joints, and at openings and penetrations with a continuous bead of acoustical sealant. Install acoustical sealant at both faces of partitions at perimeters and through penetrations. Comply with ASTM C 919 and with manufacturer's written recommendations for locating edge trim and closing off sound-flanking paths around or through assemblies, including sealing partitions above acoustical ceilings.

J. Install sound attenuation blankets before installing gypsum panels unless blankets are readily installed after panels have been installed on one side.

3.3 APPLYING INTERIOR GYPSUM BOARD

A. Install interior gypsum board in the following locations:

1. Wallboard Type: As indicated on Drawings.
2. Type X: As indicated on Drawings and at all fire rated assemblies.
3. Flexible Type: As indicated on Drawings.
4. Ceiling Type: As indicated on Drawings.
5. Abuse-Resistant Type: At interior of exterior walls and whiteboard walls.
6. Impact-Resistant Type: At lobbies, entries and corridors
7. Moisture- and Mold-Resistant Type: As indicated on Drawings and at all wet areas and as tile backer.
8. Glass-Mat Interior Type: At all plumbing wall with or without tile.

B. Single-Layer Application:

1. On ceilings, apply gypsum panels before wall/partition board application to greatest extent possible and at right angles to framing unless otherwise indicated.
2. On partitions/walls, apply gypsum panels horizontally (perpendicular to framing) unless otherwise indicated or required by fire-resistance-rated assembly, and minimize end joints.

    a. Stagger abutting end joints not less than one framing member in alternate courses of panels.
    b. At stairwells and other high walls, install panels horizontally unless otherwise indicated or required by fire-resistance-rated assembly.

3. On Z-furring members, apply gypsum panels vertically (parallel to framing) with no end joints. Locate edge joints over furring members.
4. Fastening Methods: Apply gypsum panels to supports with steel drill screws.

C. Multilayer Application:

1. On ceilings, apply gypsum board indicated for base layers before applying base layers on walls/partitions; apply face layers in same sequence. Apply base layers at right angles to framing members and offset face-layer joints one framing member, 16 inches (400 mm) minimum, from parallel base-layer joints, unless otherwise indicated or required by fire-resistance-rated assembly.
2. On partitions/walls, apply gypsum board indicated for base layers and face layers vertically (parallel to framing) with joints of base layers located over stud or furring member and face-layer joints offset at least one stud or furring member with base-layer joints, unless otherwise indicated or required by fire-resistance-rated assembly. Stagger joints on opposite sides of partitions.

3. On Z-furring members, apply base layer vertically (parallel to framing) and face layer either vertically (parallel to framing) or horizontally (perpendicular to framing) with vertical joints offset at least one furring member. Locate edge joints of base layer over furring members.
4. Fastening Methods: Fasten base layers and face layers separately to supports with screws.

D. Laminating to Substrate: Where gypsum panels are indicated as directly adhered to a substrate (other than studs, joists, furring members, or base layer of gypsum board), comply with gypsum board manufacturer's written recommendations and temporarily brace or fasten gypsum panels until fastening adhesive has set.

E. Curved Surfaces:

1. Install panels horizontally (perpendicular to supports) and unbroken, to extent possible, across curved surface plus 12-inch- (300-mm-) long straight sections at ends of curves and tangent to them.
2. For double-layer construction, fasten base layer to studs with screws 16 inches (400 mm) o.c. Center gypsum board face layer over joints in base layer, and fasten to studs with screws spaced 12 inches (300 mm) o.c.

3.4 INSTALLING TRIM ACCESSORIES

A. General: For trim with back flanges intended for fasteners, attach to framing with same fasteners used for panels. Otherwise, attach trim according to manufacturer's written instructions.

B. Control Joints: Install control joints at locations indicated on Drawings and according to ASTM C 840 and in specific locations approved by Architect for visual effect.

C. Interior Trim: Install in the following locations:

1. Cornerbead: Use at outside corners unless otherwise indicated.
2. Bullnose Bead: Use at outside corners.
3. LC-Bead: Use at exposed panel edges.
4. L-Bead: Use where indicated.
5. U-Bead: Use at exposed panel edges and where indicated.
6. Curved-Edge Cornerbead: Use at curved openings.

3.5 FINISHING GYPSUM BOARD

A. General: Treat gypsum board joints, interior angles, edge trim, control joints, penetrations, fastener heads, surface defects, and elsewhere as required to prepare gypsum board surfaces for decoration. Promptly remove residual joint compound from adjacent surfaces.

B. Prefill open joints, rounded or beveled edges, and damaged surface areas.

C. Apply joint tape over gypsum board joints, except for trim products specifically indicated as not intended to receive tape.

D. Gypsum Board Finish Levels: Finish panels to levels indicated below and according to ASTM C 840 and Gypsum Association GA 214-10:

1. Level 1:

a. All joints and interior angles shall have tape set in joint compound. Surface shall be free of excess joint compound. Minor tool marks and ridges are acceptable:

1) At ceiling plenum areas, concealed areas, behind metal lockers, behind built-in millwork, and where indicated.

2. Level 2:

a. All joints and interior angles shall have tape embedded in joint compound and wiped with joint knife leaving a thin coating of joint compound over all joints and interior angles. Fastener heads and accessories shall be covered with a coat of joint compound. Surface shall be free of excess joint compound. Minor tools marks and ridges are acceptable. Joint compound applied over the body of the tape at the time of tape embedment shall be considered a separate coat of joint compound and shall satisfy the conditions of this level:

1) At gypsum panels that are substrate for tile or acoustical tile, and where indicated on Drawings.

3. Level 3:

a. All joints and interior angles shall have tape embedded in joint compound and shall be immediately wiped with joint knife leaving a thin coating of joint compound over all joints and interior angles. One additional coat of joint compound shall be applied over all joints and interior angles. Fastener heads and accessories shall be covered with two separate coats of joint compound. All joint compound shall be smooth and free of tool marks and ridges:

1) At panel surfaces receiving medium- or heavy-textured finishes before painting, or heavy wallcoverings where lighting conditions are not critical, and where indicated on Drawings.

4. Level 4:

a. All joints and interior angles shall have tape embedded in joint compound and shall be immediately wiped with joint knife leaving a thin coating of joint compound over all joints and interior angles. Two separate coats of joint compound shall be applied over all flat joints and one separate coat of joint compound shall be applied over interior angles. Fastener heads and accessories shall be covered with three separate coats of joint compound. All joint compound shall be smooth and free of tool marks and ridges. Prepared surfaces shall be coated with drywall primer prior to application of final finishes:

1) At panel surfaces receiving light-textured finishes, wallcoverings, and flat paints, and at panel surfaces that will be exposed to view unless otherwise indicated. This is generally the standard exposed finish, unless noted otherwise. Not recommended where glossy or semi-glass enamel paints are specified.

b. Primer and its application to surfaces are specified in other Section 099123 “Painting.”

5. Level 5:

a. All joints and interior angles shall have tape embedded in joint compound and shall be immediately wiped with joint knife leaving a thin coating of joint compound over all joints and interior angles. Two separate coats of joint compound shall be applied over all flat joints and one separate coat of joint compound shall be applied over interior angles. Fastener heads and accessories shall be covered with three separate coats of joint compound. A thin skim coat of joint compound trowel applied, or a material manufactured especially for this purpose and applied in accordance with manufacturer’s recommendations, applied to entire surface. The surface shall be smooth and free of tool marks and ridges. Prepared surfaces shall be coated with drywall primer prior to application of final finishes:

1) At panel surfaces receiving gloss and semigloss enamels and other surfaces subject to severe lighting, and where indicated on Drawings.

b. Primer and its application to surfaces are specified in other Section 099123 “Painting.”

3.6 PROTECTION

A. Protect adjacent surfaces from drywall compound and promptly remove from floors and other non-drywall surfaces. Repair surfaces stained, marred, or otherwise damaged during drywall application.

B. Protect installed products from damage from weather, condensation, direct sunlight, construction, and other causes during remainder of the construction period.

C. Remove and replace panels that are wet, moisture damaged, and mold damaged.

1. Indications that panels are wet or moisture damaged include, but are not limited to, discoloration, sagging, or irregular shape.
2. Indications that panels are mold damaged include, but are not limited to, fuzzy or splotchy surface contamination and discoloration.

3.7 WASTE MANAGEMENT

A. Coordinate with Section 01 74 19.

1. Separate and recycle cut-offs and waste materials and material packaging in accordance with Waste Management Plan and to the maximum extent economically feasible and place in designated areas for recycling.
2. Set aside and protect materials suitable for reuse and/or remanufacturing.
3. Separate and fold up metal banding; flatten and place along with other scrap for recycling.

END OF SECTION 09 29 00

SECTION 09 51 23 - ACOUSTICAL CEILING TILES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This section includes the performance criteria, materials, production, and erection of continuous/wall-to-wall acoustical tile ceilings for the project. The work performed under this Section consists of the provision of all plant, materials, labor and equipment and the like necessary and/or required for the complete execution of all acoustical tile ceilings as required by the this section, schedules, keynotes and drawings, including, but not limited to the following:

1. Acoustical tiles for ceilings.
2. Exposed grid suspension systems.
3. Wire hangers, fasteners, main runners, cross tees, and wall angle moldings.
4. Perimeter trim

1.3 PRE-INSTALLATION MEETINGS

A. Pre-installation Conference: Conduct conference at Project site.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Samples: For each exposed product and for each color and texture specified, 6-inches- (150-mm-) in size.

C. Samples for Initial Selection: For components with factory-applied color finishes.

D. Samples for Verification: For each component indicated and for each exposed finish required, prepared on Samples of size indicated below.

1. Acoustical Tile: Set of full-size Samples of each type, color, pattern, and texture.
2. Concealed Suspension-System Members: 6-inch- (150-mm-) long Sample of each type.
3. Exposed Moldings and Trim: Set of 6-inch- (150-mm-) long Samples of each type and color.

1.5 INFORMATIONAL SUBMITTALS

A. Coordination Drawings: Reflected ceiling plans, drawn to scale, on which the following items are shown and coordinated with each other, using input from installers of the items involved:

1. Ceiling suspension-system members.
2. Method of attaching hangers to building structure.

a. Furnish layouts for cast-in-place anchors, clips, and other ceiling attachment devices whose installation is specified in other Sections.

3. Size and location of initial access modules for acoustical tile.
4. Ceiling-mounted items including lighting fixtures, diffusers, grilles, speakers, sprinklers, access panels, and special moldings.
5. Minimum Drawing Scale: 1/8 inch = 1 foot (1:96).

B. Qualification Data: For testing agency.

C. Product Test Reports: For each acoustical tile ceiling, for tests performed by manufacturer and witnessed by a qualified testing agency.

D. Evaluation Reports: For each acoustical tile ceiling suspension system and anchor and fastener type, from ICC-ES.

E. Field quality-control reports.

1.6 CLOSEOUT SUBMITTALS

A. Maintenance Data: For finishes to include in maintenance manuals.

1.7 MAINTENANCE MATERIAL SUBMITTALS

A. Furnish extra materials that match products installed and that are packaged with protective covering for storage and identified with labels describing contents.

1. Acoustical Ceiling Units: Full-size tiles equal to **2** percent of quantity installed.
2. Suspension-System Components: Quantity of each concealed grid and exposed component equal to **2** percent of quantity installed.

1.8 QUALITY ASSURANCE

A. Testing Agency Qualifications: Qualified according to the National Voluntary Laboratory Accreditation Program (NVLAP) for testing indicated.

B. Single-Source Responsibility: Provide acoustical panel units and grid components by a single manufacturer.

C. Acoustical Panels: As with other architectural features located at the ceiling, may obstruct or skew the planned fire sprinkler water distribution pattern through possibly delay or accelerate

the activation of the sprinkler or fire detection systems by channeling heat from a fire either toward or away from the device. Designers and installers are advised to consult a fire protection engineer, NFPA 13, or their local codes for guidance where automatic fire detection and suppression systems are present.

D. Coordination of Work: Coordinate acoustical ceiling work with installers of related work including, but not limited to building insulation, gypsum board, light fixtures, mechanical systems, electrical systems, and sprinklers.

E. 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 mockup of typical ceiling area as shown on Drawings.
2. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.9 DELIVERY, STORAGE, AND HANDLING

A. Deliver acoustical tiles, suspension-system components, and accessories to Project site in original, unopened packages and store them in a fully enclosed, conditioned space where they will be protected against damage from moisture, humidity, temperature extremes, direct sunlight, surface contamination, and other causes.

B. Before installing acoustical tiles, permit them to reach room temperature and a stabilized moisture content.

C. Handle acoustical tiles carefully to avoid chipping edges or damaging units in any way.

1.10 WARRANTY

A. Acoustical Panel: Submit a written warranty executed by the manufacturer, agreeing to repair or replace panels that fail within the warranty period. Failures include, but are not limited to the following:
1. Acoustical Panels: Sagging and warping
2. Grid System: Rusting and manufacturer's defects
3.

B. Warranty Period:
1. Acoustical panels: Ten (10) years from date of substantial completion.
2. Grid: Ten (10) years from date of substantial completion.
3. Acoustical panels and grid systems with HumiGuard Plus or HumiGuard Max performance supplied by one source manufacturer is Thirty (30) years from date of substantial completion.

C. The Warranty shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and will be in addition to and run concurrent with other warranties made by the Contractor under the requirements of the Contract Documents.

1.11 FIELD CONDITIONS

A. Environmental Limitations: Do not install acoustical tile ceilings until spaces are enclosed and weatherproof, wet work in spaces is complete and dry, work above ceilings is complete, and ambient temperature and humidity conditions are maintained at the levels indicated for Project when occupied for its intended use.

1. Pressurized Plenums: Operate ventilation system for not less than 48 hours before beginning acoustical tile ceiling installation.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Seismic Performance: Acoustical ceiling shall withstand the effects of earthquake motions determined according to ASCE/SEI 7.

1. Design and size components to withstand seismic loads in accordance with the minimum established by ASTM C636.

B. Surface-Burning Characteristics: Comply with ASTM E 84; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

1. Flame-Spread Index: Comply with ASTM E 1264 for Class A materials.
2. Smoke-Developed Index: 50 or less.

C. Fire-Resistance Ratings: Comply with ASTM E 119; testing by a qualified testing agency. Identify products with appropriate markings of applicable testing agency.

1. Indicate design designations from UL's "Fire Resistance Directory" or from the listings of another qualified testing agency.

2.2 ACOUSTICAL TILES, GENERAL

A. Source Limitations: Obtain each type of acoustical ceiling tile and supporting suspension system from single source from single manufacturer.

B. Recycled Content: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 25 percent (refer to specific acoustic tile).

C. Acoustical Tile Standard: Provide manufacturer's standard tiles of configuration indicated that comply with ASTM E 1264 classifications as designated by types, patterns, acoustical ratings, and light reflectances unless otherwise indicated.

1. Mounting Method for Measuring NRC: Type E-400; plenum mounting in which face of test specimen is 15-3/4 inches (400 mm) away from test surface according to ASTM E 795.

D. Acoustical Tile Colors and Patterns: Match appearance characteristics indicated for each product type.

1. Where appearance characteristics of acoustical tiles are indicated by referencing pattern designations in ASTM E 1264 and not manufacturers' proprietary product designations, provide products selected by Architect from each manufacturer's full range that comply with requirements indicated for type, pattern, color, light reflectance, acoustical performance, edge detail, and size.

E. Provide glass-fiber based panels made with binder containing no urea formaldehyde.

2.3 ACOUSTICAL TILES

A. Basis-of-Design Product: Subject to compliance with requirements, provide Armstrong Industries products as indicated on Drawings or comparable product by one of the following:
1. CertainTeed Corp.
2. USG Interiors, Inc.; Subsidiary of USG Corporation.

B. ACT-1: Armstrong Optima Tegular, 3251 (Classrooms/Corridors or as indicated in drawings)
1. Surface Texture: Fine.
2. Composition: Fiberglass.
3. Color: White.
4. Size: 24IN x 48IN
5. Edge Profile: Square Tegular 9/16IN for interface with Suprafine XL 9/16" Exposed Tee grid.
6. Noise Reduction Coefficient(NRC): ASTM C 423; Classified with UL label on product carton 0.95.
7. Ceiling Attenuation Class (CAC)
8. Sabin: N/A
9. Articulation Class (AC): ASTM E 1111; 190.
10. Flame Spread: ASTM E 1264; Class A (UL).
11. Light Reflectance White Panel: ASTM E 1477; 0.90.
12. Dimensional Stability: HumiGuard Plus.
13. Recycle Content: Post-Consumer - 12% Pre-Consumer Waste - 59%.

2.4 METAL SUSPENSION SYSTEMS, GENERAL

A. Recycled Content: Postconsumer recycled content plus one-half of preconsumer recycled content not less than 25 percent.

B. Metal Suspension-System Standard: Provide manufacturer's standard metal suspension systems of types, structural classifications, and finishes indicated that comply with applicable requirements in ASTM C 635/C 635M.

C. Wire Hangers, Braces, and Ties: Provide wires complying with the following requirements:

1. Zinc-Coated, Carbon-Steel Wire: ASTM A 641/A 641M, Class 1 zinc coating, soft temper.

2. Size: Select wire diameter so its stress at three times hanger design load (ASTM C 635/C 635M, Table 1, "Direct Hung") will be less than yield stress of wire, but provide not less than 0.135-inch- (3.5-mm-) diameter wire.

D. Flat Hangers: Mild steel, zinc coated or protected with rust-inhibitive paint.

E. Angle Hangers: Angles with legs not less than 7/8 inch (22 mm) wide; formed with 0.04-inch- (1-mm-) thick, galvanized-steel sheet complying with ASTM A 653/A 653M, G90 (Z275) coating designation; with bolted connections and 5/16-inch- (8-mm-) diameter bolts.

F. Seismic Struts: Manufacturer's standard compression struts designed to accommodate lateral forces.

G. Seismic Clips: Manufacturer's standard seismic clips designed and spaced to secure acoustical tiles in-place.

2.5 METAL SUSPENSION SYSTEM

A. Basis-of-Design Product: Subject to compliance with requirements, Armstrong product or provide comparable product by one of the following:

1. Armstrong World Industries, Inc.
2. USG Interiors, Inc.; Subsidiary of USG Corporation.

B. Pair suspension systems with the following ACT and ATC types:
1. ACT-1: 9/16 inch Suprafine XL.

C. Direct-Hung, Double-Web Suspension System Components: Main beams and cross tees, base metal and end detail, fabricated from commercial quality hot dipped galvanized steel complying with ASTM A 653. Main beams and cross tees are double-web steel construction with exposed flange design. Exposed surfaces chemically cleansed, capping prefinished galvanized steel in baked polyester paint. Main beams and cross tees shall have rotary stitching.
a. Structural Classification: ASTM C 635 Intermediate Duty
b. Color: White and match the actual color of the selected ceiling tile, unless noted otherwise.
c. Acceptable Product: Suprafine XL 9/16" Exposed Tee as manufactured by Armstrong World Industries

D. Attachment Devices: Size for five times design load indicated in ASTM C 635, Table 1, Direct Hung unless otherwise indicated.

E. Wire for Hangers and Ties: ASTM A 641, Class 1 zinc coating, soft annealed, with a yield stress load of at least time three design load, but not less than 12 gauge.
1. Access: Upward and end pivoted or side pivoted, with initial access openings of size indicated below and located throughout ceiling within each module formed by main and cross runners, with additional access available by progressively removing remaining acoustical tiles.

2.6 METAL EDGE MOLDINGS AND TRIM

A. Manufacturers – Basis of Design: Subject to compliance with requirements, Armstrong product or provide comparable product by one of the following:
   1. USG Interiors, Inc.; Subsidiary of USG Corporation.

B. Products – 2" Axiom trim, or equal

C. Roll-Formed, Sheet-Metal Edge Moldings and Trim: Type and profile indicated or, if not indicated, manufacturer's standard moldings for edges and penetrations complying with seismic design requirements; formed from sheet metal of same material, finish, and color as that used for exposed flanges of suspension-system runners.

   1. Provide manufacturer's standard edge moldings that fit acoustical tile edge details and suspension systems indicated and that match width and configuration of exposed runners unless otherwise indicated.
   2. For circular penetrations of ceiling, provide edge moldings fabricated to diameter required to fit penetration exactly.

2.7 ACOUSTICAL SEALANT

A. Products: Subject to compliance with requirements, provide one of the following:

   1. Acoustical Sealant for Exposed and Concealed Joints:

      a. Pecora Corporation; AC-20 FTR Acoustical and Insulation Sealant.
      b. USG Corporation; SHEETROCK Acoustical Sealant.

   2. Acoustical Sealant for Concealed Joints:

      a. Henkel Corporation; OSI Sealants Pro-Series SC-175 Rubber Base Sound Sealant.
      b. Pecora Corporation; AIS-919.
      c. Tremco, Inc.; Tremco Acoustical Sealant.

B. Acoustical Sealant: Manufacturer's standard sealant complying with ASTM C 834 and effective in reducing airborne sound transmission through perimeter joints and openings in building construction as demonstrated by testing representative assemblies according to ASTM E 90.

   1. Exposed and Concealed Joints: Nonsag, paintable, nonstaining latex sealant.
   2. Concealed Joints: Nondrying, nonhardening, nonskinning, nonstaining, gunnable, synthetic-rubber sealant.
   3. Acoustical sealant shall have a VOC content of 250 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

2.8 MISCELLANEOUS MATERIALS

A. Acoustical Tile Adhesive: Type recommended by acoustical tile manufacturer, bearing UL label for Class 0-25 flame spread.

1. Adhesive shall have a VOC content of 50 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

B. Staples: 5/16-inch- (8-mm-) long, divergent-point staples.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, areas, and conditions, including structural framing and substrates to which acoustical tile ceilings attach or abut, with Installer present, for compliance with requirements specified in this and other Sections that affect ceiling installation and anchorage and for compliance with requirements for installation tolerances and other conditions affecting performance of the Work.

B. Examine acoustical tiles before installation. Reject acoustical tiles that are wet, moisture damaged, or mold damaged.

C. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Testing Substrates: Before installing adhesively applied tiles on wet-placed substrates such as cast-in-place concrete or plaster, test and verify that moisture level is below tile manufacturer's recommended limits.

B. Measure each ceiling area and establish layout of acoustical tiles to balance border widths at opposite edges of each ceiling. Avoid using less-than-half-width tiles at borders, and comply with layout shown on reflected ceiling plans.

3.3 INSTALLATION OF SUSPENDED ACOUSTICAL TILE CEILINGS

A. General: Install acoustical panel ceilings to comply with ASTM C 636/C 636M and seismic design requirements indicated, according to manufacturer's written instructions and CISCA's "Ceiling Systems Handbook."

B. Suspend ceiling hangers from building's structural members and as follows:

1. Install hangers plumb and free from contact with insulation or other objects within ceiling plenum that are not part of supporting structure or of ceiling suspension system.
2. Splay hangers only where required to miss obstructions; offset resulting horizontal forces by bracing, countersplaying, or other equally effective means.
3. Where width of ducts and other construction within ceiling plenum produces hanger spacings that interfere with location of hangers at spacings required to support standard suspension-system members, install supplemental suspension members and hangers in form of trapezes or equivalent devices.
4. Secure wire hangers to ceiling suspension members and to supports above with a minimum of three tight turns. Connect hangers directly either to structures or to inserts, eye screws, or other devices that are secure and appropriate for substrate and that will not deteriorate or otherwise fail due to age, corrosion, or elevated temperatures.

5. Secure flat, angle, channel, and rod hangers to structure, including intermediate framing members, by attaching to inserts, eye screws, or other devices that are secure and appropriate for both the structure to which hangers are attached and the type of hanger involved. Install hangers in a manner that will not cause them to deteriorate or fail due to age, corrosion, or elevated temperatures.
6. Do not support ceilings directly from permanent metal forms or floor deck. Fasten hangers to cast-in-place hanger inserts, postinstalled mechanical or adhesive anchors, or power-actuated fasteners that extend through forms into concrete.
7. When steel framing does not permit installation of hanger wires at spacing required, install carrying channels or other supplemental support for attachment of hanger wires.
8. Do not attach hangers to steel deck tabs.
9. Do not attach hangers to steel roof deck. Attach hangers to structural members.
10. Space hangers not more than 48 inches (1200 mm) o.c. along each member supported directly from hangers unless otherwise indicated; provide hangers not more than 8 inches (200 mm) from ends of each member.
11. Size supplemental suspension members and hangers to support ceiling loads within performance limits established by referenced standards and publications.

C. Secure bracing wires to ceiling suspension members and to supports with a minimum of four tight turns. Suspend bracing from building's structural members as required for hangers without attaching to permanent metal forms, steel deck, or steel deck tabs. Fasten bracing wires into concrete with cast-in-place or postinstalled anchors.

D. Install edge moldings and trim of type indicated at perimeter of acoustical tile ceiling area and where necessary to conceal edges of acoustical tiles.

1. Apply acoustical sealant in a continuous ribbon concealed on back of vertical legs of moldings before they are installed.
2. Screw attach moldings to substrate at intervals not more than 16 inches (400 mm) o.c. and not more than 3 inches (75 mm) from ends, leveling with ceiling suspension system to a tolerance of 1/8 inch in 12 feet (3.2 mm in 3.6 m). Miter corners accurately and connect securely.
3. Do not use exposed fasteners, including pop rivets, on moldings and trim.

E. Install suspension-system runners so they are square and securely interlocked with one another. Remove and replace dented, bent, or kinked members.

F. Arrange directionally patterned acoustical tiles as follows:

1. As indicated on reflected ceiling plans.

G. Install acoustical tiles in coordination with suspension system and exposed moldings and trim. Place splines or suspension-system flanges into kerfed edges so tile-to-tile joints are closed by double lap of material.

1. Fit adjoining tile to form flush, tight joints. Scribe and cut tile for accurate fit at borders and around penetrations through tile.
2. Hold tile field in compression by inserting leaf-type, spring-steel spacers between tile and moldings, spaced 12 inches (305 mm) o.c.
3. Protect lighting fixtures and air ducts to comply with requirements indicated for fire-resistance-rated assembly.

3.4 FIELD QUALITY CONTROL

A. Special Inspections: Owner will engage a qualified special inspector to perform the following special inspections:

1. Compliance of seismic design.

B. Testing Agency: Owner will engage a qualified testing agency to perform tests and inspections and prepare test reports.

C. Perform the following tests and inspections of completed installations of acoustical tile ceiling hangers and anchors and fasteners in successive stages and when installation of ceiling suspension systems on each floor has reached 20 percent completion but no tiles have been installed. Do not proceed with installations of acoustical tile ceiling hangers for the next area until test results for previously completed installations of acoustical tile ceiling hangers show compliance with requirements.

1. Within each test area, testing agency will select one of every 10 power-actuated fasteners and postinstalled anchors used to attach hangers to concrete and will test them for 200 lbf (890 N) of tension; it will also select one of every two postinstalled anchors used to attach bracing wires to concrete and will test them for 440 lbf (1957 N) of tension.
2. When testing discovers fasteners and anchors that do not comply with requirements, testing agency will test those anchors not previously tested until 20 pass consecutively and then will resume initial testing frequency.

D. Acoustical tile ceiling hangers and anchors and fasteners will be considered defective if they do not pass tests and inspections.

E. Prepare test and inspection reports.

3.5 CLEANING

A. Clean exposed surfaces of acoustical tile ceilings, including trim and edge moldings. Comply with manufacturer's written instructions for cleaning and touchup of minor finish damage. Remove and replace tiles and other ceiling components that cannot be successfully cleaned and repaired to permanently eliminate evidence of damage.

3.6 WASTE MANAGEMENT

A. Coordinate with Section 01 74 19.

1. Separate and recycle cut-offs and waste materials and material packaging in accordance with Waste Management Plan and to the maximum extent economically feasible and place in designated areas for recycling.
2. Set aside and protect materials suitable for reuse and/or remanufacturing.
3. Separate and fold up metal banding; flatten and place along with other metal scrap for recycling in designated area.

END OF SECTION 09 51 23

SECTION 09 65 13 - RESILIENT BASE AND ACCESSORIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This section includes the performance criteria, materials, production, and erection of resilient base and accessories for the project. The work performed under this Section consists of the provision of all plant, materials, labor and equipment and the like necessary and/or required for the complete execution of all resilient base and accessories as required by this section, schedules, keynotes and drawings, including, but not limited to the following:

1. Resilient base.
2. Resilient molding accessories.

1.3 ACTION SUBMITTALS

A. Product Data: For each type of product.

B. Samples: For each exposed product and for each color and texture specified, not less than 12 inches (300 mm) long.

C. Samples for Initial Selection: For each type of product indicated.

D. Samples for Verification: For each type of product indicated and for each color, texture, and pattern required in manufacturer's standard-size Samples, but not less than 12 inches (300 mm) long.

E. Product Schedule: For resilient base and accessory products. Use same designations indicated on Drawings.

1.4 MAINTENANCE MATERIAL SUBMITTALS

A. No extra material to be purchased for purpose of attic stock. All left over material from construction to constitute attic stock – store, maintain and protect accordingly. Package with protective covering for storage and identified with labels describing contents.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Store resilient products and installation materials in dry spaces protected from the weather, with ambient temperatures maintained within range recommended by manufacturer, but not less than 50 deg F (10 deg C) or more than 90 deg F (32 deg C).

1.6 FIELD CONDITIONS

A. Maintain ambient temperatures within range recommended by manufacturer, but not less than 70 deg F (21 deg C) or more than 95 deg F (35 deg C), in spaces to receive resilient products during the following time periods:

1. 48 hours before installation.
2. During installation.
3. 48 hours after installation.

B. After installation and until Substantial Completion, maintain ambient temperatures within range recommended by manufacturer, but not less than 55 deg F (13 deg C) or more than 95 deg F (35 deg C).

C. Install resilient products after other finishing operations, including painting, have been completed.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. FloorScore Compliance: Resilient base shall comply with requirements of FloorScore certification.

2.2 THERMOPLASTIC-RUBBER BASE

A. Basis of Design: Subject to compliance with requirements, provide Johnsonite; Baseworks 4 ” **or** comparable products by one of the following:

1. Mannington
2. Armstrong World Industries, Inc.
3. Burke Mercer Flooring Products, Division of Burke Industries Inc.
4. Flexco.
5. Mondo Rubber International, Inc.
6. Nora Systems, Inc.
7. Roppe Corporation, USA.
8. VPI, LLC, Floor Products Division.

B. Product Standard: Johnsonite Baseworks Cove Base.

1. Group: I (solid, homogeneous).
2. Style and Location:

1) Profile: 4” Cove

C. Thickness: 5/16"(7.94 mm).

D. Height: 4 "

E. Lengths: Length shall not be less than 1/3 of the length of a wall but not less than 3’-0 whichever is longer.

F. Outside Corners: Pre-Mitered.

G. Inside Corners: Pre-Mitered.

H. Colors: Black Magic B

2.3 RUBBER MOLDING ACCESSORY

A. Manufacturers: Subject to compliance with requirements, provide products by one of the following:
1. Johnsonite
2. Mannington
3. Roppe Corporation, USA.
4. VPI, LLC, Floor Products Division.

B. Description: Rubber cap for cove carpet; cap for cove resilient flooring; carpet bar for tackless installations; carpet edge for glue-down applications; nosing for carpet; nosing for resilient flooring; reducer strip for resilient flooring; joiner for tile and carpet; transition strips.

C. Profile and Dimensions: As indicated.

D. Locations: Provide rubber molding accessories in areas indicated.

E. Colors and Patterns: As selected by Architect from full range of industry colors.

2.4 INSTALLATION MATERIALS

A. Trowelable Leveling and Patching Compounds: Latex-modified, portland cement based or blended hydraulic-cement-based formulation provided or approved by resilient-product manufacturer for applications indicated.

B. Adhesives: Water-resistant type recommended by resilient-product manufacturer for resilient products and substrate conditions indicated.

1. Adhesives shall have a VOC content of 50 g/L or less except that adhesive for rubber stair treads shall have a VOC content of 60 g/L or less.

C. Metal Edge Strips: Extruded aluminum with mill finish of width shown, of height required to protect exposed edges of flooring, and in maximum available lengths to minimize running joints.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates, with Installer present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.

1. Verify that finishes of substrates comply with tolerances and other requirements specified in other Sections and that substrates are free of cracks, ridges, depressions, scale, and foreign deposits that might interfere with adhesion of resilient products.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

1. Installation of resilient products indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Prepare substrates according to manufacturer's written instructions to ensure adhesion of resilient products.

B. Concrete Substrates for Resilient Stair Accessories: Prepare horizontal surfaces according to ASTM F 710.

1. Verify that substrates are dry and free of curing compounds, sealers, and hardeners.
2. Remove substrate coatings and other substances that are incompatible with adhesives and that contain soap, wax, oil, or silicone, using mechanical methods recommended by manufacturer. Do not use solvents.
3. Alkalinity and Adhesion Testing: Perform tests recommended by manufacturer. Proceed with installation only after substrate alkalinity falls within range on pH scale recommended by manufacturer in writing, but not less than 5 or more than 9 pH.
4. Moisture Testing: Proceed with installation only after substrates pass testing according to manufacturer's written recommendations, but not less stringent than the following:

    a. Perform anhydrous calcium chloride test according to ASTM F 1869. Proceed with installation only after substrates have maximum moisture-vapor-emission rate of 3 lb of water/1000 sq. ft. (1.36 kg of water/92.9 sq. m) in 24 hours.
    b. Perform relative humidity test using in situ probes according to ASTM F 2170. Proceed with installation only after substrates have maximum 75 percent relative humidity level.

C. Fill cracks, holes, and depressions in substrates with trowelable leveling and patching compound; remove bumps and ridges to produce a uniform and smooth substrate.

D. Do not install resilient products until they are the same temperature as the space where they are to be installed.

1. At least 48 hours in advance of installation, move resilient products and installation materials into spaces where they will be installed.

E. Immediately before installation, sweep and vacuum clean substrates to be covered by resilient products.

3.3 RESILIENT BASE INSTALLATION

A. Comply with manufacturer's written instructions for installing resilient base.

B. Apply resilient base to walls, columns, pilasters, casework and cabinets in toe spaces, and other permanent fixtures in rooms and areas where base is required.

C. Install resilient base in lengths as long as practical without gaps at seams and with tops of adjacent pieces aligned.

D. Tightly adhere resilient base to substrate throughout length of each piece, with base in continuous contact with horizontal and vertical substrates.

E. Do not stretch resilient base during installation.

F. On masonry surfaces or other similar irregular substrates, fill voids along top edge of resilient base with manufacturer's recommended adhesive filler material.

G. Preformed Corners: Install preformed corners before installing straight pieces.

H. Job-Formed Corners:

1. Outside Corners: Use straight pieces of maximum lengths possible and form with returns not less than 3 inches (76 mm) in length.

    a. Form without producing discoloration (whitening) at bends.

2. Inside Corners: Use straight pieces of maximum lengths possible and form with returns not less than 3 inches (76 mm) in length.

    a. Miter or cope corners to minimize open joints.

3.4 RESILIENT ACCESSORY INSTALLATION

A. Comply with manufacturer's written instructions for installing resilient accessories.

B. Resilient Stair Accessories:

1. Use stair-tread-nose filler to fill nosing substrates that do not conform to tread contours.
2. Tightly adhere to substrates throughout length of each piece.
3. For treads installed as separate, equal-length units, install to produce a flush joint between units.

C. Resilient Molding Accessories: Butt to adjacent materials and tightly adhere to substrates throughout length of each piece. Install reducer strips at edges of floor covering that would otherwise be exposed.

3.5 CLEANING AND PROTECTION

A. Comply with manufacturer's written instructions for cleaning and protecting resilient products.

B. Perform the following operations immediately after completing resilient-product installation:

1. Remove adhesive and other blemishes from exposed surfaces.
2. Sweep and vacuum horizontal surfaces thoroughly.
3. Damp-mop horizontal surfaces to remove marks and soil.

C. Protect resilient products from mars, marks, indentations, and other damage from construction operations and placement of equipment and fixtures during remainder of construction period.

D. Cover resilient products subject to wear and foot traffic until Substantial Completion.

3.6 WASTE MANAGEMENT

A. Coordinate with Section 01 74 19.

1. Separate and recycle cut-offs and waste materials and material packaging in accordance with Waste Management Plan and to the maximum extent economically feasible and place in designated areas for recycling.
2. Set aside and protect materials suitable for reuse and/or remanufacturing.
3. Separate and fold up metal banding; flatten and place along with other scrap for recycling.

END OF SECTION 09 65 13

SECTION 09 91 00 - PAINTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This section includes the performance criteria, materials, production, and erection of surface preparation and the application of paint systems for the project. The work performed under this Section consists of the provision of all plant, materials, labor and equipment and the like necessary and/or required for the complete execution of all surface preparation and the application of paint systems as required by the this section, schedules, keynotes and drawings, including, but not limited to the following substrates:

1. Concrete.
2. Concrete masonry units (CMU).
3. Steel.
4. Cast iron.
5. Galvanized metal.
6. Aluminum (not anodized or otherwise coated).
7. Wood.
8. Gypsum board.
9. Plaster.
10. Spray-textured ceilings.
11. ASJ insulation covering.

B. Related Requirements:

1. Division 05 "Structural Steel Framing" for shop priming of metal substrates with primers specified in this Section.

1.3 DEFINITIONS

A. Gloss Level 1 G! Matte or Flat Finish: Not more than 5 units at 60 degrees and 10 units at 85 degrees, according to ASTM D 523.

B. Gloss Level G2 Velvet Finish: Not more than 10 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.

C. Gloss Level G3 Eggshell Finish: 10 to 25 units at 60 degrees and 10 to 35 units at 85 degrees, according to ASTM D 523.

D. Gloss Level G4 Satin Finish: 20 to 35 units at 60 degrees and not less than 35 units at 85 degrees, according to ASTM D 523.

E. Gloss Level G5 Semi-Gloss Finish: 35 to 70 units at 60 degrees, according to ASTM D 523.

F. Gloss Level G6 Gloss Finish: 70 to 85 units at 60 degrees, according to ASTM D 523.

G. Gloss Level G7 High-Gloss Finish: More than 85 units at 60 degrees, according to ASTM D 523.

1.4 ACTION SUBMITTALS

A. Product Data: For each type of product. Include preparation requirements and application instructions.

B. Samples for Initial Selection: For each type of topcoat product.

C. Samples for Verification: For each type of paint system and in each color and gloss of topcoat.

1. Submit Samples on rigid backing, 8 inches square.
2. Step coats on Samples to show each coat required for system.
3. Label each coat of each Sample.
4. Label each Sample for location and application area.

D. Product List: For each product indicated, include the following:

1. Cross-reference to paint system and locations of application areas. Use same designations indicated on Drawings and in schedules.
2. Printout of current "MPI Approved Products List" for each product category specified in Part 2, with the proposed product highlighted.
3. VOC content.

1.5 MAINTENANCE MATERIAL SUBMITTALS

A. No extra material to be purchased for purpose of attic stock. All left over material from construction to constitute attic stock – store, maintain and protect accordingly. Package with protective covering for storage and identified with labels describing contents.

1.6 QUALITY ASSURANCE

A. Mockups: Apply mockups of each paint system indicated and each color and finish selected to verify preliminary selections made under Sample submittals and to demonstrate aesthetic effects and set quality standards for materials and execution.

1. Architect will select one surface to represent surfaces and conditions for application of each paint system specified in Part 3.

a. Vertical and Horizontal Surfaces: Provide samples of at least 100 sq. ft. (9 sq. m).
b. Other Items: Architect will designate items or areas required.

2. Final approval of color selections will be based on mockups.

    a. If preliminary color selections are not approved, apply additional mockups of additional colors selected by Architect at no added cost to Owner.

3. Approval of mockups does not constitute approval of deviations from the Contract Documents contained in mockups unless Architect specifically approves such deviations in writing.
4. Subject to compliance with requirements, approved mockups may become part of the completed Work if undisturbed at time of Substantial Completion.

1.7 DELIVERY, STORAGE, AND HANDLING

A. Store materials not in use in tightly covered containers in well-ventilated areas with ambient temperatures continuously maintained at not less than 45 deg F (7 deg C).

1. Maintain containers in clean condition, free of foreign materials and residue.
2. Remove rags and waste from storage areas daily.

1.8 FIELD CONDITIONS

A. Apply paints only when temperature of surfaces to be painted and ambient air temperatures are between 50 and 95 deg F (10 and 35 deg C).

B. Do not apply paints when relative humidity exceeds 85 percent; at temperatures less than 5 deg F (3 deg C) above the dew point; or to damp or wet surfaces.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide products by the following:

1. Akzo Nobel
2. Benjamin Moore & Co.
3. ICI Paints.
4. Kelly-Moore Paints.
5. Mastercoating technologies – Zolatone
6. PPG Architectural Finishes, Inc.
7. Sherwin-Williams Company (The)
8. Insl-X

2.2 PAINT, GENERAL

A. MPI Standards: Provide products that comply with MPI standards indicated and that are listed in its "MPI Approved Products List."

B. Material Compatibility:

1. Provide materials for use within each paint system that are compatible with one another and substrates indicated, under conditions of service and application as demonstrated by manufacturer, based on testing and field experience.
2. For each coat in a paint system, provide products recommended in writing by manufacturers of topcoat for use in paint system and on substrate indicated.

C. VOC Content: Products shall comply with VOC limits of authorities having jurisdiction and, for interior paints and coatings applied at Project site, the following VOC limits, exclusive of colorants added to a tint base, when calculated according to 40 CFR 59, Subpart D (EPA Method 24).

1. Flat Paints and Coatings: 50 g/L.
2. Nonflat Paints and Coatings: 150 g/L.
3. Dry-Fog Coatings: 400 g/L.
4. Primers, Sealers, and Undercoaters: 200 g/L.
5. Anticorrosive and Antirust Paints Applied to Ferrous Metals: 250 g/L.
6. Zinc-Rich Industrial Maintenance Primers: 340 g/L.
7. Pretreatment Wash Primers: 420 g/L.
8. Floor Coatings: 100 g/L.
9. Shellacs, Clear: 730 g/L.
10. Shellacs, Pigmented: 550 g/L.

D. Colors: As indicated in a finish schedule.

2.3 BLOCK FILLERS

A. Block Filler, Latex, Interior/Exterior: MPI #4.

1. Glidden Professional – Concrete Coatings Block Filler Interior / Exterior Primer.
2. Akzo Nobel.
3. Sherwin Williams – Preprite – Interior / Exterior Block filler.

2.4 PRIMERS/SEALERS

A. Primer Sealer, Latex, Interior: MPI #50.

1. Product by one of the approved manufacturers found in the MPI list.

B. Primer, Alkali Resistant, Water Based: MPI #3.

1. Product by one of the approved manufacturers found in the MPI list.

C. Primer Sealer, Interior, Institutional Low Odor/VOC: MPI #149.

1. Product by one of the approved manufacturers found in the MPI list.

D. Primer, Latex, for Interior Wood: MPI #39.

1. Product by one of the approved manufacturers found in the MPI list.

E. Primer Sealer, Alkyd, Interior: MPI #45.

1. Product by one of the approved manufacturers found in the MPI list.

F. Primer Sealer, Alkyd, Interior: MPI #69 (Gymnasium Ceiling).

1. Product by one of the approved manufacturers found in the MPI list.

G. Primer, Bonding, Water Based: MPI #17.

1. Product by one of the approved manufacturers found in the MPI list.

H. Primer, Bonding, Solvent Based: MPI #69.

1. Product by one of the approved manufacturers found in the MPI list.

I. Wood-Knot Sealer: Sealer recommended in writing by topcoat manufacturer for use in paint systems indicated.

2.5 METAL PRIMERS

A. Primer, Rust-Inhibitive, Water Based: MPI #107.

1. Product by one of the approved manufacturers found in the MPI list.

B. Primer, Alkyd, Anti-Corrosive, for Metal: MPI #79.

1. Product by one of the approved manufacturers found in the MPI list.

C. Primer, Alkyd, Quick Dry, for Metal: MPI #76.

1. Product by one of the approved manufacturers found in the MPI list.

D. Primer, Galvanized, Water Based: MPI #134.

1. Product by one of the approved manufacturers found in the MPI list.

E. Primer, Vinyl Wash: MPI #80.

1. Product by one of the approved manufacturers found in the MPI list.

F. Primer, Quick Dry, for Aluminum: MPI #95.

1. Product by one of the approved manufacturers found in the MPI list.

2.6 WATER-BASED PAINTS

A. Latex, Interior, Institutional Low Odor/VOC, Flat (Gloss Level 1): MPI #143.

1. Product by one of the approved manufacturers found in the MPI list.

B. Latex, Interior, Institutional Low Odor/VOC, (Gloss Level 2): MPI #144.

1. Product by one of the approved manufacturers found in the MPI list.

C. Latex, Interior, Institutional Low Odor/VOC, (Gloss Level 3): MPI #145.

1. Product by one of the approved manufacturers found in the MPI list.

D. Latex, Interior, Institutional Low Odor/VOC, Semi-Gloss (Gloss Level 5): MPI #147.

1. Product by one of the approved manufacturers found in the MPI list.

E. Acrylic, Interior, Institutional Low Odor/VOC, Multicolor MPI # 112.

1. Product by one of the approved manufacturers found in the MPI list.

F. Light Industrial Coating, Exterior, Water Based, Semi-Gloss (Gloss Level 5): MPI #163.

1. Product by one of the approved manufacturers found in the MPI list.

2.7 SOLVENT-BASED PAINTS

A. Alkyd, Interior, (Gloss Level 3): MPI #51.

1. Product by one of the approved manufacturers found in the MPI list.

B. Alkyd, Interior, (Flat) Spray Applied Dry Fall : MPI #118 (Gymnasium Ceiling)

C. Alkyd, Interior, Semi-Gloss (Gloss Level 5): MPI #47.

1. Product by one of the approved manufacturers found in the MPI list.

D. Alkyd, Quick Dry, Semi-Gloss (Gloss Level 5): MPI #81.

1. Product by one of the approved manufacturers found in the MPI list.

2.8 DRY FOG/FALL COATINGS

A. Interior Alkyd Dry Fog/Fall: MPI #118.

1. Basis-of-Design Product: Coronado Paint; Superkote 5000Alkyd Dryfall 105-1/131-1 or equal.

2. VOC Content: E Range of E2.

2.9 FLOOR COATINGS

A. Sealer, Water Based, for Concrete Floors: MPI #99.

1. Product by one of the approved manufacturers found in the MPI list.

2.10 SOURCE QUALITY CONTROL

A. Testing of Paint Materials: Owner reserves the right to invoke the following procedure:

1. Owner will engage the services of a qualified testing agency to sample paint materials. Contractor will be notified in advance and may be present when samples are taken. If paint materials have already been delivered to Project site, samples may be taken at Project site. Samples will be identified, sealed, and certified by testing agency.
2. Testing agency will perform tests for compliance with product requirements.
3. Owner may direct Contractor to stop applying coatings if test results show materials being used do not comply with product requirements. Contractor shall remove noncomplying paint materials from Project site, pay for testing, and repaint surfaces painted with rejected materials. Contractor will be required to remove rejected materials from previously painted surfaces if, on repainting with complying materials, the two paints are incompatible.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions, with Applicator present, for compliance with requirements for maximum moisture content and other conditions affecting performance of the Work.

B. Maximum Moisture Content of Substrates: When measured with an electronic moisture meter as follows:

1. Concrete: 12 percent.
2. Masonry (Clay and CMU): 12 percent.
3. Wood: 15 percent.
4. Gypsum Board: 12 percent.
5. Plaster: 12 percent.

C. Gypsum Board Substrates: Verify that finishing compound is sanded smooth.

D. Plaster Substrates: Verify that plaster is fully cured.

E. Proceed with coating application only after unsatisfactory conditions have been corrected.

1. Application of coating indicates acceptance of surfaces and conditions.

3.2 PREPARATION

A. Comply with manufacturer's written instructions and recommendations in "MPI Manual" applicable to substrates indicated.

B. Remove hardware, covers, plates, and similar items already in place that are removable and are not to be painted. If removal is impractical or impossible because of size or weight of item, provide surface-applied protection before surface preparation and painting.

1. After completing painting operations, use workers skilled in the trades involved to reinstall items that were removed. Remove surface-applied protection if any.

C. Clean substrates of substances that could impair bond of paints, including dust, dirt, oil, grease, and incompatible paints and encapsulants.

1. Remove incompatible primers and reprime substrate with compatible primers or apply tie coat as required to produce paint systems indicated.

D. Concrete Substrates: Remove release agents, curing compounds, efflorescence, and chalk. Do not paint surfaces if moisture content or alkalinity of surfaces to be painted exceeds that permitted in manufacturer's written instructions.

E. Steel Substrates: Remove rust, loose mill scale, and shop primer, if any. Clean using methods recommended in writing by paint manufacturer but not less than the following:

1. SSPC-SP 2, "Hand Tool Cleaning."
2. SSPC-SP 3, "Power Tool Cleaning."
3. SSPC-SP 7/NACE No. 4, "Brush-off Blast Cleaning."
4. SSPC-SP 11, "Power Tool Cleaning to Bare Metal."

F. Shop-Primed Steel Substrates: Clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with the same material as used for shop priming to comply with SSPC-PA 1 for touching up shop-primed surfaces.

G. Galvanized-Metal Substrates: Remove grease and oil residue from galvanized sheet metal fabricated from coil stock by mechanical methods to produce clean, lightly etched surfaces that promote adhesion of subsequently applied paints.

H. Aluminum Substrates: Remove loose surface oxidation.

I. Wood Substrates:

1. Scrape and clean knots, and apply coat of knot sealer before applying primer.
2. Sand surfaces that will be exposed to view, and dust off.
3. Prime edges, ends, faces, undersides, and backsides of wood.
4. After priming, fill holes and imperfections in the finish surfaces with putty or plastic wood filler. Sand smooth when dried.

J. Cotton or Canvas Insulation Covering Substrates: Remove dust, dirt, and other foreign material that might impair bond of paints to substrates.

3.3 APPLICATION

A. Apply paints according to manufacturer's written instructions and to recommendations in "MPI Manual."

1. Use applicators and techniques suited for paint and substrate indicated.
2. Paint surfaces behind movable equipment and furniture same as similar exposed surfaces. Before final installation, paint surfaces behind permanently fixed equipment or furniture with prime coat only.
3. Paint front and backsides of access panels, removable or hinged covers, and similar hinged items to match exposed surfaces.
4. Do not paint over labels of independent testing agencies or equipment name, identification, performance rating, or nomenclature plates.
5. Primers specified in painting schedules may be omitted on items that are factory primed or factory finished if acceptable to topcoat manufacturers.

B. Tint each undercoat a lighter shade to facilitate identification of each coat if multiple coats of same material are to be applied. Tint undercoats to match color of topcoat, but provide sufficient difference in shade of undercoats to distinguish each separate coat.

C. If undercoats or other conditions show through topcoat, apply additional coats until cured film has a uniform paint finish, color, and appearance.

D. Apply paints to produce surface films without cloudiness, spotting, holidays, laps, brush marks, roller tracking, runs, sags, ropiness, or other surface imperfections. Cut in sharp lines and color breaks.

E. Painting Fire Suppression, Plumbing, HVAC, Electrical, Communication, and Electronic Safety and Security Work:

1. Paint the following work where exposed in equipment rooms:

a. Equipment, including panelboards and switch gear.
b. Uninsulated metal piping.
c. Uninsulated plastic piping.
d. Pipe hangers and supports.
e. Metal conduit.
f. Plastic conduit.
g. Tanks that do not have factory-applied final finishes.
h. Duct, equipment, and pipe insulation having cotton or canvas insulation covering or other paintable jacket material.

2. Paint the following work where exposed in occupied spaces:

a. Equipment, including panelboards.
b. Uninsulated metal piping.
c. Uninsulated plastic piping.
d. Pipe hangers and supports.
e. Metal conduit.
f. Plastic conduit.
g. Duct, equipment, and pipe insulation having cotton or canvas insulation covering or other paintable jacket material.
h. Other items as directed by Architect.

3. Paint portions of internal surfaces of metal ducts, without liner, behind air inlets and outlets that are visible from occupied spaces.

4. Do not paint in mechanical rooms except as noted in 3.3.E.1.

3.4 FIELD QUALITY CONTROL

A. Dry Film Thickness Testing: Owner may engage the services of a qualified testing and inspecting agency to inspect and test paint for dry film thickness.

1. Contractor shall touch up and restore painted surfaces damaged by testing.
2. If test results show that dry film thickness of applied paint does not comply with paint manufacturer's written recommendations, Contractor shall pay for testing and apply additional coats as needed to provide dry film thickness that complies with paint manufacturer's written recommendations.

3.5 CLEANING AND PROTECTION

A. At end of each workday, remove rubbish, empty cans, rags, and other discarded materials from Project site.

B. After completing paint application, clean spattered surfaces. Remove spattered paints by washing, scraping, or other methods. Do not scratch or damage adjacent finished surfaces.

C. Protect work of other trades against damage from paint application. Correct damage to work of other trades by cleaning, repairing, replacing, and refinishing, as approved by Architect, and leave in an undamaged condition.

D. At completion of construction activities of other trades, touch up and restore damaged or defaced painted surfaces.

3.6 PAINTING SCHEDULE

A. Concrete Substrates, Nontraffic Surfaces:

1. Institutional Low-Odor/VOC Latex System:

a. Prime Coat: Primer sealer, interior, institutional low odor/VOC**,** MPI #149.
b. Intermediate Coat: Latex, interior, institutional low odor/VOC, matching topcoat.
c. Topcoat: Latex, interior, institutional low odor/VOC, (Gloss Level 2), MPI #144.

B. Concrete Substrates, Traffic Surfaces:

1. Water-Based Clear Sealer System:

a. First coat: Sealer, solvent based, for concrete floors, MPI #99.
b. Topcoat: Sealer, solvent based, for concrete floors, MPI #104.

C. CMU Substrates:

1. Institutional Low-Odor/VOC Latex System:

    a. Block Filler: Block filler, latex, interior/exterior, MPI #4.
    b. Intermediate Coat: Latex, interior, institutional low odor/VOC, matching topcoat.
    c. Topcoat: Latex, interior, institutional low odor/VOC, (Gloss Level 2), MPI #144.

D. Steel Substrates:

1. Quick-Drying Enamel System:

    a. Prime Coat: Primer, alkyd, quick dry, for metal, MPI #76.
    b. Intermediate Coat: Alkyd, quick dry, matching topcoat.
    c. Topcoat: Alkyd, quick dry, semi-gloss (Gloss Level 5), MPI #81.

E. Galvanized-Metal Substrates:

1. Institutional Low-Odor/VOC Latex System:

    a. Prime Coat: Primer, galvanized, water based, MPI #134.
    b. Intermediate Coat: Latex, interior, institutional low odor/VOC, matching topcoat.
    c. Topcoat: Latex, interior, institutional low odor/VOC, (Gloss Level 2), MPI #144.

F. Aluminum (Not Anodized or Otherwise Coated) Substrates:

1. Institutional Low-Odor/VOC Latex System:

    a. Prime Coat: Primer, quick dry, for aluminum, MPI #95.
    b. Intermediate Coat: Latex, interior, institutional low odor/VOC, matching topcoat.
    c. Topcoat: Latex, interior, institutional low odor/VOC, (Gloss Level 2), MPI #144.

G. Wood Substrates: Including wood trim, architectural woodwork, doors, wood-based panel products.

1. Institutional Low-Odor/VOC Latex System:

    a. Prime Coat: Primer, latex, for interior wood, MPI #39.
    b. Intermediate Coat: Latex, interior, institutional low odor/VOC, matching topcoat.
    c. Topcoat: Latex, interior, institutional low odor/VOC, (Gloss Level 2), MPI #144.

H. Fiberglass and Plastic Substrates:

1. Institutional Low-Odor/VOC Latex System:

    a. Prime Coat: Primer, bonding, water based, MPI #17.
    b. Prime Coat: Primer, bonding, solvent based, MPI #69.
    c. Intermediate Coat: Latex, interior, institutional low odor/VOC, matching topcoat.
    d. Topcoat: Latex, interior, institutional low odor/VOC, (Gloss Level 2), MPI #144.

I. Gypsum Board and Plaster Substrates:

1. Institutional Low-Odor/VOC Latex System:

a. Prime Coat: Primer sealer, interior, institutional low odor/VOC, MPI #149.
b. Intermediate Coat: Latex, interior, institutional low odor/VOC, matching topcoat.
c. Topcoat: Latex, interior, institutional low odor/VOC, (Gloss Level 2), MPI #144.

2. Institutional Low-Odor/VOC Acrylic System:

a. Prime Coat: SP203Stain Acrylic Drywall Primer, Master Coating Technologies.
b. Intermediate Coat: Acrylic Interior, Institutional Low Odor/VOC, Multi-color, Master Coating Technologies., #MPI #112.
c. Finish Coat: Acrylic Interior, Institutional Low Odor/VOC, Multi-color, Master Coating Technologies., #MPI #112.

J. Cotton or Canvas and ASJ Insulation-Covering Substrates: Including pipe and duct coverings.

1. Institutional Low-Odor/VOC Latex System:

a. Prime Coat: Primer sealer, latex, interior, MPI #50.
b. Intermediate Coat: Latex, interior, institutional low odor/VOC, matching topcoat.
c. Topcoat: Latex, interior, institutional low odor/VOC, (Gloss Level 2), MPI #144.

3.7 WASTE MANAGEMENT

A. Coordinate with Section 01 74 19.

1. Separate and recycle cut-offs and waste materials and material packaging in accordance with Waste Management Plan and to the maximum extent economically feasible and place in designated areas for recycling.

2. Set aside and protect materials suitable for reuse and/or remanufacturing.

3. Separate and fold up metal banding; flatten and place along with other metal scrap for recycling in designated area.

END OF SECTION 09 50 00

SECTION 14 21 00 - ELECTRIC TRACTION ELEVATORS

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes: Electric Traction Elevators.

B. Products Supplied But Not Installed Under this Section:

1. Hoist Beam
2. Pit Ladder
3. Inserts mounted in block walls for rail attachments

C. Work Supplied Under Other Sections:

1. Temporary lighting, including temporary lighting in hoistway for machine space with switch located in hoistway on the strike jamb side of top landing door.
2. Main line disconnects for each elevator.
    a. One fused three phase permanent power in building electrical distribution room
    b. One non fused three phase permanent power in hoist way at top landing
3. Hoistway ventilation shall be in accordance with local and national building code requirements.
4. Guide Rail Support shall be structurally adequate to extend from pit floor to top of hoistway, with spans in accordance with requirements of authority having jurisdiction and final layouts.
5. Removable barricades at all hoistway openings, in compliance with OSHA 29 CFR 1926.502 in addition to any local code requirements.
6. Lifeline attachments capable of withstanding 5000 lb load in accordance with OSHA 29 CFR 1926.502. Provide a minimum of 2 at the top, front of each hoistway.
7. Pit lighting: Fixture with switch and guards. Provide illumination level equal to or greater than that required by ASME A17.1/CSA B44 2000, or applicable version.
8. Control space lighting with switch. Coordinate switch with lighting for machine space as allowable by code.
9. Access Doors: As required for access to governor and/or seismic switch. Access door shall be self-closing, self-locking if necessary and operable from the inside without a key.

D. Related sections:

1. Section 01 50 00 - Temporary Facilities and Controls
2. Section 03 30 00 - Cast-in-Place Concrete:
3. Section 04 20 00 - Unit Masonry
4. Section 05 50 00 - Metal Fabrications

5. Division 7 – Thermal and Moisture Protection
6. Division 23 - Mechanical
7. Division 26 - Electrical
8. Division 27 - Communications
9. Division 28 – Electronic Safety and Security
10. Division 31 - Earthwork

E. Industry and government standards:

1. ICC/ANSI A117.1 Accessible and Usable Buildings and Facilities
2. ADAAG - Accessibility Guidelines for Buildings and Facilities
3. ANSI/NFPA 70, National Electrical Code
4. ANSI/NFPA 80, Standard for Fire Doors and Fire Windows
5. ASME/ANSI A17.1, Safety Code for Elevators and Escalators.

1.2 DESCRIPTION OF ELEVATOR – PASSENGER ELEVATOR

A. Elevator Equipment: KONE MonoSpace® 300 gearless traction elevator

B. Equipment Control: KCM831

C. Drive: Non Regenerative

D. Quantity of Elevators: 1

E. Landings: 2 landings. See drawings.

F. Openings: 2 Front Openings, 0 Back Openings

G. Travel: 12' 5 5/8". See drawings.

H. Rated Capacity: 2500 lbs

I. Rated Speed: 150 fpm

J. Clear Inside Dimensions (W x D): 8' 4" x 5’ 9"

K. Cab Height: 7' 6"

L. Clear height under suspended ceiling: 7' 4"

M. Entrance Width and Type: 3' 6" and Side Opening

N. Entrance Height: 7' 0"

O. Main Power Supply: 208 V Volts + 5%, three-phase – Coordinate with Electrical work

P. Operation: Simplex

Q. Machine Location: Inside the hoistway mounted on car guide rail

R. Control Space Location: Integrated Controller

S. Elevator Equipment shall conform to the requirements of seismic zone: Non-seismic

T. Maintenance Service Period: 12 months

1.3 PERFORMANCE REQUIREMENTS

A. Car Performance

1. Car Speed ± 5% of contract speed under any loading condition or direction of travel.

2. Car Capacity: Safely lower, stop and hold (per code) up to 125% of rated load.

B. System Performance

1. Vertical Vibration (maximum): 15 mg

2. Horizontal Vibration (maximum): 12 mg

3. Jerk Rate (maximum): 1 m /sec3

4. Acceleration (maximum) .4 m/sec2

5. In Car Noise: = 55 dB(A)

6. Leveling Accuracy: ±0.2 inches

7. Starts per hour (maximum): 180

1.4 SUBMITTALS

A. Product Data: Submit manufacturer's product literature for each proposed system.

1. Cab design, dimensions and layout.

2. Layout, finishes, and accessories and available options.

3. Controls, signals and operating system.

4. Color selection charts for cab and entrances.

B. Shop Drawings:

1. Clearances and travel of car.

2. Clear inside hoistway and pit dimensions.

3. Location and layout of equipment and signals.

4. Car, guide rails, buffers and other components in hoistway.

5. Maximum rail bracket spacing.

6. Maximum loads imposed on building structure.

7. Hoist beam requirements.

8. Location and sizes of access doors.

9. Location and details of hoistway door and frames.

10. Electrical characteristics and connection requirements.

C. Operation and maintenance data:

1. Provide manufacturer's standard maintenance and operation manual.

D. Diagnostic Tools

1. Prior to seeking final acceptance for the completed project as specified by the Contract Documents, the Elevator Contractor shall deliver to the Owner any specialized tool(s) that may be required to perform diagnostic evaluations, adjustments, and/or parametric software changes and/or test and inspections on any piece of control or monitoring equipment installed. This shall include any specialized tool(s) required for monitoring, inspection and/or maintenance where the means of suspension other than conventional wire ropes are furnished and installed by the Elevator Contractor. Any and all such tool(s) shall become property of the Owner. Any diagnostic tool provided to the Owner by the Elevator Contractor shall be configured to perform all levels of diagnostics, systems adjustment and parametric software changes which are available to the Elevator Contractor. In those cases where diagnostic tools provided to the Owner require periodic recalibration/or re-initiation, the Elevator Contractor shall perform such tasks at no additional cost to the Owner for a period equal to the term of the maintenance agreement from the date of final acceptance of the competed project During those intervals in which the Owner might find it necessary to surrender a diagnostic tool for re-calibration, re-initiation, or repair, the Elevator Contractor shall provide a temporary replacement for the tool at no additional cost to the Owner. The Elevator Contractor shall deliver to the Owner, printed instructions for the proper use of any tool that may be necessary to perform diagnostic evaluations, system adjustment, and/or parametric software changes on any unit of microprocessor-based elevator control equipment and means of suspension other than standard elevator steel cables furnished and install by the Elevator Contractor. Accompanying the printed instructions shall be any and all access codes, password, or other proprietary information that is necessary to interface with the microprocessor-control equipment.

1.5 QUALITY ASSURANCE

A. Manufacturer: Minimum of fifteen years experience in the fabrication, installation and service of elevators of the type and performance of the specified. The manufacturer shall have a documented quality assurance program.

B. Installer: The equipment manufacturer shall install the elevator.

C. Inspection and Testing: In accordance with requirements of local jurisdiction, obtain required permits, inspections and tests.

1.6 DELIVERY, STORAGE AND HANDLING

A. If the construction site is not prepared to receive the elevator equipment at the agreed ship date, the General Contractor shall be responsible to provide a safe, dry, and easily accessible storage area on or off the premises. Additional labor costs for double handling will be the responsibility of the general contractor.

B. Delivered elevator materials shall be stored in a protected environment in accordance with manufacturer recommendations. A minimum storage area of 10 feet by 20 feet is required adjacent to the hoistway.

1.7 WARRANTY

A. Provide manufacturer warranty for a period of one year. The warranty period is to begin upon Substantial Completion of the Contract. Warranty covers defects in materials and workmanship. Damage due to ordinary use, vandalism, improper or insufficient maintenance, misuse, or neglect do not constitute defective material or workmanship.

1.8 MAINTENANCE SERVICE

A. The elevator manufacturer shall provide maintenance service consisting of regular examinations and adjustments of the elevator equipment for a period of 12 months after date of substantial completion. Replacement parts shall be produced by the original equipment manufacturer.

B. Maintenance service be performed during regular working hours of regular working days and shall include emergency 24-hour call back service.

C. Maintenance service shall not include adjustments, repairs or replacement of parts due to negligence, misuse, abuse or accidents.

PART 2 - PRODUCTS

2.1 MANUFACTURER

A. Provide AC gearless machine room-less elevator systems subject to compliance with the design and performance requirements of this specification. Elevator manufacturers may include but are not limited to one of the following:

1. Basis of Design: MonoSpace® 300 traction elevators by KONE, Inc. (www.kone.com).

2. Other acceptable machine room-less products: manufacturer with minimum 15 years experience in manufacturing, installing, and servicing elevators of the type required for the project.

2.2 EQUIPMENT: CONTROL COMPONENTS AND CONTROL SPACE

A. Controller: Provide microcomputer based control system to perform all of the functions.

1. All high voltage (110V or above) contact points inside the controller cabinet shall be protected from accidental contact in a situation where the controller doors are open.

2. Controller shall be separated into two distinct halves; Motor Drive side and Control side. High voltage motor power conductors shall be routed and physically segregated from the rest of the controller.

3. Provide a serial cardrack and main CPU board containing a non-erasable EPROM and operating system firmware.

4. Variable field parameters and adjustments shall be contained in a non-volatile memory module.

B. Drive: Provide Variable Voltage Variable Frequency AC drive system to develop high starting torque with low starting current.

C. Controller Location: Locate controller{s} in the front wall integrated with the top landing entrance frame, machine side of the elevator. A separate control space should not be required.

2.3 EQUIPMENT: HOISTWAY COMPONENTS

A. Machine: AC gearless machine, with permanent magnet synchronous motor, direct current electro-mechanical disc brakes and integral traction drive sheave, mounted to the car guide rail at the top of the hoistway.

B. Governor: Friction type over-speed governor rated for the duty of the elevator specified.

C. Buffers, Car and Counterweight: Polyurethane buffer.

D. Hoistway Operating Devices:

1. Emergency stop switch in the pit

2. Terminal stopping switches.

3. Emergency stop switch on the machine

E. Positioning System: System consisting of magnets and proximity switches.

F. Guide Rails and Attachments: Steel rails with brackets and fasteners.

2.4 EQUIPMENT: HOISTWAY ENTRANCES

A. Hoistway Entrances

1. Sills: extruded.

2. Doors: Hollow metal construction with vertical internal channel reinforcements.

3. Fire Rating: Entrance and doors shall be UL fire-rated for 1-1/2 hour.

4. Entrance Finish: Brushed Stainless Steel.

5. Entrance Markings Jamb Plates: Provide standard entrance jamb tactile markings on both jambs, at all floors. Plate Mounting: Refer to manufacturer drawings.

2.5 EQUIPMENT: CAR COMPONENTS

A. Car Frame: Provide car frame with adequate bracing to support the platform and car enclosure.

B. Platform: Platform shall be all steel construction.

C. Car Guides: Provide guide-shoes mounted to top and bottom of both car and counterweight frame. Each guide-shoe assembly shall be arranged to maintain constant contact on the rail surfaces. Provide retainers in areas with Seismic design requirements.

D. Steel Cab

1. Panels: Non-removable vertical panels, plastic laminate selected from standard manufacturer's catalog of choices.

2. Car Front Finish: Brushed stainless steel.

3. Car Door Finish: Brushed stainless steel.

4. Ceiling:

   a. Round LED Down Light Drop Ceiling - LF-88: Satin Finished Stainless Steel three panel suspended ceiling with two holes per panel for Round LED lights.

5. Handrail:

   a. Round tube brushed aluminum - 1.5 in.. Rails to be located on back wall of car enclosure.

6. Flooring: By others. (Not to exceed 3lb/sqft and 1/2" finished depth.)

7. Threshold: Aluminum

E. Emergency Car Signals

1. Emergency Siren: Siren mounted on top of cab that is activated when the alarm button in the car operating panel is engaged. Siren shall have rated sound pressure level of 80 dB(A) at a distance of three feet from device. Siren shall respond with a delay of not more than one second after activation of alarm button.

2. Emergency Car Lighting: Provide emergency power unit employing a 12-volt sealed rechargeable battery and totally static circuits shall illuminate the elevator car and provide current to the alarm bell in the event of building power failure.

3. Emergency Exit Contact: An electrical contact shall be provided on the car-top exit.

F. Ventilation: No fan.

2.6 EQUIPMENT: SIGNAL DEVICES AND FIXTURES

A. Car Operating Panel: Provide car operating panel with all push buttons, key switches, and message indicators for elevator operation.

1. Flush mounted car operating panel shall contain a bank of round, mechanical, illuminated buttons marked to correspond to landings served, emergency call button, door open button, door close button, and key switches for lights, inspection, and exhaust fan. Buttons have amber illumination (halo). All buttons to have raised text and Braille marking on left hand side. The car operating display panel shall be amber DOT-matrix. All texts, when illuminated, shall be amber. The car operating panel shall have a brushed stainless steel finish.

2. Additional features of car operating panel shall include:

   a. Car Position Indicator within operating panel (amber).

   b. Elevator Data Plate marked with elevator capacity and car number on car top.

   c. Help buttons with raised markings.

   d. In car stop switch per local code.

   e. Firefighter's hat.

   f. Firefighter's Phase II Key-switch.

   g. Call Cancel Button.

h. Pre-programmed integrated ADA phone (complete description of krms features included as standard)

i. Help Button/Communicator. Activation of help button will initiate two-way communication between car and a location inside the building, switching over to alternate location if call is unanswered, where personnel are available to take the appropriate action. Visual indicators are provided for call initiation and call acknowledgement.

j. Firefighter's Phase II emergency in-car operating instructions.

B. Hall Fixtures: Wall mounted hall fixtures shall be provided with necessary push buttons and key switches for elevator operation. Wall mounted hall fixtures shall have a brushed stainless steel finish.

1. Hall fixtures shall feature round, mechanical, buttons in applied mount face frame. Hall fixtures shall correspond to options available from that landing. Buttons shall be in a vertically mounted fixture. Hall fixtures shall not be jamb-mounted. Hall lanterns shall feature amber illumination.

C. Car Lantern and Chime: A directional lantern visible from the corridor shall be provided in the car entrance. When the car stops and the doors are opening, the lantern shall indicate the direction in which the car is to travel and a chime will sound. The chime will sound once for up and twice for down.

D. Combination Hall Position Indicator and Hall Lantern located at Lobby. Hall lanterns and hall indicators shall feature amber illumination, all numbers will be amber display.

2.7 EQUIPMENT: ELEVATOR OPERATION AND CONTROLLER

A. Elevator Operation

1. Simplex Collective Operation: Using a microprocessor-based controller, operation shall be automatic by means of the car and hall buttons. If all calls in the system have been answered, the car shall park at the last landing served.

2. Zoned Car Parking.

3. Relative System Response Dispatching.

B. Standard Operating Features to include:

1. Full Collective Operation

2. Fan and Light Control.

3. Load Weighing Bypass.

4. Ascending Car Uncontrolled Movement Protection

5. Top of Car Inspection Station.

C. Additional Operating Features to include:

1. Emergency Battery Power Supply

a. When the main line power is lost for longer than 5 seconds the emergency battery power supply provides power automatically to the elevator controller.

The elevator will rise or lower to the first available landing, open the doors, and shut down. The elevator will return to service upon the return of normal main line power. An auxiliary contact on the main line disconnect and shunt trip breaker (if used) will be provided by others.

D. Elevator Control System for Inspections and Emergency

1. Provide devices within controller to run the elevator in inspection operation.

2. Provide devices on car top to run the elevator in inspection operation.

3. Provide within controller an emergency stop switch to disconnect power from the brake and prevents motor from running.

4. Provide the means from the controller to mechanically lift and control the elevator brake to safely bring car to nearest available landing when power is interrupted.

5. Provide the means from the controller to reset the governor over speed switch and also trip the governor.

6. Provide the means from the controller to reset the emergency brake when set because of an unintended car movement or ascending car over speed.

7. Provide the means for the control to reset elevator earthquake operation.

2.8 EQUIPMENT: DOOR OPERATOR AND CONTROL

A. Door Operator: A closed loop permanent magnet VVVF high-performance door operator shall be provided to open and close the car and hoistway doors simultaneously. Door movement shall be cushioned at both limits of travel. Electro-mechanical interlock shall be provided at each hoistway entrance to prevent operation of the elevator unless all doors are closed and locked. An electric contact shall be provided on the car at each car entrance to prevent the operation of the elevator unless the car door is closed.

B. The door operator shall be arranged so that, in case of interruption or failure of electric power, the doors can be readily opened by hand from within the car, in accordance with applicable code. Emergency devices and keys for opening doors from the landing shall be provided as required by local code.

C. Doors shall open automatically when the car has arrived at or is leveling at the respective landings. Doors shall close after a predetermined time interval or immediately upon pressing of a car button. A door open button shall be provided in the car. Momentary pressing of this button shall reopen the doors and reset the time interval.

D. Door hangers and tracks shall be provided for each car and hoistway door. Tracks shall be contoured to match the hanger sheaves. The hangers shall be designed for power operation with provisions for vertical and lateral adjustment. Hanger sheaves shall have polyurethane tires and pre-lubricated sealed-for-life bearings.

E. Electronic Door Safety Device. The elevator car shall be equipped with an electronic protective device extending the full height of the car. When activated, this sensor shall prevent the doors from closing or cause them to stop and reopen if they are in the process of closing. The doors shall remain open as long as the flow of traffic continues and shall close shortly after the last person passes through the door opening.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Field measure and examine substrates, supports, and other conditions under which elevator work is to be performed.

B. Do not proceed with work until unsatisfactory conditions are corrected.

C. Prior to start of Work, verify hoistway is in accordance with shop drawings. Dimensional tolerance of hoistway from shop drawings: -0 inches +2 inches. Do not begin work of this section until dimensions are within tolerances.

D. Prior to start of Work, verify projections greater then 2 inches (4 inches if ASME A17.1/CSA B44 2000 applies) must be beveled not less then 75 degrees from horizontal.

E. Prior to start of Work, verify landings have been prepared for entrance sill installation. Traditional sill angle or concrete sill support shall not be required.

F. Prior to start of Work, verify elevator pit has been constructed in accordance with requirements, is dry and reinforced to sustain vertical forces, as indicated in approved submittal. Verify that sumps or sump pumps located within pit will not interfere with installed elevator equipment.

G. Prior to start of Work, verify control space has been constructed in accordance with requirements, with access coordinated with elevator shop drawings, including Sleeves and penetrations.

H. Verify installation of GFCI protected 20-amp in pit and adjacent to each signal control cabinet in control space.

3.2 PREPARATION

A. Coordinate installation of anchors, bearing plates, brackets and other related accessories.

3.3 INSTALLATION

A. Install equipment, guides, controls, car and accessories in accordance with manufacturer installation methods and recommended practices.

B. Properly locate guide rails and related supports at locations in accordance with manufacturer’s recommendations and approved shop drawings. Anchor to building structure using isolation system to minimize transmission of vibration to structure.

C. All hoistway frames shall be securely fastened to fixing angles mounted in the hoistway. Coordinate installation of sills and frames with other trades.

D. Lubricate operating system components in accordance with manufacturer recommendations.

E. Perform final adjustments, and necessary service prior to substantial completion.

3.4 CONSTRUCTION

A. Interface with Other Work:

1. Guide rail brackets attached to steel shall be installed prior to application of fireproofing.

2. Coordinate construction of entrance walls with installation of door frames and sills. Maintain front wall opening until elevator equipment has been installed.

    a. Ensure adequate support for entrance attachment points at all landings.

    b. Coordinate wall openings for hall push buttons, signal fixtures and sleeves. Each elevator requires sleeves within the hoistway wall.

    c. Coordinate emergency power transfer switch and power change pending signals as required for termination at the primary elevator signal control cabinet in each group.

    d. Coordinate interface of elevators and fire alarm system.

    e. Coordinate interface of dedicated telephone line.

    f. Coordinate the installation of the non fused three phase permanent power disconnect in hoist way at top landing

3.5 TESTING AND INSPECTIONS

A. Perform recommended and required testing in accordance with authority having jurisdiction.

B. Obtain required permits and provide originals to Owner’s Representative.

3.6 DEMONSTRATION

A. Prior to substantial completion, instruct Owner’s Representative on the proper function and required daily maintenance of elevators. Instruct personnel on emergency procedures.

END OF SECTION 14 21 00

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PART 1 GENERAL

1.1 SUMMARY

A. This section includes the following basic mechanical materials and methods to complement other Division 22 Sections.
   1. Installation requirements common to equipment specifications.
   2. Firestopping (refer to specification section 078413).
   3. Cutting and patching.
   4. Touchup painting and finishing.
   5. Plumbing Equipment Instruction

B. Pipe and pipe fitting materials are specified in piping system Sections.

1.2 DEFINITIONS

A. Pipe, pipe fittings, and piping include tube, tube fittings, and tubing.

B. Finished Spaces: Spaces other than mechanical and electrical equipment rooms furred spaces, pipe and duct shafts, unheated spaces immediately below the roof, spaces above ceilings, unexcavated spaces, crawl spaces and tunnels.

C. Exposed Interior Installations: Exposed to view indoors. Examples include finished occupied spaces and mechanical equipment rooms.

D. Exposed Exterior Installations: Exposed to view outdoors, or subject to outdoor ambient temperatures and weather conditions. Examples include rooftop locations.

E. Concealed Interior Installations: Concealed from view and protected from physical contact by building occupants. Examples include above ceilings and in duct shafts.

F. Concealed Exterior Installations: Concealed from view and protected from weather conditions and physical contact by building occupants, but subject to outdoor ambient temperatures. Examples include installations within unheated shelters.

1.3 REFERENCES

A. ASTM E 119 - Standard Test Methods for Fire Tests of Building Construction and Materials; 1997.

B. ASTM E 814 - Standard Test Method for Fire Tests of Through-Penetration Fire Stops; 1994b.

C. FM P7825 - Approval Guide; Factory Mutual Research Corporation; current edition.

D. UL (FRD) - Fire Resistance Directory; Underwriters Laboratories Inc.; current edition.

1.4 SUBMITTALS

A. Product Data: Provide product data for piping specialties.

B. Shop Drawings: Detailing fabrication and installation for metal and wood supports, and anchorage for plumbing materials and equipment.

C. Identification materials and devices.

D. Certificates: Welder certificates signed by the Contractor certifying that welders meet or exceed the requirements specified under the "Quality Assurance" Article.

E. Warranty: Submit manufacturer warranty and ensure that forms have been completed in Nanuet Union Free School District's name and registered with manufacturer.

1.5 QUALITY ASSURANCE

A. Perform work in accordance with the Building Code of New York State.

B. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than three years of documented experience.

C. Installer Qualifications: Company specializing in performing the work of this section with minimum three years of experience.

D. Equipment Selection: Equipment of greater or larger power, dimensions, capacities, and ratings may be furnished provided such proposed equipment is approved in writing and connecting mechanical and electrical services, circuit breakers, conduit, motors, bases and equipment spaces are increased. No additional costs will be approved for these increases, if larger equipment is approved. If minimum energy ratings or efficiencies of the equipment are specified, the equipment must meet the design requirements and commissioning requirements.

1.6 PIPING DELIVERY, STORAGE, AND HANDLING

A. Deliver pipes and tubes with factory-applied end-caps. Maintain end-caps through shipping, storage, and handling to prevent pipe-end damage and prevent entrance of dirt, debris, and moisture.

B. Protect stored pipes and tubes from moisture and dirt. Elevate above grade. When stored inside, do not exceed structural capacity of the floor.

C. Protect flanges, fittings, and piping specialties from moisture and dirt.

D. Protect stored plastic pipes from direct sunlight. Support to prevent sagging and bending.

1.7 SEQUENCING AND SCHEDULING

A. Coordinate equipment installation with other building components.

B. Arrange for chases, slots, and openings in building structure during progress of construction to allow for plumbing installations.

C. Coordinate the installation of required supporting devices and set sleeves in poured-in-place concrete and other structural components as they are constructed.

D. Sequence, coordinate, and integrate installations of plumbing materials and equipment for efficient flow of the Work.

E. Coordinate connection of electrical services.

F. Coordinate connection of plumbing systems with utilities and services. Comply with requirements of governing regulations, landlord, franchised service companies, and controlling agencies.

G. Coordinate requirements for access panels and doors where plumbing items requiring access are concealed behind finished surfaces.

H. Coordinate installation of identifying devices after completing covering and painting where devices are applied to surfaces. Install identifying devices prior to installing acoustical ceilings and similar concealment.

PART 2 PRODUCTS

2.1 PIPE, PIPE FITTINGS, AND JOINING MATERIALS

A. Refer to individual piping system specification sections for pipe fitting materials and joining methods.

B. Pipe Threads: ASME B1.20.1 for factory threaded pipe and fittings.

C. Pipe Flange Gasket Materials: Suitable for thermal and chemical conditions of the contents of the piping system.

1. ASME B16.21, non-metallic, flat, asbestos-free, 1/8 inch maximum thickness, except where thickness or specific material is indicated
   a. Full-Face Type: For flat-face, Class 125 cast-iron and cast-bronze flanges.
   b. Narrow-Face Type: For raised-face, Class 250 cast-iron and steel flanges.
2. AWWA C110, rubber, flat-face, 1/8 inch thick, except where other thickness is indicated; and full-face or ring-type, except where type is indicated.

D. Flange Bolts and Nuts: ASME B18.2.1, carbon steel, except where other material is specified.

E. Welding Filler Metals: Comply with AWS D10.12 for welding materials appropriate for wall thickness and chemical analysis of steel pipe being welded.

2.2 PIPING SPECIALTIES

A. Escutcheons: Manufactured wall, ceiling, and floor plates; deep-pattern type where required to conceal protruding fittings and sleeves.
   1. Inside Diameter: Closely fit around pipe, tube and insulation.
   2. Outside Diameter: Completely cover opening.
   3. Stamped Steel: One-piece, with set-screw and chrome-plated finish.
   4. Cast-Iron Floor Plate: One-piece casting.

B. Dielectric Fittings: Assembly or fitting having insulating material isolating joined dissimilar metals to prevent galvanic action and stop corrosion.
   1. Description: Combination of copper alloy and ferrous; threaded, solder, plain, and weld neck end types and matching piping system materials.
   2. Insulating Material: Suitable for system fluid, pressure and temperature.
   3. Dielectric Unions: Factory-fabricated, union assembly for 250-psig minimum working pressure at a 180 deg. F temperature.

PART 3 EXECUTION

3.1 PREPARATION

A. Ream pipe and tube ends. Remove burrs. Bevel plain end ferrous pipe.

B. Remove scale and dirt on inside and outside before assembly.

C. Prepare piping connections to equipment with flanges or unions.

D. Keep open ends of pipe free from scale and dirt. Whenever work is suspended during construction protect open ends with temporary plugs or caps.

3.2 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Route piping in orderly manner, plumb and parallel to building structure, and maintain gradient.

C. Install piping to conserve building space and avoid interference with use of space.

D. Sleeve pipe passing through partitions, walls, and floors.

E. Install piping to allow for expansion and contraction without stressing pipe, joints, or connected equipment.

F. Inserts:
   1. Provide inserts for placement in concrete formwork.
   2. Provide inserts for suspending hangers from reinforced concrete slabs and sides of reinforced concrete beams.
   3. Provide hooked rod to concrete reinforcement section for inserts carrying pipe over 4 inches.
   4. Where concrete slabs form finished ceiling, locate inserts flush with slab surface.

5. Where inserts are omitted, drill through concrete slab from below and provide through-bolt with recessed square steel plate and nut above slab.

G. Pipe Hangers and Supports:
   1. Install in accordance with ASME B31.9.
   2. Support horizontal piping as scheduled.
   3. Place hangers within 12 inches of each horizontal elbow.
   4. Use hangers with 1-1/2 inch minimum vertical adjustment. Design hangers for pipe movement without disengagement of supported pipe.
   5. Support vertical piping at every floor. Support riser piping independently of connected horizontal piping.
   6. Where several pipes can be installed in parallel and at same elevation, provide multiple or trapeze hangers.
   7. Prime coat exposed steel hangers and supports. Hangers and supports located in crawl spaces, pipe shafts, and suspended ceiling spaces are not considered exposed.

H. Provide clearance for installation of insulation and access to valves and fittings.

I. Provide access where valves and fittings are not exposed.

J. Where pipe support members are welded to structural building framing, scrape, brush clean, and apply one coat of zinc rich primer to welds.

K. Install valves with stems upright or horizontal, not inverted.

3.3 EQUIPMENT INSTALLATION - COMMON REQUIREMENTS

A. Install equipment to provide the maximum possible headroom where mounting heights are not indicated.

B. Install equipment according to approved submittal data. Portions of the Work are shown only in diagrammatic form. Refer conflicts to the Architect.

C. Install equipment level and plumb, parallel and perpendicular to other building systems and components in exposed interior spaces, except where otherwise indicated.

D. Install plumbing equipment to facilitate servicing, maintenance, and repair or replacement of equipment components. Connect equipment for ease of disconnecting, with minimum of interference with other installations. Extend grease fittings to an accessible location

E. Install equipment giving right-of-way to piping systems installed at a required slope.

3.4 PAINTING AND FINISHING

A. Damage and Touch Up: Repair marred and damaged factory-painted finishes with materials and procedures to match original factory finish

3.5 ERECTION OF METAL SUPPORTS AND ANCHORAGE

A. Cut, fit, and place miscellaneous metal supports accurately in location, alignment, and elevation to support and anchor plumbing materials and equipment.

B. Field Welding: Comply with AWS D1.1 "Structural Welding Code--Steel."

3.6 CUTTING AND PATCHING

A. Cut, channel, chase, and drill floors, walls, partitions, ceilings, and other surfaces necessary for plumbing installations. Perform cutting by skilled mechanics of the trades involved.

B. Repair cut surfaces to match adjacent surfaces.

3.7 PLUMBING EQUIPMENT INSTRUCTION

A. Provide instruction of the Owner's representatives for the duration specified below in operation and maintenance of the following equipment:
   1. Sump Pump (minimum 2 hours).

END OF SECTION

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PART 1 GENERAL

1.1 SECTION INCLUDES

A. Tags.

B. Pipe markers.

1.2 REFERENCE STANDARDS

A. ASME A13.1 - Scheme for the Identification of Piping Systems; 2007.

B. ASTM D709 - Standard Specification for Laminated Thermosetting Materials; 2013.

C. ASTM D709 - Standard Specification for Laminated Thermosetting Materials; 2013.

1.3 SUBMITTALS

A. List: Submit list of wording, symbols, letter size, and color coding for plumbing identification.

B. Product Data: Provide manufacturers catalog literature for each product required.

PART 2 PRODUCTS

2.1 IDENTIFICATION APPLICATIONS

A. Piping: Tags and Pipe Markers.

B. Sump Pump: Nameplate.

C. Valves: Tags.

2.2 NAMEPLATES

A. Description: Laminated three-layer plastic with engraved letters.
   1. Letter Color: White.
   2. Letter Height: 1/4 inch.
   3. Background Color: Black.
   4. Nameplate Height: 3/4 inch.
   5. Nameplate Material:
      a. Flexible: Vinyl with adhesive backing per ASTM D709.
   6. Plastic: Comply with ASTM D709.

2.3 TAGS

A. Metal Tags: Brass with stamped letters; tag size minimum 1-1/2 inch diameter with smooth edges.

2.4 PIPE MARKERS

A. Comply with ASME A13.1.

B. Plastic Tape Pipe Markers: Flexible, vinyl film tape with pressure sensitive adhesive backing and printed markings.

C. Identification Scheme, ASME A13.1:
   1. Primary: External Pipe Diameter, Uninsulated or Insulated.
      a. 3/4 to 1-1/4 inches: Use 8 inch field-length with 1/2 inch text height.
      b. 1-1/2 to 2 inches: Use 8 inch field-length with 3/4 inch text height.
      c. 2-1/2 to 6 inches: Use 12 inch field-length with 1-1/4 inch text height.
   2. Secondary: Color scheme per fluid service.

a. Nanuet Union Free School District - Sump Pump Waste Piping: White text on purple background.

3. Tertiary: Other Details.
   a. Directional flow arrow.

PART 3 EXECUTION

3.1 PREPARATION

A. Degrease and clean surfaces to receive adhesive for identification materials.

3.2 INSTALLATION

A. Install plastic nameplates with corrosive-resistant mechanical fasteners, or adhesive. Apply with sufficient adhesive to ensure permanent adhesion and seal with clear lacquer.

B. Install tags with corrosion resistant chain.

C. Install plastic tape pipe markers complete around pipe in accordance with manufacturer's instructions.

END OF SECTION

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Pipe, pipe fittings, specialties, and connections for piping systems.
   1. Sanitary sewer.
   2. Flanges, unions, and couplings.
   3. Pipe hangers and supports.
   4. Valves.
   5. Check valves.

1.2 REFERENCE STANDARDS

A. ASME B16.1 - Gray Iron Pipe Flanges and Flanged Fittings: Classes 25, 125, and 250; 2010.

B. ASME B16.3 - Malleable Iron Threaded Fittings: Classes 150 and 300; 2011.

C. ASME B16.18 - Cast Copper Alloy Solder Joint Pressure Fittings; 2012.

D. ASME B16.22 - Wrought Copper and Copper Alloy Solder-Joint Pressure Fittings; 2013.

E. ASME B31.1 - Power Piping; 2014.

F. ASME B31.2 - Fuel Gas Piping; The American Society of Mechanical Engineers; 1968.

G. ASME B31.9 - Building Services Piping; 2014.

H. ASME BPVC-IX - Boiler and Pressure Vessel Code, Section IX - Welding, Brazing, and Fusing Qualifications; 2015.

I. ASSE 1003 - Performance Requirements for Water Pressure Reducing Valves for Domestic Water Distribution Systems; 2009.

J. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless; 2012.

K. ASTM C564 - Standard Specification for Rubber Gaskets for Cast Iron Soil Pipe and Fittings; 2014.

L. ASTM C1277 - Standard Specification for Shielded Couplings Joining Hubless Cast Iron Soil Pipe and Fittings; 2020.

M. ASTM C1540 - Standard Specification for Heavy-Duty Shielded Couplings Joining Hubless Cast Iron Soil Pipe and Fittings; 2020.

N. CISPI 301 - Standard Specification for Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste and Vent Piping Applications; 2009.

O. CISPI 310 - Specification for Coupling for Use in Connection with Hubless Cast Iron Soil Pipe and Fittings for Sanitary and Storm Drain, Waste, and Vent Piping Applications; 2011.

P. FM 1680 - Approval Standard for Couplings Used in Hubless Cast Iron Systems for Drain, Waste or Vent, Sewer, Rainwater or Storm Drain Systems Above and Below Ground, Industrial/Commercial and Residential; 1989.

Q. ICC-ES AC01 - Acceptance Criteria for Expansion Anchors in Masonry Elements; 2012.

R. ICC-ES AC106 - Acceptance Criteria for Predrilled Fasteners (Screw Anchors) in Masonry Elements; 2012.

S. ICC-ES AC193 - Acceptance Criteria for Mechanical Anchors in Concrete Elements; 2013.

T. ICC-ES AC308 - Acceptance Criteria for Post-Installed Adhesive Anchors in Concrete Elements; 2013.

U. MSS SP-58 - Pipe Hangers and Supports - Materials, Design, Manufacture, Selection, Application, and Installation; 2009.

V. MSS SP-70 - Cast Iron Gate Valves, Flanged and Threaded Ends; 2011.

W. MSS SP-71 - Cast Iron Swing Check Valves, Flanged and Threaded Ends; 2011.

1.3 SUBMITTALS

A. Product Data: Provide data on pipe materials, pipe fittings, valves, and accessories. Provide manufacturers catalog information. Indicate valve data and ratings.

B. Sustainable Design Documentation: For soldered copper joints, submit installer's certification that the specified installation method and materials were used.

C. Piping Schedule: Provide schedule of piping applications and materials, indicating piping and fittings.

D. Piping Shop Drawings: Provide drawings of piping installation, indicating dimensioned locations, equipment, critical dimensions, elevations, sizes, systems, and valve locations.

1.4 QUALITY ASSURANCE

A. Perform work in accordance with New York State Building Code.

B. Perform work in accordance with New York State Plumbing Code.

C. Identify pipe with marking including size, ASTM material classification, ASTM specification, water pressure rating.

D. Perform Work in accordance with Plumbing Code of New York State.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Accept valves on site in shipping containers with labeling in place. Inspect for damage.

B. Provide temporary protective coating on cast iron and steel valves.

C. Provide temporary end caps and closures on piping and fittings. Maintain in place until installation.

D. Protect piping systems from entry of foreign materials by temporary covers, completing sections of the work, and isolating parts of completed system.

1.6 FIELD CONDITIONS

A. Do not install underground piping when bedding is wet or frozen.

PART 2 PRODUCTS

2.1 GENERAL REQUIREMENTS

2.2 SANITARY SEWER PIPING, ABOVE GRADE

A. Cast Iron Pipe: CISPI 301, hubless, service weight.
   1. All cast iron soil pipe and fittings shall be marked with the collective trademark of the Cast Iron Soil Pipe Institute (CISPI) and shall be listed by NSF International.
   2. Fittings: Cast iron.
   3. Joints: CISPI 310, neoprene gaskets and stainless steel clamp-and-shield assemblies.

2.3 FLANGES, UNIONS, AND COUPLINGS

A. Unions for Pipe Sizes 3 Inches and Under:
   1. Ferrous Pipe: Class 150 malleable iron threaded unions.

B. Flanges for Pipe Size Over 1 Inch:
   1. Ferrous Pipe: Class 150 malleable iron threaded or forged steel slip-on flanges; preformed neoprene gaskets.

C. No-Hub Couplings:
   1. Testing: In accordance with ASTM C1277 and CISPI 310.
   2. Gasket Material: Neoprene complying with ASTM C564.
   3. Band Material: Stainless steel.
   4. Eyelet Material: Stainless steel.

D. Shielded, Heavy Duty No-Hub Couplings:
   1. Testing: In accordance with ASTM C1540 and FM 1680.
   2. Gasket Material: Neoprene complying with ASTM C564.
   3. Band Material: Stainless steel.
   4. Eyelet Material: Stainless steel.

2.4 PIPE HANGERS AND SUPPORTS

A. Provide hangers and supports that comply with MSS SP-58.
   1. If type of hanger or support for a particular situation is not indicated, select appropriate type using MSS SP-58 recommendations.
   2. Overhead Supports: Individual steel rod hangers attached to structure or to trapeze hangers.
   3. Trapeze Hangers: Welded steel channel frames attached to structure.
   4. Vertical Pipe Support: Steel riser clamp.
   5. Floor Supports: Concrete pier or steel pedestal with floor flange; fixture attachment.

B. Plumbing Piping - Drain, Waste, and Vent:
   1. Hangers for Pipe Sizes 1/2 Inch to 1-1/2 Inches: Malleable iron, adjustable swivel, split ring.
   2. Hangers for all pipe sizes: Carbon steel, adjustable, clevis.
   3. Hangers for Pipe Sizes 2 Inches and Over: Carbon steel, adjustable, clevis.
   4. Wall Support for Pipe Sizes to 3 Inches: Cast iron hook.
   5. Floor Support: Cast iron adjustable pipe saddle, lock nut, nipple, floor flange, and concrete pier or steel support.

C. Hanger Fasteners: Attach hangers to structure using appropriate fasteners, as follows:
   1. Concrete Wedge Expansion Anchors: Complying with ICC-ES AC193.
   2. Masonry Wedge Expansion Anchors: Complying with ICC-ES AC01.
   3. Concrete Screw Type Anchors: Complying with ICC-ES AC193.
   4. Masonry Screw Type Anchors: Complying with ICC-ES AC106.
   5. Concrete Adhesive Type Anchors: Complying with ICC-ES AC308.
   6. Other Types: As required.

2.5 GATE VALVES

A. 2-1/2 inches and Larger: Non-rising stem, bolted bonnet, solid wedge disc:
   1. Class: 125
   2. Body: ASTM A-126 Class B cast iron.
   3. Bonnet: ASTM A-108 steel.
   4. Stem: ASTM B-584 copper-silicon bronze.
   5. Packing Gland: ASTM A-126 Class B cast iron.
   6. Packing Gland Flange: ASTM A-126 Class B cast iron.
   7. Packing: Non-asbestos acrylic and novaloid fibers with Teflon.
   8. Disc: ASTM A-126 Class B cast iron..

9. Disc Holder: ASTM B-62 bronze.
10. Repacking Seat Bushing: ASTM A-276 stainless steel, type 410.
11. Seat Ring: ASTM A-126 Class B cast iron.
12. Handwheel: ASTM A-126 Class B cast iron.
13. Ends: Flanged.

B. Acceptable Manufacturers:
1. Nibco
2. Stockham
3. Milwaukee

2.6 CHECK VALVES

A. Swing Check: 2-1/2 inches and larger:
1. Class: 125
2. Body: ASTM A-126 Class B cast iron.
3. Disc: ASTM B-62 bronze.
4. Hinge : ASTM B-584 bronze.
5. Hinge Pin: ASTM B-16 brass.
6. Cap: ASTM A-126 Class B cast iron.
7. Ends: Flanged.
8. Acceptable Manufacturers:
   a. Stockham
   b. Nibco
   c. Milwaukee

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that excavations are to required grade, dry, and not over-excavated.

3.2 PREPARATION

A. Ream pipe and tube ends. Remove burrs. Bevel plain end ferrous pipe.

B. Remove scale and dirt, on inside and outside, before assembly.

C. Prepare piping connections to equipment with flanges or unions.

3.3 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Provide non-conducting dielectric connections wherever jointing dissimilar metals.

C. Route piping in orderly manner and maintain gradient. Route parallel and perpendicular to walls.

D. Install piping to maintain headroom, conserve space, and not interfere with use of space.

E. Group piping whenever practical at common elevations.

F. Provide clearance in hangers and from structure and other equipment for installation of insulation and access to valves and fittings.

G. Provide access where valves and fittings are not exposed.
1. Cooridiante size and location of access doors with the general contractor's specifications and drawings.

H. Sleeve pipes passing through partitions, walls, and floors.

I. Inserts:
   1. Provide inserts for placement in concrete formwork.
   2. Provide inserts for suspending hangers from reinforced concrete slabs and sides of reinforced concrete beams.
   3. Provide hooked rod to concrete reinforcement section for inserts carrying pipe over 4 inches.
   4. Where concrete slabs form finished ceiling, locate inserts flush with slab surface.
   5. Where inserts are omitted, drill through concrete slab from below and provide through-bolt with recessed square steel plate and nut above slab.

J. Pipe Hangers and Supports:
   1. Install in accordance with ASME B31.9.
   2. Support horizontal piping as indicated.
   3. Install hangers to provide minimum 1/2 inch space between finished covering and adjacent work.
   4. Place hangers within 12 inches of each horizontal elbow.
   5. Use hangers with 1-1/2 inch minimum vertical adjustment. Design hangers for pipe movement without disengagement of supported pipe.
   6. Support vertical piping at every floor. Support riser piping independently of connected horizontal piping.
   7. Where several pipes can be installed in parallel and at same elevation, provide multiple or trapeze hangers.

3.4 APPLICATION

A. Install unions downstream of valves and at equipment or apparatus connections.

3.5 TOLERANCES

A. Drainage Piping: Establish invert elevations within 1/2 inch vertically of location indicated and slope to drain at minimum of 1/4 inch per foot slope for 3 inch and larger, 1/4 inch per foot slope for sizes smaller than 3 inch.

3.6 TESTING DRAINAGE, WASTE AND VENT PIPING

A. Provide testing of the drainage, waste and vent piping of either air or water testing, as described below.

B. Preparation for Testing: Prepare piping as follows:
   1. Leave joints uninsulated and exposed for examination during the test.

C. Test drainage, waste and vent piping as follows:
   1. Test piping with either an water test or an air test in accordance with New York State Building Code, and as follows:
      a. A water test shall be applied to the drainage system either in its entirety or in sections. If applied to the entire system, all openings in the piping shall be tightly closed, except the highest opening, and the system shall be filled with water to point of overflow. If the system is tested in sections, each opening shall be tightly plugged except the highest openings of the section under test, and each section shall be filled with water, but no section shall be tested with less than a 10-foot (3048 mm) head of water. In testing successive sections, at least the upper 10 feet (3048 mm) of the next preceding section shall be tested so that no joint or pipe in the building, except the uppermost 10 feet (3048 mm) of the system, shall have been submitted to a test of less than a 10-foot (3048 mm) head of water. The water shall be kept in the system, or in the portion under test, for at least 15 minutes before inspection starts. The system shall then be tight at all points.

b. An air test shall be made by forcing air into the system until there is a uniform gauge pressure of 5 pounds per square inch (psi) (34.5 kPa) or sufficient to balance a 10-inch (254 mm) column of mercury. This pressure shall be held for a test period of at least 15 minutes. Any adjustments to the test pressure required because of changes in ambient temperature or the seating of gaskets shall be made prior to the beginning of the test period.

D. Completed sanitary drainage and vent systems:
1. After all plumbing fixtures have been installed and all traps have been filed with water, every part of the sanitary drainage and vent systems within the building walls shall be subjected to a final test as prescribed herein. For the duration of testing, flow of water in the system shall be halted and the building drain shall be sealed adjacent to its point of entry inside the building. If requested by the authority of jurisdiction, remove any cleanout plugs to ascertain that the testing is effective in all parts of the system.
2. The final test of the completed drainage and vent system shall be visual and in sufficient detail to determine compliance with the provisions of this code except that the plumbing shall be subjected to a smoke test where necessary for cause. Where the smoke test is utilized, it shall be made by filling all traps with water and then introducing into the entire system a pungent, thick smoke produced by one or more smoke machines. When the smoke appears at stack openings on the roof, the stack openings shall be closed and a pressure equivalent to a 1-inch water column (248.8 Pa) shall be maintained for 15 minutes before inspection starts.

3.7 TESTING OF DRAINAGE AND VENT SYSTEMS

A. Rough Plumbing:
1. Except for outside leaders and perforated or open jointed drain tile, the piping of plumbing drainage and venting systems shall be tested upon completion of the rough piping installation by water or air and proved watertight. The Authority Having Jurisdiction may require the removal of any cleanout plugs to ascertain if the pressure has reached all parts of the system. Either of the following test methods shall be used:
a. The water test shall be applied to the drainage system either in its entirety or in sections after rough piping has been installed. If applied to the entire system, all openings in the piping shall be tightly closed, except the highest opening, and the system filled with water to point of overflow. If the system is tested in sections, each opening shall be tightly plugged except the highest opening of the section under test, and each section shall be filled with water, but no section shall be tested with less than a 10-foot head of water. In testing successive sections at least the upper 10 feet of the next preceding section shall be tested, so that no joint or pipe in the building (except the uppermost 10 feet of the system) shall have been submitted to a test of less than 10-foot head of water. The water shall be kept in the system or in the portion under test for at least 15 minutes before inspection starts; the system shall then be tight at all points.
b. The air test shall be made by attaching an air compressor testing apparatus to any suitable opening and after closing all other inlets and outlets to the system, forcing air into the system until there is a uniform gauge pressure of 5 pounds per square inch or sufficient to balance a column of mercury 10 inches in height. This pressure shall be held without introduction of additional air for a period of at least 15 minutes.

B. Finished Plumbing
1. When the rough plumbing has been tested in accordance with the paragraphs above, a final test of the finished plumbing system may be required to insure that the final fixture connections to the drainage system are gas-tight.
2. After the plumbing fixtures have been set and their traps filled with water, their connections shall be tested and proved gas and watertight. A final smoke or peppermint

test shall b required, except in the case of a previous or site-inspected water or air tested system. If a smoke or peppermint test is required, the following test methods shall be employed:

a. A smoke test shall be made by filling all traps with water and then re introducing into the entire system a pungent, thick smoke produced by one or more smoke machines. When the smoke appears at stack openings on the roof, they shall be closed and a pressure equivalent to a one-inch water column shall be developed and maintained for the period of the inspection.
b. Where the Authority Having Jurisdiction, due to practical difficulties or hardships, finds that a smoke test cannot be performed, a peppermint test shall be substituted in lieu thereof. Such peppermint test shall be conducted by the introduction of two ounces of oil of peppermint into the roof terminal of every line or stack to be tested. The oil of peppermint shall be followed at once by ten quarts of hot (140 degrees F) water whereupon all roof vent terminals shall be sealed. A positive test, which reveals leakage, shall be the detection of the odor of peppermint at any trap or other point on the system. Oil of peppermint or person or clothes have come in contact with oil of peppermint shall be excluded from the test area.

3.8 VALVE INSTALLATIONS

A. General Application: Use ball, and butterfly valves for shut-off duty; ball, and butterfly for throttling duty. Refer to piping system specification sections for specific valve applications and arrangements.

B. Locate valves for easy access and provide separate support where necessary.

C. Install valves and unions for each item of equipment arranged to allow equipment removal without system shutdown. Unions are not required on flanged devices.

D. Install valves in horizontal piping with stem at or above the center of the pipe.

E. Install valves in a position to allow full stem movement.

F. Installation of Check Valves: Install for proper direction of flow as follows:
   1. Wafer Check Valves: Horizontal or vertical position.

3.9 THREADED CONNECTIONS

A. Note the internal length of threads in valve ends, and proximity of valve internal seat or wall, to determine how far pipe should be threaded into valve.

B. Align threads at point of assembly.

C. Apply appropriate tape or thread compound to the external pipe threads (except where dry seal threading is specified).

D. Assemble joint, wrench tight. Wrench on valve shall be on the valve end into which the pipe is being threaded.

3.10 FLANGED CONNECTIONS

A. Align flange surfaces parallel.

B. Assemble joints by sequencing bolt tightening to make initial contact of flanges and gaskets as flat and parallel as possible. Use suitable lubricants on bolt threads. Tighten bolts gradually and uniformly with a torque wrench.

3.11 SCHEDULES

A. Pipe Hanger Spacing:

1. Cast Iron Piping: 5 feet maximum horizontal spacing, 15 feet maximum vertical spacing. Where 10 foot lengths of cast iron piping are installed, maximum horizontal spacing may be increased to 10 feet. All cast iron joints shall be supported.

END OF SECTION

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Drains.

1.2 SUBMITTALS

A. Product Data: Provide component sizes, rough-in requirements, service sizes, and finishes.

B. Shop Drawings: Indicate dimensions, weights, and placement of openings and holes.

C. Manufacturer's Instructions: Indicate Manufacturer's Installation Instructions: Indicate assembly and support requirements.

1.3 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with not less than three years documented experience.

PART 2 PRODUCTS

2.1 DRAINS

A. Downspout Nozzles:
   1. Bronze round with straight bottom section.

PART 3 EXECUTION

3.1 INSTALLATION

A. Install in accordance with manufacturer's instructions.

END OF SECTION

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PART 1 GENERAL

1.1 SECTION INCLUDES

A. Submersible sump pumps.

1.2 SUBMITTALS

A. Product Data:
   1. Indicate pump type, capacity, power requirements.
   2. Provide certified pump curves showing pump performance characteristics with pump and system operating point plotted. Include NPSH curve when applicable.
   3. Provide electrical characteristics and connection requirements.

B. Warranty Documentation: Submit manufacturer warranty and ensure that forms have been completed in Nanuet Union Free School District's name and registered with manufacturer.

1.3 QUALITY ASSURANCE

A. Identification: Provide pumps with manufacturer's name, model number, and rating/capacity identified by permanently attached label.

B. Performance: Ensure pumps operate at specified system fluid temperatures without vapor binding and cavitation, are non-overloading in parallel or individual operation, operate within 25 percent of midpoint of published maximum efficiency curve.

1.4 DELIVERY, STORAGE, AND HANDLING

A. Provide temporary inlet and outlet caps. Maintain caps in place until installation.

1.5 WARRANTY

A. Provide five year manufacturer warranty for submersible sump pumps.

PART 2 PRODUCTS

2.1 SUBMERSIBLE SUMP PUMPS

A. The pump(s) shall be designed to handle, without clogging, clean water, contaminated water, wstewater effluent, storm water, and other similar corrosive liquids which may contain small solids. The pump shall have integrated feet allowing it to stand on a hard bottom wet well.

B. PUMP CONSTRUCTION: Major pump components shall be of Stainless Steel 304, and FC-20 Cast Iron, with smooth surfaces devoid of porosity or other irregularities. All exposed fasteners shall be AISI type 304 stainless steel. Critical mating surfaces where a watertight seal is required shall be machined and fitted with Nitrile (Buna N) O-rings. Sealing will be the result of controlled compression of rubber O-rings without requiring a specific torque on fasteners to accomplish sealing. Rectangular cross sectioned gaskets requiring specific fastener torque to achieve compression shall not be considered adequate or equal. No secondary sealing compounds shall be used or required.

C. Impeller: The impeller shall be a non-clogging, dynamically balanced, vortex design, capable of passing a 35-mm diameter spherical solid. The impeller shall have threaded onto the motor shaft, and shall be fastened to the shaft by a stainless-steel impeller nut. The use of adjustable bottom plates to maintain efficiency shall not be considered equal.

D. Pump Volute: The pump volute shall be a single piece design with vertical discharge. Passages shall be smooth and large enough to pass any solids which may enter the impeller. Volute inlet opening shall be 35mm. Discharge design shall permit attachment to standard 2” NPS pipe fittings.

E. Shaft & Rotating Assembly: The common motor/pump shaft shall be of Stainless Steel (410) material that is in contact with pump's mechanical seals and shall have a polished finish and accurately machined shoulders to accommodate bearings, seals and impeller. Carbon steel shafts shall not be considered adequate or equal. The rotating assembly (impeller, shaft and rotor) shall be dynamically balanced such that undue vibration or other unsatisfactory characteristics will not result when the pump is in operation.

F. Triple Seal System: Each pump shall be equipped with a tandem mechanical shaft seal system consisting of two independent seal assemblies with a common spring between them and a radial lip seal; providing three complete levels of sealing between the pump wet end and the motor. The mechanical seals shall operate in an oil filled chamber which is completely separate from the motor chamber. The seal faces shall be SiC/SiC for the lower seal and Carbon/Ceramic for the upper seal. Metallic components of the mechanical seal shall be constructed of 300 series stainless steel. The seal system shall not rely upon the pumped media for lubrication and shall not be damaged when the pump is run dry. A readily accessible inspection screw shall be provided for inspecting the condition of the seal chamber oil during routine maintenance.

G. Bearings: The pump shaft shall rotate on permanently lubricated, greased bearings. The upper bearing shall be a single row deep grooved ball bearing. The lower bearing shall be a heavy duty single row, deep grooved ball bearing. Upper and lower bearings shall be of sufficient size and properly spaced to transfer all radial and axial loads to the pump housing and minimize shaft deflection. B-10 bearing life shall be a minimum of 30k hr at BEP. Pump designs utilizing other than ball bearings, or those requiring supplemental guide bushings for the shaft or impeller shall not be considered acceptable.

H. Motor: The motor housing shall be 304 stainless steel and the top cover of Nylon 66. The motor shall be of the squirrel-cage induction design with copper windings, housed in an air filled, water tight chamber. The motor shall be capable of continuous submerged operation under water to a depth of 30 feet. The stator windings and stator leads shall be insulated with moisture resistant Class B insulation rated for 130oC (266o F). The motor shall be capable of operating continuously, submerged in liquid of 40oC (104 oF) without overheating. The motor shall be capable of handling up to 10 evenly spaced starts per hour. All motors shall have a voltage tolerance of +/- 10% from nominal name plate rating.

I. Power Cable: The power cable shall be sized according to NEC and CSA standards and shall be of sufficient length to reach the junction box without requiring splices. The outer jacket of the cable shall be oil and water resistant thermoplastic elastomer. The power cable shall be fitted to the motor using an epoxy potted water tight cable entry system with a rubber grommet as the secondary seal and strain relief.

J. Pump system:
   1. NEMA 4x weathertight corrosion resistant polycarbonate enclosures
   2. Stainless steel sensor probe with patented electronic technology that repels dirt contamination
   3. Single direct plug-in power source for operation of entire system
   4. Solid state components
   5. Alarms, lights, silence switch, and remote monitoring circuit for oil, high liquid, and high amperage conditions
   6. Complete factory assembly and testing insures quality of entire pump and control system
   7. LED indicator lights for oil spill, power, high liquid level, overload, and pump run
   8. UL 508 and 778 approved
   9. ENTELA tested and approved as a system

PART 3 EXECUTION

3.1 INSTALLATION

A. Install plumbing equipment in accordance with manufacturer's instructions, as required by code, and complying with conditions of certification, if any.

B. Coordinate with plumbing piping and related fuel piping work to achieve operating system.

C. Pumps:

1. Ensure pumps operate at specified system fluid temperatures without vapor binding and cavitation, are non-overloading in parallel or individual operation, and operate within 25 percent of midpoint of published maximum efficiency curve.

END OF SECTION

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PART 1 GENERAL

1.1 SUMMARY

A. This section includes the following basic mechanical materials and methods to complement other Division 23 Sections.
   1. Field-fabricated metal and wood equipment supports.
   2. Water soluble flux.
   3. Plumbing solder.
   4. Installation requirements common to equipment specifications.
   5. Firestopping (refer to specification section 078413).
   6. Cutting and patching.
   7. Touchup painting and finishing.
   8. Demolition.
   9. Mechanical Equipment Instruction

B. Pipe and pipe fitting materials are specified in piping system Sections.

1.2 DEFINITIONS

A. Pipe, pipe fittings, and piping include tube, tube fittings, and tubing.

B. Finished Spaces: Spaces other than mechanical and electrical equipment rooms furred spaces, pipe and duct shafts, unheated spaces immediately below the roof, spaces above ceilings, unexcavated spaces, crawl spaces and tunnels.

C. Exposed Interior Installations: Exposed to view indoors. Examples include finished occupied spaces and mechanical equipment rooms.

D. Exposed Exterior Installations: Exposed to view outdoors, or subject to outdoor ambient temperatures and weather conditions. Examples include rooftop locations.

E. Concealed Interior Installations: Concealed from view and protected from physical contact by building occupants. Examples include above ceilings and in duct shafts.

F. Concealed Exterior Installations: Concealed from view and protected from weather conditions and physical contact by building occupants, but subject to outdoor ambient temperatures. Examples include installations within unheated shelters.

1.3 SUBMITTALS

A. General: Submit the following according to the conditions of the Contract and Division 1 Specification Sections.
   1. Product Data: Provide product data for piping specialties.
   2. Shop Drawings: Detailing fabrication and installation for metal and wood supports, and anchorage for mechanical materials and equipment.
   3. Identification materials and devices.
   4. Certificates: Welder certificates signed by the Contractor certifying that welders meet or exceed the requirements specified under the "Quality Assurance" Article.
   5. Warranty: Submit manufacturer warranty and ensure that forms have been completed in Nanuet Union Free School District's name and registered with manufacturer.

1.4 QUALITY ASSURANCE

A. Perform work in accordance with the Building Code of New York State.

B. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than three years of documented experience.

C. Installer Qualifications: Company specializing in performing the work of this section with minimum three years of experience.

D. Qualify welding processes and operators for structural steel according to AWS D1.1 "Structural Welding Code--Steel."

E. Equipment Selection: Equipment of greater or larger power, dimensions, capacities, and ratings may be furnished provided such proposed equipment is approved in writing and connecting mechanical and electrical services, circuit breakers, conduit, motors, bases and equipment spaces are increased. No additional costs will be approved for these increases, if larger equipment is approved. If minimum energy ratings or efficiencies of the equipment are specified, the equipment must meet the design requirements and commissioning requirements.

1.5 PIPING DELIVERY, STORAGE, AND HANDLING

A. Deliver pipes and tubes with factory-applied end-caps. Maintain end-caps through shipping, storage, and handling to prevent pipe-end damage and prevent entrance of dirt, debris, and moisture.

B. Protect stored pipes and tubes from moisture and dirt. Elevate above grade. When stored inside, do not exceed structural capacity of the floor.

C. Protect flanges, fittings, and piping specialties from moisture and dirt.

D. Protect stored plastic pipes from direct sunlight. Support to prevent sagging and bending.

1.6 SEQUENCING AND SCHEDULING

A. Coordinate mechanical equipment installation with other building components.

B. Arrange for chases, slots, and openings in building structure during progress of construction to allow for mechanical installations.

C. Coordinate the installation of required supporting devices and set sleeves in poured-in-place concrete and other structural components as they are constructed.

D. Sequence, coordinate, and integrate installations of mechanical materials and equipment for efficient flow of the Work.

E. Coordinate connection of electrical services.

F. Coordinate connection of mechanical systems with utilities and services. Comply with requirements of governing regulations, landlord, franchised service companies, and controlling agencies.

G. Coordinate requirements for access panels and doors where mechanical items requiring access are concealed behind finished surfaces. Refer to architectural specifications for access door requirements and sizes. Provide access doors per the architectural specifications at inaccessible ceiling locations at all locations where access is required to mechanical components. This includes at all gypsum wall board ceiling and soffit systems.

H. Coordinate installation of identifying devices after completing covering and painting where devices are applied to surfaces. Install identifying devices prior to installing acoustical ceilings and similar concealment.

PART 2 PRODUCTS

2.1 WATER SOLUBLE FLUX

A. Water Soluble Flux: Taramet Sterling(R) lead-free water soluble flux, conforming to ASTM B 813.

2.2 PLUMBING SOLDER

A. Plumbing Solder: Sterling® solder, ASTM B 32, Alloy Grade TC; 95 percent tin, 4.85 percent copper, 0.15 percent selenium.
   1. Certified to comply with NSF 61.
   2. Melting Temperature: 410 degrees F..
   3. Tensile Strength: 7,130 psi.
   4. Shear Strength: 5,979 psi.
   5. Elongation Percent: 19.1.
   6. Brinell Hardness: 15.1.
   7. Burst Strength: 5,800 psi.
   8. Pressure/Temperature Test Data on Copper Tube Assemblies comprised of 3 inch, 2 inch, 1 inch, 3/4 inch, and 1/2 inch Tubing with a Reducing Tee:
      a. No leaks at 180 degrees F., 200 psi, held for 2 minutes.

2.3 PIPE, PIPE FITTINGS, AND JOINING MATERIALS

A. Refer to individual piping system specification sections for pipe fitting materials and joining methods.

B. Pipe Threads: ASME B1.20.1 for factory threaded pipe and fittings.

C. Pipe Flange Gasket Materials: Suitable for thermal and chemical conditions of the contents of the piping system.
   1. ASME B16.21, non-metallic, flat, asbestos-free, 1/8 inch maximum thickness, except where thickness or specific material is indicated
      a. Full-Face Type: For flat-face, Class 125 cast-iron and cast-bronze flanges.
      b. Narrow-Face Type: For raised-face, Class 250 cast-iron and steel flanges.
   2. AWWA C110, rubber, flat-face, 1/8 inch thick, except where other thickness is indicated; and full-face or ring-type, except where type is indicated.

D. Flange Bolts and Nuts: ASME B18.2.1, carbon steel, except where other material is specified.

2.4 PIPING SPECIALTIES

A. Escutcheons: Manufactured wall, ceiling, and floor plates; deep-pattern type where required to conceal protruding fittings and sleeves.
   1. Inside Diameter: Closely fit around pipe, tube and insulation.
   2. Outside Diameter: Completely cover opening.
   3. Stamped Steel: One-piece, with set-screw and chrome-plated finish.
   4. Cast-Iron Floor Plate: One-piece casting.

B. Dielectric Fittings: Assembly or fitting having insulating material isolating joined dissimilar metals to prevent galvanic action and stop corrosion.
   1. Description: Combination of copper alloy and ferrous; threaded, solder, plain, and weld neck end types and matching piping system materials.
   2. Insulating Material: Suitable for system fluid, pressure and temperature.
   3. Dielectric Unions: Factory-fabricated, union assembly for 250-psig minimum working pressure at a 180 deg. F temperature.

PART 3 EXECUTION

3.1 PREPARATION

A. Ream pipe and tube ends. Remove burrs. Bevel plain end ferrous pipe.

B. Remove scale and dirt on inside and outside before assembly.

C. Prepare piping connections to equipment with flanges or unions.

D. Keep open ends of pipe free from scale and dirt. Whenever work is suspended during construction protect open ends with temporary plugs or caps.

E. After completion, fill, clean, and treat systems. Refer to Section 232500.

3.2 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Route piping in orderly manner, plumb and parallel to building structure, and maintain gradient.

C. Install piping to conserve building space and avoid interference with use of space.

D. Sleeve pipe passing through partitions, walls, and floors.

E. Install piping to allow for expansion and contraction without stressing pipe, joints, or connected equipment.

F. Inserts:
1. Provide inserts for placement in concrete formwork.
2. Provide inserts for suspending hangers from reinforced concrete slabs and sides of reinforced concrete beams.
3. Where concrete slabs form finished ceiling, locate inserts flush with slab surface.
4. Where inserts are omitted, drill through concrete slab from below and provide through-bolt with recessed square steel plate and nut above slab.

G. Pipe Hangers and Supports:
1. Install in accordance with ASME B31.9.
2. Support horizontal piping as scheduled.
3. Place hangers within 12 inches of each horizontal elbow.
4. Use hangers with 1-1/2 inch minimum vertical adjustment. Design hangers for pipe movement without disengagement of supported pipe.
5. Support vertical piping at every other floor. Support riser piping independently of connected horizontal piping.
6. Where several pipes can be installed in parallel and at same elevation, provide multiple or trapeze hangers.
7. Provide copper plated hangers and supports for copper piping.
8. Prime coat exposed steel hangers and supports. Refer to Section 09900. Hangers and supports located in crawl spaces, pipe shafts, and suspended ceiling spaces are not considered exposed.

H. Provide clearance for installation of insulation and access to valves and fittings.

I. Provide access where valves and fittings are not exposed.

J. Where pipe support members are welded to structural building framing, scrape, brush clean, and apply one coat of zinc rich primer to welds.

K. Install valves with stems upright or horizontal, not inverted.

3.3 EQUIPMENT INSTALLATION - COMMON REQUIREMENTS

A. Install equipment to provide the maximum possible headroom where mounting heights are not indicated.

B. Install equipment according to approved submittal data. Portions of the Work are shown only in diagrammatic form. Refer conflicts to the Architect.

C. Install equipment level and plumb, parallel and perpendicular to other building systems and components in exposed interior spaces, except where otherwise indicated.

D. Install mechanical equipment to facilitate servicing, maintenance, and repair or replacement of equipment components. Connect equipment for ease of disconnecting, with minimum of interference with other installations. Extend grease fittings to an accessible location

E. Install equipment giving right-of-way to piping systems installed at a required slope.

3.4 PAINTING AND FINISHING

A. Damage and Touch Up: Repair marred and damaged factory-painted finishes with materials and procedures to match original factory finish

3.5 ERECTION OF METAL SUPPORTS AND ANCHORAGE

A. Cut, fit, and place miscellaneous metal supports accurately in location, alignment, and elevation to support and anchor mechanical materials and equipment.

B. Field Welding: Comply with AWS D1.1 "Structural Welding Code--Steel."

3.6 CUTTING AND PATCHING

A. Cut, channel, chase, and drill floors, walls, partitions, ceilings, and other surfaces necessary for mechanical installations. Perform cutting by skilled mechanics of the trades involved.

B. Repair cut surfaces to match adjacent surfaces.

3.7 MECHANICAL EQUIPMENT INSTRUCTION

A. Provide instruction of the Owner's representatives for the duration specified below in operation and maintenance of the following equipment:
   1. Cabinet Unit heaters (minimum 2 hours).
   2. Controls (minimum 4 hours).

3.8 DEMOLITION

A. Disconnect, demolish, and remove work specified under Division 23 and as indicated.

B. Where pipe, breeching, insulation, or equipment to remain is damaged or disturbed, remove damaged portions and install new products of equal capacity and quality.

C. Accessible Work: Remove indicated exposed pipe and breeching in its entirety.

D. Removal: Remove indicated equipment from the project site.

E. Temporary Disconnection: Remove, store, clean, reinstall, reconnect, and make operational, equipment indicated for relocation.

END OF SECTION

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PART 1 GENERAL

1.1 SECTION INCLUDES

A. Expansion joints and compensators.

1.2 REFERENCE STANDARDS

A. ASTM A269/A269M - Standard Specification for Seamless and Welded Austenitic Stainless Steel Tubing for General Service; 2015.

B. EJMA (STDS) - EJMA Standards; Tenth Edition.

C. UL (DIR) - Online Certifications Directory; current listings at database.ul.com.

1.3 SUBMITTALS

A. Product Data:
   1. Expansion Joints/Loops: Indicate maximum temperature and pressure rating, and maximum expansion compensation.

B. Manufacturer's Instructions: Indicate manufacturer's installation instructions, special procedures, and external controls.

C. Project Record Documents: Record installed locations of flexible pipe connectors, expansion joints, anchors, and guides.

PART 2 PRODUCTS

2.1 REGULATORY REQUIREMENTS

A. Comply with UL (DIR) requirements.

2.2 EXPANSION JOINTS, HEATING WATER PIPING SYSTEMS

A. General
   1. Provide flexible hose expansion loop(s) as indicated on the contract drawings or as required to accommodate any thermal expansion, contraction, or seismic movement of the piping system.
   2. Flexible hose expansion loops shall be manufactured complete with two perpendicular sections of corrugated metal house, compatible braid, 90 degree return bend, with inlet and outlet connections. Field fabricated loops shall not be acceptable.
   3. Flexible loops shall be capable of movement in the ±X, ±Y, and ±Z planes.
   4. Flexible hose expansion loops shall impart no thrust loads to system support, anchors or building structure.
   5. All flexible hose expansion loops shall be manufactured in accordance with the documented manufacturers weld procedure specifications in accordance with ASME Section IX.
   6. All flexible hose expansion loops shall be manufactured in accordance with ASME / ANSI B31.1

B. Product Data:
   1. Corrugated Hose
      a. Stainless Steel
         1) Type 321
      b. Braid
         1) 304 Stainless Steel braid shall be used for any series 300 stainless steel hose.
         2) Layers

(a) Single layer

2. Fittings Materials of construction
   a. End fittings shall match fittings material.
      1) MPT in accordance with ASME B1.20.1

C. Flexible hose expansion loops shall have a factory supplied; hanger / support lug located at the bottom of the 180 degree return.

D. Flexible hose expansion loop(s) shall be furnished with a plugged FPT to be used for a drain or air release vent.

E. Flexible hose expansion loop(s) shall be rated with an operating pressure in accordance with manufacturer's documentation. The operating pressure shall be based on burst pressure with a 4 to 1 safety factor.

F. Threaded copper tube end fittings shal be provided to match connecting pipe

G. At least one pipe alignment guide shall be used within four pipe diameters on each side of the loop.

2.3 ACCESSORIES

A. Pipe Alignment Guides:
   1. General
      a. Provide insulated pipe guides as indicated on project plans or in accordance with EJMA guidelines based on design pressure and line size.
      b. Primary and intermediate guides shall be pre-insulated spider type.
   2. Products
      a. All components shall be manufactured in compliance with the Manufacturer's Standardization Society (MSS) SP-58 and SP-89
      b. Guide shall be made up of a guide cylinder with bolt down base and a two-section guide spider with 1/8" clearance and insulation.
      c. Insulation shall be Calcium Silicate insulation.
         1) Insulation shall have 450 PSI compressive strength per ASTM C656, Type II, Grade 5
         2) Insulation shall have a K-Factor: .62 @400 F in accordance to ASTM C-518
         3) Insulation shall have a Flame Spread -0-, Smoke developed -0-. In accordance with ASTM E-84
      d. Guide shall be made up of ASTM A-134 carbon steel.
      e. Insulated Guide cylinder shall be sized to accommodate pipe insulation.
      f. Guide spider shall be sized to accommodate thermal movement.
      g. All surfaces of guide shall be coated with fusion bonded powder coating.

B. Anchor Clamps:
   1. Carbon steel, light weight anchor that clamps to pipe and shall be either bolted or welded to the structure.
   2. Approximate spring force (in pounds) required for anchors by pipe size:
      a. 1" pipe size: 46 pounds.

PART 3 EXECUTION

3.1 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Install in accordance with EJMA (Expansion Joint Manufacturers Association) Standards.

C. Pipe Guides:

1. Install per manufacturer's installation instructions and Mechanical Contractors Association of America "Guidelines for Quality Piping Installations".
2. Spider type guides are rated to restrain lateral loads only and do not replace pipe supports.

D.

E. Anchor pipe to building structure where indicated. Provide pipe guides so movement is directed along axis of pipe only. Erect piping such that strain and weight is not on cast connections or apparatus.

END OF SECTION

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PART 1 GENERAL

1.1 SECTION INCLUDES

A. Vibration isolation requirements.

B. Vibration isolators.

1.2 REFERENCE STANDARDS

A. ASCE 7 - Minimum Design Loads for Buildings and Other Structures; 2010, with 2013 Supplements and Errata.

B. ASHRAE (HVACA) - ASHRAE Handbook - HVAC Applications; 2015.

1.3 SUBMITTALS

A. Product Data:
   1. Provide manufacturer's product literature documenting compliance with PART 2 PRODUCTS.

B. Shop Drawings:
   1. Provide schedule of vibration isolator type with location and load on each.

C. Manufacturer's Instructions: Indicate installation instructions with special procedures and setting dimensions.

1.4 QUALITY ASSURANCE

A. Comply with applicable building code.

B. Perform design and installation in accordance with applicable codes.

C. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than 5 years of documented experience.
   1. Member of Vibration Isolation and Seismic Control Manufacturers Association (VISCMA).

D. Installer Qualifications: Company specializing in performing the work of this section with minimum 5 years of experience.

PART 2 PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Kinetics Noise Control, Inc: www.kineticsnoise.com.

B. Mason Industries: www.mason-ind.com.

C. Vibration Eliminator Company, Inc: www.veco-nyc.com.

2.2 PERFORMANCE REQUIREMENTS

A. General:
   1. All vibration isolators to conform to all uniform deflection and stability requirements under all operating loads.
   2. Steel springs to function without undue stress or overloading.
   3. Lateral to vertical stiffness ratio to not exceed 0.08 with spring deflection at minimum 75 percent of specified deflection.

2.3 VIBRATION ISOLATORS

A. General Requirements:
   1. Resilient Materials for Vibration Isolators: Oil, ozone, and oxidant resistant.

2. Spring Elements for Spring Isolators:
   a. Color code or otherwise identify springs to indicate load capacity.
   b. Lateral Stability: Minimum lateral stiffness to vertical stiffness ratio of 0.8.
   c. Designed to operate in the linear portion of their load versus deflection curve over deflection range of not less than 50 percent above specified deflection.
   d. Designed to provide additional travel to solid of not less than 50 percent of rated deflection at rated load.
   e. Selected to provide designed deflection of not less than 75 percent of specified deflection.
   f. Selected to function without undue stress or overloading.

B. Vibration Isolators for Non-seismic Applications:
   1. Resilient Material Isolator Mounts, Nonseismic:
      a. Description: Mounting assemblies for bolting equipment to supporting structure utilizing elastomeric (e.g., neoprene, rubber) isolator material; fail-safe type.
   2. Housed Spring Isolators:
      a. Description: Isolator assembly consisting of single or multiple free-standing, laterally stable steel spring(s) within a metal housing.
      b. Furnished with integral elastomeric snubbing elements, nonadjustable type, for limiting equipment movement and preventing metal-to-metal contact between housing elements.
      c. Bottom Load Plate: Steel with nonskid, elastomeric isolator pad with provisions for bolting to supporting structure as required.
      d. Furnished with integral leveling device for positioning and securing supported equipment.
   3. Restrained Spring Isolators, Nonseismic:
      a. Description: Isolator assembly consisting of single or multiple free-standing, laterally stable steel spring(s) within a metal housing designed to prevent movement of supported equipment above an adjustable vertical limit stop.
      b. Bottom Load Plate: Steel with nonskid elastomeric isolator pad with provisions for bolting to supporting structure as required.
      c. Furnished with integral leveling device for positioning and securing supported equipment.
      d. Provides constant free and operating height.
   4. Resilient Material Isolator Hangers, Nonseismic:
      a. Description: Isolator assembly designed for installation in hanger rod suspension system utilizing elastomeric (e.g., neoprene, rubber) or fiberglass isolator material for the lower hanger rod connection.
   5. Spring Isolator Hangers, Nonseismic:
      a. Description: Isolator assembly designed for installation in hanger rod suspension system utilizing single or multiple free-standing, laterally stable steel spring(s) in series with an elastomeric element for the lower hanger rod connection.
      b. Designed to accommodate misalignment of bottom hanger rod up to 30 degrees (plus/minus 15 degrees) without short-circuiting of isolation.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that field measurements are as shown on the drawings.

B. Verify that mounting surfaces are ready to receive vibration isolation and/or seismic control components and associated attachments.

C. Verify that conditions are satisfactory for installation prior to starting work.

3.2 INSTALLATION

A. Install products in accordance with manufacturer's instructions.

B. Install anchors and fasteners in accordance with ICC Evaluation Services, LLC (ICC-ES) evaluation report conditions of use where applicable.

C. Secure fasteners according to manufacturer's recommended torque settings.

D. Install flexible piping connections to provide sufficient slack for vibration isolation and/or seismic relative displacements as indicated or as required.

E. Vibration Isolation Systems:
   1. Spring Isolators:
      a. Position equipment at operating height; provide temporary blocking as required.
      b. Lift equipment free of isolators prior to lateral repositioning to avoid damage to isolators.
      c. Level equipment by adjusting isolators gradually in sequence to raise equipment uniformly such that excessive weight or stress is not placed on any single isolator.
   2. Isolator Hangers:
      a. Use precompressed isolator hangers where required to facilitate installation and prevent damage to equipment utility connection provisions.
      b. Locate isolator hangers at top of hanger rods in accordance with manufacturer's instructions.
   3. Clean debris from beneath vibration-isolated equipment that could cause short-circuiting of isolation.
   4. Use elastomeric grommets for attachments where required to prevent short-circuiting of isolation.
   5. Adjust isolators to be free of isolation short circuits during normal operation.
   6. Do not overtighten fasteners such that resilient material isolator pads are compressed beyond manufacturer's maximum recommended deflection.

3.3 INSTALLATION - GENERAL

A. Install in accordance with manufacturer's instructions.

B. On closed spring isolators, adjust so side stabilizers are clear under normal operating conditions.

C. Prior to making piping connections to equipment with operating weights substantially different from installed weights, block up equipment with temporary shims to final height. When full load is applied, adjust isolators to load to allow shim removal.

3.4 SCHEDULE

A. Pipe Isolation Schedule (open spring isolators).
   1. 1 Inch Pipe Size: Isolate 120 diameters from equipment.
   2. 2 Inch Pipe Size: Isolate 90 diameters from equipment.
   3. 3 Inch Pipe Size: Isolate 80 diameters from equipment.

B. Equipment Isolation Schedule.
   1. Hot Water Unit Heaters: Rubber in shear hangers, minimum 1/4 inches static deflection.
   2. Inline Fans: Restrained spring isolators, minimum 1-1/2 inches static deflection.

END OF SECTION

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PART 1 GENERAL

1.1 SECTION INCLUDES

A. Nameplates.
B. Tags.
C. Pipe markers.

1.2 REFERENCE STANDARDS

A. ASME A13.1 - Scheme for the Identification of Piping Systems; 2007.
B. ASTM D709 - Standard Specification for Laminated Thermosetting Materials; 2013.

1.3 SUBMITTALS

A. List: Submit list of wording, symbols, letter size, and color coding for mechanical identification.
B. Product Data: Provide manufacturers catalog literature for each product required.
C. Project Record Documents: Record actual locations of tagged valves.

PART 2 PRODUCTS

2.1 IDENTIFICATION APPLICATIONS

A. Cabinet Unit Heaters: Nameplates.
B. Automatic Controls: Tags. Key to control schematic.
C. Piping: Pipe markers and Tags.
D. Relays: Tags.
E. Valves: Tags .

2.2 NAMEPLATES

A. Letter Color: White.
B. Letter Height: 1/4 inch.
C. Background Color: Black.
D. Plastic: Comply with ASTM D709.

2.3 TAGS

A. Metal Tags: Brass with stamped letters; tag size minimum 1-1/2 inch diameter with smooth edges.

2.4 PIPE MARKERS

A. Color: Comply with ASME A13.1.
B. Plastic Pipe Markers: Factory fabricated, flexible, semi- rigid plastic, preformed to fit around pipe or pipe covering; minimum information indicating flow direction arrow and identification of fluid being conveyed.

2.5 VALVE SERVICE IDENTIFICATION TAGS

A. Type: No. 19 B & S gage brass, with 1/4 inch high valve service abbreviated lettering on one line over 1/2 inch high valve service chart number, both deep stamped and black filled; and with 3/16 inch top hole for fastener.

B. Sizes:
   1. 1-1/2 inch dia round.

C. Fasteners: Brass "S" hook or brass jack chain of size as required for valve stem or handle to which tag is attached.

D. Acceptable Manufacturers:
   1. Seton
   2. Brady
   3. Emedco

PART 3 EXECUTION

3.1 PREPARATION

A. Degrease and clean surfaces to receive adhesive for identification materials.

3.2 INSTALLATION

A. Install nameplates with corrosive-resistant mechanical fasteners, or adhesive. Apply with sufficient adhesive to ensure permanent adhesion and seal with clear lacquer.

B. Install tags with corrosion resistant chain.

C. Install plastic tape pipe markers complete around pipe in accordance with manufacturer's instructions.

D. Use tags on piping 3/4 inch diameter and smaller.
   1. Identify service, flow direction, and pressure.
   2. Install in clear view and align with axis of piping.
   3. Locate identification not to exceed 20 feet on straight runs including risers and drops, adjacent to each valve and Tee, at each side of penetration of structure or enclosure, and at each obstruction.

END OF SECTION

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Testing, adjustment, and balancing of hydronic systems.

B. Measurement of final operating condition of HVAC systems.

1.2 REFERENCE STANDARDS

A. AABC (NSTSB) - AABC National Standards for Total System Balance, 7th Edition; 2016.

B. AABC MN-1 - AABC National Standards for Total System Balance; 2002.

C. NEBB (TAB) - Procedural Standards for Testing Adjusting Balancing of Environmental Systems; 2005, Seventh Edition.

1.3 SUBMITTALS

A. Installer Qualifications: Submit name of adjusting and balancing agency and TAB supervisor for approval within 30 days after award of Contract.

B. Certification: All reports submitted, whether progress reports or final reports shall be certified and shall bear the seal of the certification agency.

C. TAB Plan: Submit a written plan indicating the testing, adjusting, and balancing standard to be followed and the specific approach for each system and component.
   1. Submit to Engineer.
   2. Submit to the Construction Manager and HVAC controls contractor.
   3. Submit six weeks prior to starting the testing, adjusting, and balancing work.
   4. Include certification that the plan developer has reviewed Contract Documents, the equipment and systems, and the control system with the Engineer and other installers to sufficiently understand the design intent for each system.
   5. Include at least the following in the plan:
      a. List of all air flow, water flow, sound level, system capacity and efficiency measurements to be performed and a description of specific test procedures, parameters, formulas to be used.
      b. Copy of field checkout sheets and logs to be used, listing each piece of equipment to be tested, adjusted and balanced with the data cells to be gathered for each.
      c. Identification and types of measurement instruments to be used and their most recent calibration date.
      d. Discussion of what notations and markings will be made on the duct and piping drawings during the process.
      e. Final test report forms to be used.
      f. Detailed step-by-step procedures for TAB work for each system and issue, including:
         1) Terminal flow calibration (for each terminal type).
         2) Total flow calculations.
         3) Rechecking.
         4) Diversity issues.
      g. Expected problems and solutions, etc.
      h. Details of how TOTAL flow will be determined; for example:
         1) Water: Pump curves, circuit setter, flow station, ultrasonic, etc.
      i. Methods for making coil or other system plant capacity measurements, if specified.
      j. Time schedule for TAB work to be done in phases (by floor, etc.).
      k. Time schedule for deferred or seasonal TAB work, if specified.
      l. False loading of systems to complete TAB work, if specified.

m. Procedures for field technician logs of discrepancies, deficient or uncompleted work by others, contract interpretation requests and lists of completed tests (scope and frequency).
n. Procedures for formal deficiency reports, including scope, frequency and distribution.

D. Control System Coordination Reports: Communicate in writing to the controls installer all setpoint and parameter changes made or problems and discrepancies identified during TAB that affect, or could affect, the control system setup and operation.

E. Final Report: Indicate deficiencies in systems that would prevent proper testing, adjusting, and balancing of systems and equipment to achieve specified performance.
1. Submit to the the Construction Manager and HVAC controls contractor within two weeks after completion of testing, adjusting, and balancing.
2. Revise TAB plan to reflect actual procedures and submit as part of final report.
3. Submit draft copies of report for review prior to final acceptance of Project. Provide final copies for Engineer and for inclusion in operating and maintenance manuals.
4. Include actual instrument list, with manufacturer name, serial number, and date of calibration.
5. Form of Test Reports: Where the TAB standard being followed recommends a report format use that; otherwise, follow ASHRAE Std 111.
6. Units of Measure: Report data in I-P (inch-pound) units only.

PART 2 PRODUCTS - NOT USED

PART 3 EXECUTION

3.1 GENERAL REQUIREMENTS

A. Perform total system balance in accordance with the following:
1. AABC (NSTSB), AABC National Standards for Total System Balance.

B. Begin work after completion of systems to be tested, adjusted, or balanced and complete work prior to Substantial Completion of the project.

C. TAB Agency Qualifications:
1. Company specializing in the testing, adjusting, and balancing of systems specified in this section.
2. Having minimum of three years documented experience.
3. Certified by the following:
a. AABC, Associated Air Balance Council: www.aabc.com/#sle; upon completion submit AABC National Performance Guaranty.

D. TAB Supervisor and Technician Qualifications: Certified by same organization as TAB agency.

3.2 EXAMINATION

A. Verify that systems are complete and operable before commencing work. Ensure the following conditions:
1. Systems are started and operating in a safe and normal condition.
2. Temperature control systems are installed complete and operable.
3. Proper thermal overload protection is in place for electrical equipment.
4. Hydronic systems are flushed, filled, and vented.
5. Pumps are rotating correctly.
6. Proper strainer baskets are clean and in place.
7. Service and balance valves are open.

B. Submit field reports. Report defects and deficiencies that will or could prevent proper system balance.

C. Beginning of work means acceptance of existing conditions.

3.3 PREPARATION

A. Provide instruments required for testing, adjusting, and balancing operations. Make instruments available to Engineer to facilitate spot checks during testing.

B. Provide additional balancing devices as required.

3.4 ADJUSTMENT TOLERANCES

A. Hydronic Systems: Adjust to within plus or minus 10 percent of design.

3.5 RECORDING AND ADJUSTING

A. Field Logs: Maintain written logs including:
   1. Running log of events and issues.
   2. Discrepancies, deficient or uncompleted work by others.
   3. Contract interpretation requests.
   4. Lists of completed tests.

B. Ensure recorded data represents actual measured or observed conditions.

C. Permanently mark settings of valves, dampers, and other adjustment devices allowing settings to be restored. Set and lock memory stops.

D. Mark on drawings the locations where traverse and other critical measurements were taken and cross reference the location in the final report.

E. After adjustment, take measurements to verify balance has not been disrupted or that such disruption has been rectified.

F. Leave systems in proper working order, replacing belt guards, closing access doors, closing doors to electrical switch boxes, and restoring thermostats to specified settings.

3.6 WATER SYSTEM PROCEDURE

A. Adjust water systems to provide required or design quantities.

B. Use calibrated Venturi tubes, orifices, or other metered fittings and pressure gages to determine flow rates for system balance. Where flow metering devices are not installed, base flow balance on temperature difference across various heat transfer elements in the system.

C. Adjust systems to provide specified pressure drops and flows through heat transfer elements prior to thermal testing. Perform balancing by measurement of temperature differential in conjunction with air balancing.

D. Effect system balance with automatic control valves fully open to heat transfer elements.

E. Effect adjustment of water distribution systems by means of balancing cocks, valves, and fittings. Do not use service or shut-off valves for balancing unless indexed for balance point.

F. Where available pump capacity is less than total flow requirements or individual system parts, full flow in one part may be simulated by temporary restriction of flow to other parts.

3.7 SCOPE

A. Test, adjust, and balance the following:
   1. Terminal Heat Transfer Units.

3.8 MINIMUM DATA TO BE REPORTED

A. Heating Coils:
   1. Identification/number.

2. Location.
3. Service.
4. Manufacturer.
5. Air flow, design and actual.
6. Water flow, design and actual.
7. Water pressure drop, design and actual.
8. Entering water temperature, design and actual.
9. Leaving water temperature, design and actual.
10. Entering air temperature, design and actual.
11. Leaving air temperature, design and actual.

END OF SECTION

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Piping insulation.

B. Jackets and accessories.

1.2 REFERENCE STANDARDS

A. ASTM A666 - Standard Specification for Annealed or Cold-Worked Austenitic Stainless Steel Sheet, Strip, Plate, and Flat Bar; 2015.

B. ASTM B209 - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate; 2014.

C. ASTM B209M - Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate [Metric]; 2014.

D. ASTM C177 - Standard Test Method for Steady-State Heat Flux Measurements and Thermal Transmission Properties by Means of the Guarded-Hot-Plate Apparatus; 2013.

E. ASTM C195 - Standard Specification for Mineral Fiber Thermal Insulating Cement; 2007 (Reapproved 2013).

F. ASTM C449 - Standard Specification for Mineral Fiber Hydraulic-Setting Thermal Insulating and Finishing Cement; 2007 (Reapproved 2013).

G. ASTM C518 - Standard Test Method for Steady-State Thermal Transmission Properties by Means of the Heat Flow Meter Apparatus; 2010.

H. ASTM C533 - Standard Specification for Calcium Silicate Block and Pipe Thermal Insulation; 2013.

I. ASTM C534/C534M - Standard Specification for Preformed Flexible Elastomeric Cellular Thermal Insulation in Sheet and Tubular Form; 2014.

J. ASTM C547 - Standard Specification for Mineral Fiber Pipe Insulation; 2015.

K. ASTM C578 - Standard Specification for Rigid, Cellular Polystyrene Thermal Insulation; 2015a.

L. ASTM C585 - Standard Practice for Inner and Outer Diameters of Thermal Insulation for Nominal Sizes of Pipe and Tubing; 2010.

M. ASTM C795 - Standard Specification for Thermal Insulation for Use in Contact with Austenitic Stainless Steel; 2008 (Reapproved 2013).

N. ASTM E84 - Standard Test Method for Surface Burning Characteristics of Building Materials; 2015a.

O. ASTM E96/E96M - Standard Test Methods for Water Vapor Transmission of Materials; 2014.

P. UL 723 - Standard for Test for Surface Burning Characteristics of Building Materials; Current Edition, Including All Revisions.

1.3 SUBMITTALS

A. Product Data: Provide product description, thermal characteristics, list of materials and thickness for each service, and locations.

B. Manufacturer's Instructions: Indicate installation procedures that ensure acceptable workmanship and installation standards will be achieved.

1.4 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with not less than three years of documented experience.

B. Applicator Qualifications: Company specializing in performing the type of work specified in this section with minimum 3 years of experience.

PART 2 PRODUCTS

2.1 REGULATORY REQUIREMENTS

A. Surface Burning Characteristics: Flame spread index/Smoke developed index of 25/50, maximum, when tested in accordance with ASTM E84 or UL 723.

2.2 GLASS FIBER, RIGID

A. Insulation: ASTM C547 and ASTM C795; semi-rigid, noncombustible, end grain adhered to jacket.
   1. Maximum Service Temperature: 650 degrees F.
   2. Maximum Moisture Absorption: 0.2 percent by volume.

B. Vapor Barrier Jacket: White kraft paper with glass fiber yarn, bonded to aluminized film; moisture vapor transmission when tested in accordance with ASTM E96/E96M of 0.02 perm-inches.

C. Tie Wire: 0.048 inch stainless steel with twisted ends on maximum 12 inch centers.

D. Vapor Barrier Lap Adhesive: Compatible with insulation.

E. Insulating Cement/Mastic: ASTM C195; hydraulic setting on mineral wool.

F. Fibrous Glass Fabric:
   1. Cloth: Untreated; 9 oz/sq yd weight.
   2. Blanket: 1.0 lb/cu ft density.
   3. Weave: 5 by 5.

G. Indoor Vapor Barrier Finish:
   1. Cloth: Untreated; 9 oz/sq yd weight.
   2. Vinyl emulsion type acrylic, compatible with insulation, black color.

H. Insulating Cement: ASTM C449.

2.3 JACKETS

A. PVC Plastic.
   1. Jacket: One piece molded type fitting covers and sheet material, off-white color.
      a. Minimum Service Temperature: 0 degrees F.
      b. Maximum Service Temperature: 150 degrees F.
      c. Moisture Vapor Permeability: 0.002 perm inch, maximum, when tested in accordance with ASTM E96/E96M.
      d. Thickness: 10 mil.
      e. Connections: Brush on welding adhesive.
   2. Covering Adhesive Mastic: Compatible with insulation.

PART 3 EXECUTION

3.1 EXAMINATION

A. Test piping for design pressure, liquid tightness, and continuity prior to applying insulation materials.

B. Verify that surfaces are clean and dry, with foreign material removed.

3.2 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Install in accordance with NAIMA National Insulation Standards.

C. Exposed Piping: Locate insulation and cover seams in least visible locations.

D. Insulated pipes conveying fluids below ambient temperature; insulate entire system including fittings, valves, unions, flanges, strainers, flexible connections, and expansion joints.

E. For hot piping conveying fluids over 140 degrees F, insulate flanges and unions at equipment.

F. Glass Fiber Insulated Pipes Conveying Fluids Above Ambient Temperature:
   1. Provide standard jackets, with or without vapor barrier, factory-applied, or field-applied. Secure with self-sealing longitudinal laps and butt strips with pressure-sensitive adhesive. Secure with outward clinch expanding staples.
   2. Insulate fittings, joints, and valves with insulation of like material and thickness as adjoining pipe. Finish with PVC fitting covers.

G. Inserts and Shields:
   1. Application: Piping 1-1/2 inches diameter or larger.
   2. Shields: Galvanized steel between pipe hangers or pipe hanger rolls and inserts.
   3. Insert location: Between support shield and piping and under the finish jacket.
   4. Insert Configuration: Minimum 6 inches long, of same thickness and contour as adjoining insulation; may be factory fabricated.
   5. Insert Material: Hydrous calcium silicate insulation or other heavy density insulating material suitable for the planned temperature range.

H. Continue insulation through walls, sleeves, pipe hangers, and other pipe penetrations. Finish at supports, protrusions, and interruptions. At fire separations, refer to Section 078413.

I. Pipe Exposed in Mechanical Equipment Rooms and Finished Spaces: Finish with PVC jacket and fitting covers.

3.3 SCHEDULE

A. Heating Systems:
   1. Heating Hot Water:
      a. Piping Size Range: Up to 1-1/4 inches: 1-1/2 inch thick glass fiber.
      b. Piping Size 1-1/2 inches and larger: 2 inches thick glass fiber.

END OF SECTION

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PART 1 GENERAL

1.1 SCOPE OF WORK

A. General:
   1. Provide connection of new cabinet unit heater terminal units into the existing Siemens Energy Management Control System (EMCS).
   2. The existing Building's EMCS Direct Digital Control (DDC) system is manufactured by Siemens Industry, Inc, which is the building's certified temperature control system. The products, control equipment, software, hardware, programming, graphics, wiring and conduit specified in this section shall be provided by Siemens Industry, Inc, 8 Fernwood Road, Florham Park, NY 07932, 201 454-3842 . All control system requirements specified in this section shall connect to the existing Siemens DDC system on the Nanuet School campus.
   3.
   4. Analog Outputs: All analog outputs referenced in the specifications or on the drawings shall be true modulating control signals activating devices with spring return features so that the end device fails into the normal position as described or indicated. Floating point type control accomplished by power-open and power-close signals using multiple digital outputs or pulse width modulation shall not be acceptable except for devices in which the sequences or the drawings specifically identify floating point operation. All devices indicated with normally open (NO) or normally closed (NC) positions shall feature spring return to the normal position upon loss of power or failure of signal.
   5. Provide operator training to the Nanuet Union Free School District as described in Section 3.
   6. Provide installation and calibration, supervision, adjustments, and fine tuning necessary for complete and fully operational system.

1.2 DDC SYSTEM DESCRIPTION

A. The entire Energy Management and Control System (EMCS) shall be comprised of a network of interoperable, stand-alone digital controllers communicating on an open protocol communication network. All information from the EMCS shall be available to local computers within the building via local Intranet and to remote computers or from multiple facilities via the Internet. The EMCS shall be capable of communicating to third party systems such as HVAC, lighting, energy metering, power management, clock displays, security, access control, fire-life safety systems and other building management related devices with open, interoperable communication capabilities.

B. All labor, material, equipment and software not specifically referred to herein or on the plans, that are required to meet the functional intent of this specification, shall be provided without additional cost to the Owner.

C. The intent of this specification is to provide open protocol field mounted Direct Digital controls. Open protocol, fully programmable, DDC controllers for each piece of mechanical equipment being controlled are mandatory. Controls that are “packaged” and supplied by the manufacturer are not acceptable. All systems as described in the sequence of operation shall be shown via dynamic Web based graphics with all pertinent system alarms for proper operation and maintenance.

D. System Architecture:
   1. Provide a twisted pair for DDC system communication with BACNet protocol between intelligent devices and controllers. All communications wiring shall be plenum rated.
   2. Provide programming for graphical display of all contract control systems on the existing head end.

1.3 CONTROL DIAGRAMS AND POINT SCHEDULES

A. The performance sequences described are provided to supplement the temperature control diagrams and point schedules as shown on the contract drawings. Where individual points are described in the diagrams and/or point schedules but are not required to meet the sequences specified, the points shall be included in the system as indicated on the drawings. All points shown on the drawings shall be provided whether or not they are required for the sequences. Additionally, provide all points which are required to meet the specified sequences, whether or not they are specifically identified on either the diagrams or the point schedules. The diagrams and point schedules are provided to enhance document clarity, and are not to be utilized to limit the hardware utilized in engineering the temperature control.

1.4 MANUFACTURER'S RECOMMENDATIONS

A. Where this specification does not describe installation procedures, or other equipment required to be in accordance with the recommendations of the manufacturer of the control system, provide those procedures and equipment without additional cost to the Owner as if it was explicitly specified in this contract. The contractor shall provide a complete and operable system which meets the recommendations of the equipment manufacturers.

1.5 REFERENCES

A. NFPA 70 - National Electrical Code; National Fire Protection Association; 2005.

B. UL-916 Energy Management Systems

C. ULC, UL Canadian Standards Association

D. FCC, Part 15, Subpart J, Class A Computing Devices

1.6 SUBMITTALS

A. Product Data: Provide data for each system component and software module.

B. Shop Drawings:
   1. Indicate trunk cable schematic showing programmable control unit locations, and trunk data conductors.
   2. List connected data points, including connected control unit and input device.
   3. Indicate system graphics indicating monitored systems, data (connected and calculated) point addresses, and operator notations.
   4. Show system configuration with peripheral devices, batteries, power supplies, diagrams, modems, and interconnections.
   5. Indicate description and sequence of operation of operating, user, and application software.
   6. Provide a complete point schedule demonstrating compliance with the point schedules included in the contract documents. Schedule format shall be such as to easily confirm that all the scheduled points are being provided.
   7. Provide a copy of all proposed system graphics.

C. Manufacturer's Instructions: Indicate manufacturer's installation instructions for all manufactured components.

D. Project Record Documents: Record actual locations of control components, including control units, thermostats, and sensors.
   1. Revise shop drawings to reflect actual installation and operating sequences.
   2. Include submittals data in final "Record Documents" form.

E. Operation and Maintenance Data:
   1. Include interconnection wiring diagrams complete field installed systems with identified and numbered, system components and devices.

2. Include keyboard illustrations and step-by-step procedures indexed for each operator function.
3. Include inspection period, cleaning methods, cleaning materials recommended, and calibration tolerances.

1.7 QUALITY ASSURANCE

A. Single Source Responsibility: The contractor shall be fully responsible for the proper operation of all control systems, including, but not limited to sensors and controls, and peripheral devices. After the installation, the contractor shall be responsible for the calibration of the system. The control system manufacturer shall be fully responsible for providing and loading the specified software packages, to include the loading of all necessary operational parameters. Any debugging of software problems shall be performed solely by the control system manufacturer.

B. Electrical Work and Safety Requirements:
   1. Electrical work shall be in strict accordance with applicable NFPA, ANSI and UL requirements. Fully enclose or properly guard electrical wiring, terminal blocks and other high voltage contacts and mark to prevent accidental injury to personnel.
   2. All wiring associated with and required by the control system (including power circuits as indicated on the drawings) shall be the responsibility of the contractor.
   3. Comply with all the latest federal, state and local rules, regulations, ordinances having jurisdiction over this work, including OSHA requirements. These codes and standards shall supersede the specifications and drawings. All work under this contract shall be in accordance with the latest editions of the National Electrical Code (NEC) and the electric codes in the locale in which the work is being performed.
   4. The term "wiring" shall be construed to include furnishing of wire, conduit, miscellaneous materials and labor as required for mounting and connecting electrical control devices, and providing electrical interlocks between equipment. Low voltage sensor wiring shall be installed per NEC and local codes.

C. Perform work in accordance with NFPA 70 and NFPA 90A.

D. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three years documented experience.

E. Installer Qualifications: Company specializing in performing the work of this section with minimum 3 years experience approved by manufacturer.

F. Products Requiring Electrical Connection: Listed and classified by Underwriters Laboratories Inc., as suitable for the purpose specified and indicated.

G. The BAS system shall be designed and installed, commissioned and serviced by factory trained personnel. BMS contractor shall have an in-place support facility within 100 miles of the site with technical staff, spare parts inventory and necessary test and diagnostic equipment. The BMS contractor shall provide full time, experienced project manager for this work, responsible for direct supervision of the design, installation, start up and commissioning of the B.M.S. The Bidder shall be regularly engaged in the installation and maintenance of BMS systems and shall have a minimum of ten (10) years of demonstrated technical expertise and experience in the installation and maintenance of B.M.S. systems similar in size and complexity to this project.

H. The BMS contractor shall maintain a service organization consisting of factory trained service personnel and provide a list of 10 projects, similar in size and scope to this project, completed within the last five years.

I. Materials and equipment shall be the catalogued products of manufacturers regularly engaged in production and installation of automatic temperature control systems and shall be manufacturer's latest standard design that complies with the specification requirements.

J. All BAS peer-to-peer network controllers, central system controllers, and local user displays shall be UL Listed under Standard UL 916, category PAZX; Standard ULC C100, category UUKL7; and under Standard UL 864, categories UUKL, UDTZ, and QVAX and be so listed at the time of bid. All floor level controllers shall comply, at a minimum, with UL Standard UL 91 6category PAZX; Standard UL 864, categories UDTZ, and QVAX and be so listed at the time of Bid.

K. The BAS peer-to-peer network controllers and local user display shall also comply with the European Electromagnetic Compatibility (EMC) Framework, and bear the C-Tic Mark to show compliance. The purpose of the regulation is to minimize electromagnetic interference between electronic products, which may diminish the performance of electrical products or disrupt essential communications.

L. DDC peer-to-peer controllers shall be compliant with the European EMC Directive, Standards EN 50081-2 and EN 50082-2, at the Industrial Levels. Additionally the equipment shall be compliant with the European LVD Directive and bear the CE mark in order to show compliance to both directives.

M. All electronic equipment shall conform to the requirements of FCC Regulation, Part 15, Governing Radio Frequency Electromagnetic Interference and be so labeled.

N. All wireless devices shall conform to:
   1. The requirements of Title 47 of the Code of Federal Regulations, FCC Part 15, governing radio frequency intentional radiating devices and be issued a FCC user identification and be so labeled. CE Directive 1999/5/EC (Radio Equipment and Telecommunications Terminal Equipment and the Mutual Recognition of their Conformity)

O. The manufacturer of the building automation system shall provide documentation supporting compliance with ISO-9002 (Model for Quality Assurance in Production, Installation, and Servicing) and ISO-140001 (The application of well-accepted business management principles to the environment). The intent of this specification requirement is to ensure that the products from the manufacturer are delivered through a Quality System and Framework that will assure consistency in the products delivered for this project.

P. This system shall have a documented history of compatibility by design for a minimum of 15 years. Future compatibility shall be supported for no less than 10 years. Compatibility shall be defined as the ability to upgrade existing field panels to current level of technology, and extend new field panels on a previously installed network. Compatibility shall be defined as the ability for any existing field panel microprocessor to be connected and directly communicate with new field panels without bridges, routers or protocol converters.

1.8 SYSTEM PERFORMANCE

A. Performance Standards. System shall conform to the following minimum standards over network connections. Systems shall be tested using manufacturer's recommended hardware and software for operator workstation (server and browser for web-based systems).
   1. Graphic Display. A graphic with 20 dynamic points shall display with current data within 10 sec.
   2. Graphic Refresh. A graphic with 20 dynamic points shall update with current data within 8 sec. and shall automatically refresh every 15 sec.
   3. Multiple Alarm Annunciations. Each workstation on the network shall receive alarms within 5 sec of other workstations.

1.9 DELIVERY, STORAGE AND HANDLING

A. Provide factory-shipping cartons for each piece of equipment and control device. Maintain cartons through shipping, storage, and handling as required to prevent equipment damage. Store equipment and materials inside and protected from weather.

1.10 SPECIFICATION NOMENCLATURE

A. Acronyms used in this specification are as follows:
   1. BASBuilding Automation System
   2. EMCSEnergy Management and Control System
   3. DDCDirect Digital Control
   4. NACNetwork Area Controller
   5. IBCInteroperable BACNet Controller
   6. ASCApplication Specific Controller
   7. FUIFull User Interface
   8. BUIBrowser User Interface
   9. POTPortable Operator's Terminal
   10. PMIPower Measurement Interface
   11. DDCDirect Digital Controls
   12. LANLocal Area Network
   13. WANWide Area Network
   14. OOTObject Oriented Technology
   15. PICSProduct Interoperability Compliance Statement

PART 2 PRODUCTS

2.1 ACCEPTABLE MANUFACTURERS

A. Siemens (basis of design).

B. No other manufacturers shall be permitted.

2.2 MATERIALS

A. All products used in this project installation shall be new and currently manufactured and shall have been applied in similar installations. Do not use this installation as a product test site unless explicitly approved in writing by Owner or Owner's representative. Spare parts shall be available for at least five years after completion of this contract.

2.3 COMMUNICATIONS

A. The design of the BMS shall support networking of operator workstations and Building Controllers. The network architecture shall consist of two levels, an Ethernet based primary network for all operator workstations, servers, and primary DDC controllers along with secondary Floor Level Networks (FLN) for terminal equipment application specific controllers.

B. Access to system data shall not be restricted by the hardware configuration of the building management system. The hardware configuration of the BMS network shall be totally transparent to the user when accessing data or developing control programs.

C. Operator Workstation Communication:
   1. Provide graphics and programming on the existing operator workstation under this contract.
   2. The network shall allow concurrent use of multiple BMS software site licenses.

D. Management Level Network Communication (MLN)
   1. All PCs shall simultaneously direct connect to the Ethernet Management Level Network without the use of an interposing device.
   2. Operator Workstation shall be capable of simultaneous direct connection and communication with BACnet/IP, OPC and TCP/IP corporate level networks without the use of interposing devices.
   3. The Primary Network shall not impose a maximum constraint on the number of operator workstations.

4. Any controller residing on the primary network shall connect to Ethernet network without the use of a PC or a gateway with a hard drive.
5. Any PC on the Primary Network shall have transparent communication with controllers on the building level networks connected via Ethernet.
6. Any break in Ethernet communication from the PC to the controllers on the Primary Network shall result in a notification at the PC.
7. The standard client and server workstations on the Primary Network shall reside on industry standard Ethernet utilizing standard TCP/IP, IEEE 802.3.
8. System software applications will run as a service to allow communication with Primary Network Controllers without the need for user log in. Closing the application or logging off shall not prevent the processing of alarms, network status, panel failures, and trend information.
9. Any break in Ethernet communication between the standard client and server workstations on the Primary Network shall result in a notification at each workstation.
10. Access to the system database shall be available from any standard client workstation on the Primary Network.
11. Client access to client-server workstation configurations over the Internet network shall be available via Web browser interface.
12. Thin Client access to client-server workstation configurations via Windows Terminal Services shall provide multiple, independent sessions of the workstations software. Terminal Services clients shall have full functionality, without the need to install the workstation software on the local hard drive.

E. Primary Network - Panel to Panel Communication:
1. All Building Controllers shall directly reside on the primary Ethernet network such that communications may be executed directly between Building Controllers, directly between server and Building Controllers on a peer-to-peer basis.
2. Systems that operate via polled response or other types of protocols that rely on a central processor, file server, or similar device to manage panel-to-panel or device-to-device communications shall not be acceptable.
3. All operator interfaces shall have the ability to access all point status and application report data or execute control functions for any and all other devices. Access to data shall be based upon logical identification of building equipment. No hardware or software limits shall be imposed on the number of devices with global access to the network data.
4. The primary network shall use TCP/IP over Ethernet. All devices must:
   a. Auto-sense 10/100 Mbps networks.
   b. Receive an IP Address from a Dynamic Host Configuration Protocol (DHCP) Server or be configured with a Fixed IP Address.
   c. Resolve Name to IP Addresses for devices using a Domain Name Service (DNS) Server on the Ethernet network.
   d. Allow MMI access to an individual Primary Network Controller using industry standard Telnet software to view and edit entire Primary Network.
5. The primary network shall provide the following minimum performance:
   a. Provide high-speed data transfer rates for alarm reporting, report generation from multiple controllers and upload/download efficiency between network devices. System performance shall insure that an alarm occurring at any Building Controller is displayed at any PC workstations, all Building controllers, and other alarm printers within 15 seconds.
   b. Message and alarm buffering to prevent information from being lost.
   c. Error detection, correction, and re-transmission to guarantee data integrity.
   d. Synchronization of real-time clocks between Building Controllers, including automatic daylight savings time corrections.

e. The primary network shall allow the Building Controllers to access any data from, or send control commands and alarm reports directly to, any other Building Controller or combination of controllers on the network without dependence upon a central or intermediate processing device. Building Controllers shall send alarm reports to multiple operator workstations without dependence upon a central or intermediate processing device. The network shall also allow any Building controller to access, edit, modify, add, delete, back up, restore all system point database and all programs.
f. The primary network shall allow the Building Controllers to assign password access and control priorities to each point individually. The logon password (at any PC workstation or portable operator terminal) shall enable the operator to monitor, adjust and control only the points that the operator is authorized for. All other points shall not be displayed at the PC workstation or portable terminal. (e.g. all base building and all tenant points shall be accessible to any base building operators, but only certain base building and tenant points shall be accessible to tenant building operators). Passwords and priorities for every point shall be fully programmable and adjustable.
g. Devices containing custom programming must reside on the Primary Network

F. Secondary Network - Application Specific Controller Communication:
1. Communication over the secondary network shall be the manufacturer's standard protocol.
2. This level communication shall support a family of application specific controllers for terminal equipment.
3. The Application Specific Controllers shall communicate bi-directionally with the primary network through Building Controllers for transmission of global data.
4. A maximum of 30 terminal equipment controllers may be configured on individual secondary network trunks to insure adequate global data and alarm response times.
5. Terminal Services Operator Interface
a. Client access to client-server workstation configurations over low-bandwidth network technologies shall be available optionally via Windows Terminal Services or Web browser interface. Remote client access via Windows Terminal Services shall provide multiple, independent sessions of the workstations software - Terminal Services clients shall have workstation software access, without the need to install the workstation software on the local hard drive]

2.4 APPLICATION SPECIFIC CONTROLLERS

A. Each Application Level Control Panel shall operate as a stand-alone controller capable of performing its user selectable control routines independently of any other controller in the system. Each application specific controller shall be a microprocessor-based, multi-tasking, real-time digital control processor.

B. Basis of design is Siemens BTEC controller.

C. Provide an Application Specific Control Panel for each of the following types of equipment (if applicable):
1. Cabinet Unit Heaters

D. Each Application Specific Controller shall, at a minimum, be provided with:
1. Appropriate NEMA rated enclosure
2. Floor Level network communications ability
3. Power supplies as required for all associated modules, sensors, actuators, etc.
4. Software as required for all sequences of operation, logic sequences and energy management routines.
5. A portable operator terminal connection port

6. Auxiliary enclosure for analog output transducers, isolation relays, etc. Auxiliary enclosure shall be part of primary enclosure or mounted adjacent primary enclosure
7. Each controller measuring air volume shall include provisions for manual and automatic calibration of the differential pressure transducer in order to maintain stable control and insuring against drift over time
8. Each controller measuring air volume shall include a differential pressure transducer
9. Approvals and standards: UL916; CE; FCC E. Each Application Specific Controller shall continuously perform self-diagnostics on all hardware and secondary network communications. The Application Specific Controller shall provide both local and remote annunciation of any detected component failures, low battery conditions, or repeated failure to establish communication to the system.

E. Provide each Application Specific Controller with sufficient memory to accommodate point databases, operating programs, local alarming and local trending. All databases and programs shall be stored in non-volatile EEPROM, EPROM and PROM. The controllers shall be able to return to full normal operation without user intervention after a power failure of unlimited duration. Provide uninterruptible power supplies (UPSs) of sufficient capacities for all terminal controllers that do not meet this protection requirement. Operating programs shall be field-selectable for specific applications. In addition, specific applications may be modified to meet the user's exact control strategy requirements, allowing for additional system flexibility. Controllers that require factory changes of all applications are not acceptable.

F. The Application Specific Controller shall be powered from a 24 VAC source provided by this contractor and shall function normally under an operating range of 18 to 28 VAC (-25% to +17%), allowing for power source fluctuations and voltage drops. Install plenum data line and sensor cable in accordance with local code and NEC. The controllers shall also function normally under ambient conditions of 32 to 122 F (0 to 50 C) and 10% to 95%RH (non-condensing). Provide each controller with a suitable cover or enclosure to protect the intelligence board assembly.

2.5 INPUT OUTPUT INTERFACE

A. Hardwired inputs and outputs may tie into the system through building or application specific controllers.

B. All input points and output points shall be protected such that shorting of the point to itself, to another point, or to ground will cause no damage to the controller. All input and output points shall be protected from voltage up to 24 V of any duration, such that contact with this voltage will cause no damage to the controller.

C. Binary inputs shall allow the monitoring of On/Off signals from remote devices. The binary inputs shall provide a wetting current of at least 12 mA to be compatible with commonly available control devices and shall be protected against the effects of contact bounce and noise. Binary inputs shall sense “dry contact” closure without external power (other than that provided by the controller) being applied.

D. Pulse accumulation input objects. This type of object shall conform to all the requirements of binary input objects and also accept up to 10 pulses per second for pulse accumulation.

E. Analog inputs shall allow the monitoring of low-voltage (0 to 10 VDC), current (4 to 20 mA), or resistance signals (thermistor, RTD). Analog inputs shall be compatible with-and field configurable to- commonly available sensing devices.

F. Binary outputs shall provide for On/Off operation or a pulsed low-voltage signal for pulse width modulation control. Binary outputs on building and custom application controllers shall have three-position (On/Off/Auto) override switches and status lights. Outputs shall be selectable for either normally open or normally closed operation.

G. Analog outputs shall provide a modulating signal for the control of end devices. Outputs shall provide either a 0 to 10 VDC, 4 to 20 mA or 0-20 PSI signal as required to provide proper control of the output device. Analog outputs on building or custom application controllers shall have status lights and a two-position (AUTO/MANUAL) switch and manually adjustable potentiometer for manual override. Analog outputs shall not exhibit a drift of greater than 0.4% of range per year.

H. Tri-State Outputs. Provide tri-state outputs (two coordinated binary outputs) for control of three-point floating type electronic actuators without feedback. Use of three-point floating devices shall be limited to zone control and terminal unit control applications (VAV terminal units, duct-mounted heating coils, zone dampers, radiation, etc.). Control algorithms shall run the zone actuator to one end of its stroke once every 24 hours for verification of operator tracking.

I. System Object Capacity. The system size shall be expandable to at least twice the number of input/ output objects required for this project. Additional controllers (along with associated devices and wiring) shall be all that is necessary to achieve this capacity requirement. The operator interfaces installed for this project shall not require any hardware additions or software revisions in order to expand the system.

2.6 POWER SUPPLIES AND LINE FILTERING

A. Control transformers shall be UL listed. Furnish Class 2 current-limiting type or furnish over-current protection in both primary and secondary circuits for Class 2 service in accordance with NEC requirements. Limit connected loads to 80% of rated capacity.

B. DC power supply output shall match output current and voltage requirements. Unit shall be full-wave rectifier type with output ripple of 5.0 mV maximum peak-to-peak. Regulation shall be 1.0% line and load combined, with 100-microsecond response time for 50% load changes. Unit shall have built-in over-voltage and over-current protection and shall be able to withstand a 150% current overload for at least three seconds without trip-out or failure.
   1. Unit shall operate between 0°C and 50°C (32°F and 120°F). EM/RF shall meet FCC Class B and VDE 0871 for Class B and MILSTD 810C for shock and vibration.
   2. Line voltage units shall be UL recognized and CSA approved.

C. Power line filtering.
   1. Provide transient voltage and surge suppression for all workstations and controllers either internally or as an external component. Surge protection shall have the following at a minimum:
      a. Dielectric strength of 1000 volts minimum
      b. Response time of 10 nanoseconds or less
      c. Transverse mode noise attenuation of 65 dB or greater
      d. Common mode noise attenuation of 150 dB or better at 40 Hz to 100 Hz.

2.7 AUXILLIARY CONTROL DEVICES

A. General
   1. Specified in this section are the following hard wired input/output devices connected to the existing Building Controllers.
      a. Temperature Sensors
      b. Relays
      c. Override Timers
      d. Current Transformers
      e. Voltage Transformers
      f. Local Control panels
      g. Local User Display

B. Temperature sensors .

1. Provide the following instrumentation as required by the monitoring, control and optimization functions. All temperature sensor shall use platinum RTD elements only, nickel or silicon are not acceptable. All control signals shall be via a 4-20 mA loop.
2. Room Temperature:
   a. Temperature monitoring range+40/+90 F (+40/120 F for high temp alarms)
   b. Output signal4-20 mA
   c. Installation adjustmentsnone required
   d. Calibration adjustmentszero & span
   e. Factory calibration point70 deg F
   f. Accuracy at calibration point+0.5 F

C. Relays
1. Control relays shall be UL listed plug-in type with dust cover and LED “energized” indicator. Contact rating, configuration, and coil voltage shall be suitable for application.
2. Time delay relays shall be UL listed solid-state plug-in type with adjustable time delay. Delay shall be adjustable ±200% (minimum) from set point shown on plans. Contact rating, configuration, and coil voltage shall be suitable for application. Provide NEMA 1 enclosure when not installed in local control panel.

D. Current transformers
1. AC current transformers shall be UL/CSA Recognized and completely encased (except for terminals) in approved plastic material.
2. Transformers shall be available in various current ratios and shall be selected for ±1% accuracy at 5 A full-scale output.
3. Transformers shall be fixed-core or split-core type for installation on new or existing wiring, respectively.

E. Voltage transmitters
1. AC voltage transmitters shall be self-powered single-loop (two-wire) type, 4 to 20 mA output with zero and span adjustment.
2. 2 Ranges shall include 100 to 130 VAC, 200 to 250 VAC, 250 to 330 VAC, and 400 to 600 VAC full-scale, adjustable, with ±1% full-scale accuracy with 500 ohm maximum burden.
3. Transmitters shall be UL/CSA Recognized at 600 VAC rating and meet or exceed ANSI/ISA S50.1 requirements.

F. Voltage transformers
1. AC voltage transformers shall be UL/CSA Recognized, 600 VAC rated, complete with built-in fuse protection.
2. Transformers shall be suitable for ambient temperatures of 4°C to 55°C (40°F to 130°F) and shall provide ±0.5% accuracy at 24 VAC and a 5 VA load.
3. Windings (except for terminals) shall be completely enclosed with metal or plastic material.

G. Local control panels
1. All indoor control cabinets shall be fully enclosed NEMA 1 construction with (hinged door) key-lock latch and removable sub panels. A single key shall be common to all field panels and sub panels.
2. Interconnections between internal and face mounted devices shall be prewired with color-coded stranded conductors neatly installed in plastic troughs and/or tie-wrapped. Terminals for field connections shall be UL listed for 600 volt service, individually identified per control/ interlock drawings, with adequate clearance for field wiring. Control terminations for field connection shall be individually identified per control drawings.
3. Provide ON/OFF power switch with overcurrent protection for control power sources to each local panel.

H. Local user display

1. Where specified in the sequence of operation or points list, the controllers on the peer to peer building level network shall have a display and keypad for local interface. A keypad shall be provided for interrogating and commanding points in the controller.
2. The display shall use the same security password and access rights for points in the display as is used in the associated controller.
3. The LCD display shall be a minimum of a 2 line 40 character display.
4. The LCD display shall include the full point name, value (numeric, digital or state text), point priority and alarm status on one screen.
5. The LCD shall dynamically update the value, priority, and alarm status for the point being displayed.
6. The display shall be mounted either on the door of the enclosure or remote from the controller.

2.8 COMMUNICATION AND CONTROL WIRING

A. General:
   1. Provide copper wiring, plenum cable, and raceways as specified in the applicable sections of Division 26 unless otherwise noted herein.
      a. All insulated wire to be copper conductors, UL labeled for 90°C minimum service.
   2. Wire Sizing and Insulation
      a. Wiring shall comply with minimum wire size and insulation based on services listed below:
         1) ServiceMinimum Gage/TypeInsulation Class
         2) AC 24V Power 12 Ga Solid600 Volt
         3) DC 24V Power 10 Ga Solid600 Volt
         4) Class 1 14 Ga Stranded600 Volt
         5) Class 2 18 Ga Stranded300 Volt
         6) Class 3 18 Ga Stranded300 Volt
      b. Provide plenum-rated cable when open cable is permitted in supply or return air plenum where allowed per execution specifications.
   3. Control Wiring:
      a. Digital Input/Output wiring shall use Class 2 twisted pair, insulated.
      b. Analog inputs shall use Class 2 twisted shielded pair, insulated and jacketed and require a grounded shield.
      c. Actuators with tri-state control shall use 3 conductor with same characteristics
   4. Communication Wiring
      a. Ethernet Cable shall be minimum CAT5
      b. Secondary level network shall be 24 gage, TSP, low capacitance cable

2.9 FIELD DEVICES

A. Provide instrumentation as required for monitoring, control or optimization functions.

B. Current Sensor for Fan or Pump:
   1. Unit Status: Solid-State Status Sensor.
      a. Output rating: 0.2 A at 30 Vdc.
      b. Input rating: 0 to 135 ampere continuous.
      c. Sensor supply current induced from monitored conductor. Minimum conductor current required 1A. Maximum rating 135.
      d. Isolation: 600 Vac RMS.
      e. Trip set-point: Adjustable to +1 percent.
      f. Temperature range: -15 degrees C to 85 degrees C.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify existing conditions before starting work.

B. Verify that conditioned power supply is available to the control units and to the operator work station. Verify that field end devices, wiring, and pneumatic tubing is installed prior to installation proceeding.

3.2 INSTALLATION

A. Install control units and other hardware in position on permanent walls where not subject to excessive vibration.

B. Install software in control units and in operator work station. Implement all features of programs to specified requirements and appropriate to sequence of operation.

C. Install all thermostats, sensors and other wall mounted end device input control equipment at elevations in conformance with ADA requirements.

3.3 WIRING

A. All control and interlock wiring shall comply with national and local electrical codes and Division 26 of this specification. Where the requirements of this section differ from those in Division 26, the requirements of this section shall take precedence.

B. All NEC Class 1 (line voltage) wiring shall be UL Listed in approved conduit according to NEC and Division 16 requirements.

C. All low-voltage wiring shall meet NEC Class 2 requirements. (Low-voltage power circuits shall be sub fused when required to meet Class 2 current limit.)

D. Where NEC Class 2 (current-limited) wires are in concealed and accessible locations, including ceiling return air plenums, approved cables not in conduit may be used provided that cables are UL Listed for the intended application. For example, cables used in ceiling plenums shall be UL Listed specifically for that purpose.

E. All wiring in mechanical, electrical, or service rooms-or where subject to mechanical damage- shall be installed in conduit.

F. Do not install Class 2 wiring in conduit containing Class 1 wiring. Boxes and panels containing high voltage wiring and equipment may not be used for low-voltage wiring except for the purpose of interfacing the two (e.g., relays and transformers).

G. Do not install wiring in conduit containing tubing.

H. Where plenum rated cable is run exposed, wiring is to be run parallel along a surface or perpendicular to it and neatly tied at 3 m (10 ft) intervals.

I. Where plenum rated cable is used without conduit, it shall be supported from or anchored to structural members. Cables shall not be supported by or anchored to ductwork, electrical conduits, piping, or ceiling suspension systems.

J. All wire-to-device connections shall be made at a terminal block or wire nut. All wire-to-wire connections shall be at a terminal strip or wire nut.

K. All wiring within enclosures shall be neatly bundled and anchored to permit access and prevent restriction to devices and terminals.

L. Maximum allowable voltage for control wiring shall be 120 V. If only higher voltages are available, the contractor shall provide step-down transformers or interposing relays.

M. All plenum rated wiring shall be installed as continuous lengths, with no splices permitted between termination points

N. All wiring in conduit shall be installed as continuous lengths, with no splices permitted between termination points or junction boxes.

O. Maintain fire rating at all penetrations. Install plenum wiring in sleeves where it passes through walls and floors.

P. Size and type of conduit and size and type of wire shall be the responsibility of the contractor, in keeping with the manufacturer's recommendations and NEC requirements, except as noted elsewhere.

Q. Include one pull string in each conduit 3/4 in. or larger.

R. Control and status relays are to be located in designated enclosures only. These enclosures can include packaged equipment control panel enclosures unless they also contain Class 1 starters.

S. Conceal all conduit, except within mechanical, electrical, or service rooms. Install conduit to maintain a minimum clearance of 15 cm (6 in.) from high-temperature equipment (e.g., steam pipes or flues).

T. Secure conduit with conduit clamps fastened to the structure and spaced according to code requirements. Conduit and pull boxes may not be hung on flexible duct strap or tie rods. Conduits may not be run on or attached to ductwork.

U. Adhere to this specification's Division 16 requirements where conduit crosses building expansion joints.

V. The Contractor shall terminate all control and/or interlock wiring and shall maintain updated (as-built) wiring diagrams with terminations identified at the job site.

W. Flexible metal conduits and liquid-tight, flexible metal conduits shall not exceed 1 m (3 ft) in length and shall be supported at each end. Flexible metal conduit less than ½ in. electrical trade size shall not be used. In areas exposed to moisture, including chiller and boiler rooms, liquid-tight, flexible metal conduits shall be used.

X. Conduit must be adequately supported, properly reamed at both ends, and left clean and free of obstructions. Conduit sections shall be joined with couplings (according to code). Terminations must be made with fittings at boxes, and ends not terminating in boxes shall have bushings installed.

3.4 COMMUNICATION WIRING

A. The contractor shall adhere to the items listed in the “Wiring” article in Part 3 of the specification.

B. All cabling shall be installed in a neat and workmanlike manner. Follow manufacturer's installation recommendations for all communication cabling.

C. Do not install communication wiring in raceway and enclosures containing Class 1 or other Class 2 wiring.

D. Maximum pulling, tension, and bend radius for cable installation, as specified by the cable manufacturer, shall not be exceeded during installation.

E. Contractor shall verify the integrity of the entire network following the cable installation. Use appropriate test measures for each particular cable.

F. When a cable enters or exits a building, a lightning arrestor must be installed between the lines and ground. The lighting arrestor shall be installed according to the manufacturer's instructions.

G. All runs of communication wiring shall be unspliced length when that length is commercially available.

H. All communication wiring shall be labeled to indicate origination and destination data.

I. Grounding of coaxial cable shall be in accordance with NEC regulations article on “Communications Circuits, Cable, and Protector Grounding.”

3.5 INSTALLATION OF SENSORS

A. General:
   1. Install sensors in accordance with the manufacturer's recommendations.
   2. Mount sensors rigidly and adequately for the environment within which the sensor operates.
   3. Room temperature sensors shall be installed on concealed junction boxes properly supported by the wall framing.
   4. All wires attached to sensors shall be air sealed in their raceways or in the wall to stop air transmitted from other areas affecting sensor readings.
   5. Sensors used in mixing plenums and hot and cold decks shall be of the averaging type.
   6. Low-limit sensors used in mixing plenums shall be installed in a serpentine manner horizontally across the full face of the coil.
   7. All pipe-mounted temperature sensors shall be installed in wells. Install all liquid temperature sensors with heat-conducting fluid in thermal wells.
   8. Install outdoor air temperature sensors on north wall, complete with sun shield at designated location.

B. Room Instrument Mounting
   1. Room instruments, including but not limited to wall mounted thermostats and sensors located in occupied spaces shall be mounted 48 inches above the finished floor unless otherwise shown.

3.6 WARNING LABELS AND IDENTIFICATION TAGS

A. Permanent warning labels shall be affixed to all equipment that can be automatically started by the DDC system.
   1. Labels shall use white lettering (12-point type or larger) on a red background.
   2. Warning labels shall read as follows: “C A U T I O N This equipment is operating under automatic control and may start or stop at any time without warning. Switch disconnect to “Off” position before servicing.”

B. Permanent warning labels shall be affixed to all motor starters and all control panels that are connected to multiple power sources utilizing separate disconnects.
   1. Labels shall use white lettering (12-point type or larger) on a red background.
   2. Warning labels shall read as follows: “C A U T I O N This equipment is fed from more than one power source with separate disconnects. Disconnect all power sources before servicing.”

C. Equipment and Device labeling:
   1. Labels and tags shall be keyed to the unique identifiers shown on the As-Built drawings.
   2. All Enclosures and DDC Hardware shall be labeled.
   3. All sensors and actuators not in occupied areas shall be tagged.
   4. Airflow measurement arrays shall be tagged to show flow rate range for signal output range, duct size, and pitot tube AFMS flow coefficient.
   5. Duct static pressure taps shall be tagged at the location of the pressure tap.
   6. Tags shall be plastic or metal and shall be mechanically attached directly to each device or attached by a metal chain or wire.
   7. Labels exterior to protective enclosures shall be engraved plastic and mechanically attached to the enclosure or DDC Hardware.
   8. Labels inside protective enclosures may be attached using adhesive, but shall not be hand written.

9. Identify all other control components with permanent labels. All plug-in components shall be labeled such that removal of the component does not remove the label.
10. Identify room sensors relating to terminal box or valves with nameplates.
11. Manufacturers' nameplates and UL or CSA labels are to be visible and legible after equipment is installed.

D. Identification of Tubing and Wiring
1. All wiring and cabling including that within factory-fabricated panels shall be labeled at each end within 5 cm (2 in.) of termination with the DDC address or termination number.
2. Permanently label or code each point of field terminal strips to show the instrument or item served.
3. All pneumatic tubing shall be labeled at each end within 5 cm (2 in.) of termination with a descriptive identifier.

3.7 IDENTIFICATION OF HARDWARE AND WIRING

A. All wiring and cabling, including that within factory-fabricated panels shall be labeled at each end within 5 cm (2 in.) of termination with the DDC address or termination number.

B. Permanently label or code each point of field terminal strips to show the instrument or item served.

C. Identify control panels with minimum 1 cm (½ in.) letters on laminated plastic nameplates.

D. Identify all other control components with permanent labels. All plug-in components shall be labeled such that removal of the component does not remove the label.

E. Identify room sensors relating to terminal box or valves with nameplates.

F. Manufacturers' nameplates and UL or CSA labels are to be visible and legible after equipment is installed.

G. Identifiers shall match record documents.

3.8 PROGRAMMING

A. Programming
1. Provide sufficient internal memory for the specified sequences of operation and trend logging. There shall be a minimum of 25% of available memory free within the primary controller for future use.
2. Point Naming: System point names shall be modular in design, allowing easy operator interface without the use of a written point index. Point Naming standard shall be agreed upon between owner and BAS contractor. Refer to Submittals section in the General Section.
3. Software Programming
a. Provide programming for the system and adhere to the sequences of operation provided. The contractor also shall provide all other system programming necessary for the operation of the system, but not specified in this document. Imbed into the control program sufficient comment statements to clearly describe each section of the program. The comment statements shall reflect the language used in the sequences of operation and be of different font and color in text editor. Use the appropriate technique based on one of the following programming types:
1) Text-based:
(a) Must provide actions for all possible situations
(b) Must be modular and structured
(c) Must be commented
(d) Must provide line by line programming and compilation wizard to allow for ease of editing.

2) Graphic-based:
   (a) Must provide actions for all possible situations
   (b) Must provide programming and compilation wizard to allow for ease of editing.
   (c) Must be documented

4. Operator Interface
   a. Show terminal equipment information on a “graphic” summary table. Provide dynamic information for each point shown.
   b. The contractor shall provide all the labor necessary to install, initialize, start up, and troubleshoot all operator interface software and its functions as described in this section. This includes any operating system software, the operator interface database, and any third-party software installation and integration required for successful operation of the operator interface.
   c. Contractor shall provide necessary programming to create all reports refered to in Part 2 Operator Interface Software

3.9 CLEANING

A. The contractor shall clean up all debris resulting from their activities daily. The contractor shall remove all cartons, containers, crates, etc., under his/her control as soon as their contents have been removed. Waste shall be collected and placed in a designated location.

B. At the completion of work in any area, the contractor shall clean all work, equipment, etc., keeping it free from dust, dirt, and debris, etc.

C. At the completion of work, all equipment furnished under this section shall be checked for paint damage, and any factory-finished paint that has been damaged shall be repaired to match the adjacent areas. Any cabinet or enclosure that has been deformed shall be replaced with new material and repainted to match the adjacent areas.

3.10 MANUFACTURER'S FIELD SERVICES

A. Start and commission systems. Allow sufficient time for start-up and commissioning prior to placing control systems in permanent operation.

3.11 TEMPERATURE CONTROL SEQUENCES

A. Cabinet Unit Heaters: Cycle the cabinet unit heater fan on/off to maintain space temperature at space temperature setpoint. Provide current sensor on cabinet heater fan to monitor fan status. Building occupied space temperature setpoint shall be 70 degrees F. Building unoccupied space temperature setpoint shall be 65 degrees F for cabinet unit heaters.

END OF SECTION

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Hydronic system requirements.

B. Heating water piping, above grade.

C. Heating water and glycol piping, above grade.

D. Pipe hangers and supports.

E. Unions, flanges, mechanical couplings, and dielectric connections.

F. Valves:
   1. Ball Valves
   2. Calibrated Balance Valves

1.2 REFERENCE STANDARDS

A. ASME BPVC-IX - Boiler and Pressure Vessel Code, Section IX - Welding, Brazing, and Fusing Qualifications; 2015.

B. ASME B16.18 - Cast Copper Alloy Solder Joint Pressure Fittings; 2012.

C. ASME B16.22 - Wrought Copper and Copper Alloy Solder-Joint Pressure Fittings; 2013.

D. ASME B31.9 - Building Services Piping; 2014.

E. ASME B31.9 - Building Services Piping; The American Society of Mechanical Engineers; 2008.

F. ASTM B32 - Standard Specification for Solder Metal; 2008 (Reapproved 2014).

G. ASTM B88 - Standard Specification for Seamless Copper Water Tube; 2014.

H. ASTM B88M - Standard Specification for Seamless Copper Water Tube (Metric); 2013.

I. ASTM F708 - Standard Practice for Design and Installation of Rigid Pipe Hangers; 1992 (Reapproved 2008).

J. AWS A5.8M/A5.8 - Specification for Filler Metals for Brazing and Braze Welding; 2011-AMD 1.

K. MSS SP-58 - Pipe Hangers and Supports - Materials, Design, Manufacture, Selection, Application, and Installation; 2009.

1.3 SUBMITTALS

A. Piping Schedule: Provide schedule of piping applications and materials, indicating piping and fittings.

B. Piping Shop Drawings: Provide drawings of piping installation, indicating dimensioned locations, equipment, critical dimensions, elevations, sizes, systems, and valve locations.

C. Product Data:
   1. Include data on pipe materials, pipe fittings, valves, and accessories.
   2. Provide manufacturers catalog information.
   3. Indicate valve data and ratings.

D. Manufacturer's Installation Instructions: Indicate hanging and support methods, joining procedures.

1.4 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing products of the type specified in this section, with minimum three years of documented experience.

B. Installer Qualifications: Company specializing in performing work of the type specified in this section, with minimum three years of experience.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Accept valves on site in shipping containers with labeling in place. Inspect for damage.

B. Provide temporary protective coating on cast iron and steel valves.

C. Provide temporary end caps and closures on piping and fittings. Maintain in place until installation.

D. Protect piping systems from entry of foreign materials by temporary covers, completing sections of the work, and isolating parts of completed system.

PART 2 PRODUCTS

2.1 HYDRONIC SYSTEM REQUIREMENTS

A. Comply with ASME B31.9 and applicable federal, state, and local regulations.

B. Piping: Provide piping, fittings, hangers, and supports as required, as indicated, and as follows:
   1. Use non-conducting dielectric connections whenever jointing dissimilar metals.
   2. Grooved mechanical joints are not permitted in any location.
   3. Provide pipe hangers and supports in accordance with ASME B31.9 or MSS SP-58 unless indicated otherwise.

C. Pipe-to-Valve and Pipe-to-Equipment Connections: Use unions to allow disconnection of components for servicing; do not use direct welded, soldered, or threaded connections.

D. Valves: Provide valves where indicated:
   1. Provide drain valves where indicated, and if not indicated provide at least at main and main branch shut-offs locations, low points of piping, bases of vertical risers, and at equipment. Use 3/4 inch ball valves with cap.
   2. For throttling, bypass, or manual flow control services, use ball valves.
   3. For shut-off and to isolate parts of systems or vertical risers, use ball valves.

2.2 HEATING WATER AND GLYCOL PIPING

A. Copper Tube for piping sizes 3" and below: ASTM B88 (ASTM B88M), Type L (B), drawn, using one of the following joint types:
   1. Solder Joints: ASME B16.18 cast brass/bronze or ASME B16.22 solder wrought copper fittings.
      a. Solder: ASTM B32 lead-free solder, HB alloy (95-5 tin-antimony) or tin and silver.
      b. Braze: AWS A5.8M/A5.8 BCuP copper/silver alloy.
   2. Hydraulic Press Fitting for Copper Tubing.
      a. Acceptable Fittings:
         1) ProPress by Viega, 301 N. Main, Wichita, KS 67202, (877) 843-4262, www.viega.com. NO SUBSTITUTIONS SHALL BE PERMITTED.
      b. Operating Conditions:
         1) Maximum Operating Pressure: 200 psi.
         2) Operating Temperature Range: 0-250 degrees F.
         3) Maximum Test Pressure: 600 psi.
         4) Maximum Vacuum: 29.2 inches hg @ 68 degrees F.
      c. Features:
         1) Fittings: Copper and copper alloy conforming to material requirements of ASME B16.18 or ASME B16.22.

(a) Stainless Steel Grip Ring: Adds strength to the joint without collapsing the interior passageway.

2) No flame for soldering required for installation of fittings and valves.
3) Unpressed connections identified during pressure testing when water flows past sealing element.
4) Sealing Elements: Factory installed, EPDM.
5) Fittings that have been pressed can be rotated. If rotated more than 5 degrees, the fitting must be repressed to restore its resistance to rotational movement.
6) Extended fitting end lead allows for twice the retention grip surface, and assists with proper tube alignment.
7) Soldered adapter fittings are not allowed.

3. Tee Connections: Mechanically extracted collars with notched and dimpled branch tube.

2.3 PIPE HANGERS AND SUPPORTS

A. Provide hangers and supports that comply with MSS SP-58.
   1. If type of hanger or support for a particular situation is not indicated, select appropriate type using MSS SP-58 recommendations.

B. Hangers for Pipe Sizes 1/2 to 1-1/2 Inches: Malleable iron, adjustable swivel, split ring.

C. Multiple or Trapeze Hangers: Steel channels with welded spacers and hanger rods.

D. Wall Support for Pipe Sizes to 3 Inches: Cast iron hook.

E. Vertical Support: Steel riser clamp.

F. Floor Support for Hot Pipe Sizes to 4 Inches: Cast iron adjustable pipe saddle, lock nut, nipple, floor flange, and concrete pier or steel support.

G. Copper Pipe Support: Carbon steel ring, adjustable, copper plated.

H. Hanger Rods: Mild steel threaded both ends, threaded one end, or continuous threaded.

I. Inserts: Malleable iron case of galvanized steel shell and expander plug for threaded connection with lateral adjustment, top slot for reinforcing rods, lugs for attaching to forms; size inserts to suit threaded hanger rods.

2.4 UNIONS, FLANGES, MECHANICAL COUPLINGS, AND DIELECTRIC CONNECTIONS

A. Unions for Pipe 2 Inches and Less:
   1. Copper Pipe: Bronze, soldered joints.

B. Dielectric Connections:
   1. Flanges:
      a. Dielectric flanges with same pressure ratings as standard flanges.
      b. Water impervious insulation barrier capable of limiting galvanic current to 1 percent of short circuit current in a corresponding bimetallic joint.
      c. Dry insulation barrier able to withstand 600-volt breakdown test.
      d. Construct of galvanized steel with threaded end connections to match connecting piping.
      e. Suitable for the required operating pressures and temperatures.

2.5 BALL VALVES

A. 3-inch and smaller: 2-piece, full port:
   1. Class: 150 psi saturated steam, 600 psi wog.
   2. Body: ASTM B-584 Alloy 844 bronze.
   3. Body End Piece: ASTM B-584 Alloy 844 bronze.
   4. Ball: ASTM B-584 Alloy 844 bronze with hard chrome plate.

5. Seat Ring: Reinforced TFE.
6. Threaded Packing Gland: ASTM B-16 Alloy 360 brass.
7. Stem: 316 stainless steel.
8. Ends: Threaded or Press Fittings.

B. Acceptable Manufacturers:
1. Nibco.
2. Apollo.
3. Viega.

2.6 CALIBRATED BALANCE VALVES

A. Size 1/2 inch to 3 inch:
1. Bronze body with brass ball construction with glass and carbon filled TFE seat rings. Valves shall have differential pressure read-out ports across valve seat area. Read-out ports shall be fitted with internal EPT insert and check valve. Valve bodies shall have 1/4 inch NPT tapped drain/purge port. Valves shall have memory stop feature to allow valve to be closed for service and then reopened to set point without disturbing balance position. All valves shall have calibrated nameplate to assure specific valve setting. Valves shall be leak-tight at full rated working pressure.
2. Design Pressure/Temperature:
a. 1/2" to 3" NPT connections: 300 psi at 250 degrees F.
b. 1/2" to 2" sweat connections: 200 psi at 250 degrees F.

B. Design Pressure/Temperature: 175 psi at 250 degrees F.

C. Acceptable Manufacturers:
1. Oventrop Corp.
2. Bell and Gossett
3. Flow Design, Inc.

PART 3 EXECUTION

3.1 PREPARATION

A. Ream pipe and tube ends. Remove burrs. Bevel plain end ferrous pipe.

B. Remove scale and dirt on inside and outside before assembly.

C. Prepare piping connections to equipment using jointing system specified.

D. Keep open ends of pipe free from scale and dirt. Protect open ends with temporary plugs or caps.

E. After completion, fill, clean, and treat systems. Refer to Section 232500 for additional requirements.

3.2 CALIBRATED BALANCE VALVE SELECTION

A. The contractor shall be responsible for selection of the appropriate size of all calibrated balance valves. Select valve size such that optimal accurace is achieved when balanced to the flow rate as indicated on contract documents. Provide all required increasers and reducers to mate the installed calibrated balance valves to the adjacent piping and equpment.

B. Balance Valve Sizing:

GPM	Balance Valve Size
Up to 2.5	1/2"
2.6 to 4.5	3/4"
4.6 to 9.0	1"

9.1 to 22.0	1-1/4"
22.1 to 35.0	1-1/2"
35.1 to 78.0	2"
78.1 to 120.0	2-1/2"
120.1 to 200.0	3"
200.1 to 400.0	4"
400.1 to 500.0	5"

3.3 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Install heating water and glycol piping to ASME B31.9 requirements.

C. Route piping in orderly manner, parallel to building structure, and maintain gradient.

D. Install piping to conserve building space and to avoid interference with use of space.

E. Group piping whenever practical at common elevations.

F. Sleeve pipe passing through partitions, walls, and floors.

G. Slope piping and arrange to drain at low points.

H. Install piping to allow for expansion and contraction without stressing pipe, joints, or connected equipment. Refer to Section 230516.

I. Inserts:
   1. Provide inserts for placement in concrete formwork.
   2. Provide inserts for suspending hangers from reinforced concrete slabs and sides of reinforced concrete beams.
   3. Where concrete slabs form finished ceiling, locate inserts flush with slab surface.
   4. Where inserts are omitted, drill through concrete slab from below and provide through-bolt with recessed square steel plate and nut above slab.

J. Pipe Hangers and Supports:
   1. Install in accordance with ASME B31.9, ASTM F708, or MSS SP-58.
   2. Support horizontal piping as scheduled.
   3. Install hangers to provide minimum 1/2-inch space between finished covering and adjacent work.
   4. Place hangers within 12 inches of each horizontal elbow.
   5. Use hangers with 1-1/2 inches minimum vertical adjustment. Design hangers for pipe movement without disengagement of supported pipe.
   6. Support vertical piping at every floor. Support riser piping independently of connected horizontal piping.
   7. Where several pipes can be installed in parallel and at same elevation, provide multiple or trapeze hangers.
   8. Provide copper plated hangers and supports for copper piping.

K. Provide clearance in hangers and from structure and other equipment for installation of insulation and access to valves and fittings. Refer to Section 230719.

3.4 FIELD QUALITY CONTROL

A. Preparation for Testing: Prepare hydronic piping in accordance with ASME B 31.9 and as follows:
   1. Leave joints, including welds, uninsulated and exposed for examination during the test.
   2. Flush system with clean water. Clean strainers.

3. Isolate equipment that is not to be subjected to the test pressure from the piping. If a valve is used to isolate the equipment, its closure shall be capable of sealing against the test pressure without damage to the valve. Flanged joints at which blinds are inserted to isolate equipment need not be tested.

B. Testing: Test hydronic piping as follows:
1. Use ambient temperature water as the testing medium, except where there is a risk of damage due to freezing. Another liquid may be used if it is safe for the workmen and compatible with the piping system components.
2. Use vents installed at high points in the system to release trapped air while filling the system. Use drains installed at low points in the system for complete removal of the test liquid.
3. Examine system to ensure that equipment and components that cannot withstand test pressures are properly isolated. Examine test equipment to ensure tight connection and that low pressure filling lines have been disconnected.
4. Subject piping system to a hydrostatic test pressure which at every point in the system is not less than 1.5 times the system design pressure, but not less than 100 psi. The test pressure shall not exceed the maximum pressure for any vessel, pump, valve, or other component in the system under testing. Make a check to verify that the stress due to pressure at the bottom of vertical runs does not exceed either 90% of specified yield strength, or 1.7 times the "SE" value in Appendix A of ASME B31.9, Code for Pressure Piping, Building Service Piping.
5. After the hydrostatic test pressure has been applied for at least 15 minutes, examine piping, joints, and connections for leakage. Eliminate leaks by tightening, repairing, or replacing components as appropriate, and repeat hydrostatic test until there are no leaks.

3.5 VALVE ENDS SELECTION

A. Select valves with the following ends or types of pipe/tube connections:
1. Copper Tube Size, 3-inch and Smaller: Press or Threaded ends.

3.6 VALVE INSTALLATIONS

A. General Application: Use ball valves for shut-off duty; ball for throttling duty. Refer to piping system specification sections for specific valve applications and arrangements.

B. Locate valves for easy access and provide separate support where necessary.

C. Install valves and unions for each item of equipment arranged to allow equipment removal without system shutdown. Unions are not required on flanged devices.

D. Install valves in horizontal piping with stem at or above the center of the pipe.

E. Install valves in a position to allow full stem movement.

3.7 SOLDER CONNECTIONS

A. Cut tube square and to exact lengths.

B. Clean end of tube to depth of valve socket with steel wool, sand cloth, or a steel wire brush to a bright finish. Clean valve socket in the same manner.

C. Apply a proper soldering flux in an even coat to inside of valve socket and outside of tube.

D. Insert tube into valve socket, making sure the end rests against the shoulder inside valve. Rotate valve or tube slightly to ensure even distribution of the flux.

E. Apply heat evenly to outside of valve around joint until solder will melt upon contact. Feed solder until it completely fills the joint around the tube. Avoid hot spots or overheating valve. Once the solder starts cooling, remove excess amounts around the joint with a cloth or brush.

3.8 PRESS FITTING CONNECTIONS

A. Press connections: Copper and copper alloy press connections shall be made in accordance with the manufacturer's installation instructions. The tubing shall be fully inserted into the fitting and the tubing marked at the shoulder of the fitting. The fitting alignment shall be checked against the mark on the tubing to assure the tubing is fully engaged (inserted) in the fitting. The joints shall be pressed using the tool(s) approved by the manufacturer.

3.9 SCHEDULES

A. Pipe Hanger Spacing:
   1. Copper Piping:
      a. 1-1/4 inch diameter and smaller: 6 feet maximum horizontal spacing, 10 feet maximum vertical spacing.
      b. 1-1/2 inch diameter and larger: 10 feet maximum horizontal spacing, 10 feet maximum vertical spacing.

END OF SECTION

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PART 1 GENERAL

1.1 SECTION INCLUDES

A. Air vents.

1.2 SUBMITTALS

A. Product Data: Provide product data for manufactured products and assemblies required for this project. Include component sizes, rough-in requirements, service sizes, and finishes. Include product description and model.

B. Manufacturer's Installation Instructions: Indicate hanging and support methods, joining procedures.

1.3 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the type of products specified in this section, with minimum three years of documented experience.

PART 2 PRODUCTS

2.1 AIR VENTS

A. Manual Type: Short vertical sections of 2-inch diameter pipe to form air chamber, with 1/8 inch brass needle valve at top of chamber.

B. Float Type:
   1. Brass or semi-steel body, copper, polypropylene, or solid non-metallic float, stainless steel valve and valve seat; suitable for system operating temperature and pressure; with isolating valve.
   2. Cast iron body and cover, float, bronze pilot valve mechanism suitable for system operating temperature and pressure; with isolating valve.

PART 3 EXECUTION

3.1 INSTALLATION

A. Install specialties in accordance with manufacturer's instructions.

B. Provide manual air vents at system high points and as indicated.

END OF SECTION

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PART 1 GENERAL

1.1 SECTION INCLUDES

A. Pipe and pipe fittings.

B. Pipe hangers and supports.

C. Steam piping system.

D. Steam condensate piping system.

1.2 REFERENCE STANDARDS

A. ASME B16.3 - Malleable Iron Threaded Fittings: Classes 150 and 300; 2011.

B. ASME B31.1 - Power Piping; 2014.

C. ASME B31.9 - Building Services Piping; 2014.

D. ASME BPVC-IX - Boiler and Pressure Vessel Code, Section IX - Welding, Brazing, and Fusing Qualifications; 2015.

E. ASTM A47/A47M - Standard Specification for Ferritic Malleable Iron Castings; 1999 (Reapproved 2014).

F. ASTM A53/A53M - Standard Specification for Pipe, Steel, Black and Hot-Dipped, Zinc-Coated, Welded and Seamless; 2012.

G. ASTM A234/A234M - Standard Specification for Piping Fittings of Wrought Carbon Steel and Alloy Steel for Moderate and High Temperature Service; 2015.

H. AWS D1.1/D1.1M - Structural Welding Code - Steel; 2015.

I. MSS SP-58 - Pipe Hangers and Supports - Materials, Design, Manufacture, Selection, Application, and Installation; 2009.

J. MSS SP-69 - Pipe Hangers and Supports - Selection and Application; 2003.

K. MSS SP-89 - Pipe Hangers and Supports - Fabrication and Installation Practices; 2003.

1.3 SYSTEM DESCRIPTION

A. Use unions and flanges downstream of valves and at equipment or apparatus connections. Use dielectric unions where joining dissimilar materials. Do not use direct welded or threaded connections.

B. Provide pipe hangers and supports in accordance with ASME B31.9 or MSS SP-58 unless indicated otherwise.

C. Use gate valves for shut-off and to isolate equipment, part of systems, or vertical risers.

1.4 SUBMITTALS

A. Product Data: Provide data on pipe materials, pipe fittings, valves and accessories. Provide manufacturers catalogue information. Indicate valve data and ratings.

B. Piping Schedule: Provide schedule of piping applications and materials, indicating piping and fittings.

C. Manufacturer's Installation Instructions: Indicate hanging and support methods, joining procedures.

1.5 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the type of products specified in this section, with minimum three years of documented experience.

B. Installer Qualifications: Company specializing in performing the work of this section, with minimum 3 years of documented experience.

PART 2 PRODUCTS

2.1 REGULATORY REQUIREMENTS

A. Comply with ASME B31.9 and ASME B31.1 code for installation of piping system.

B. Welding Materials and Procedures: Comply with ASME BPVC-IX and applicable state labor regulations.

2.2 LOW PRESSURE STEAM PIPING (15 PSIG MAXIMUM)

A. Steel Pipe: ASTM A53/A53M, Schedule 40, black.
   1. Fittings: ASME B16.3 malleable iron Class 150, or ASTM A234/A234M wrought steel.
   2. Joints: Threaded, or AWS D1.1/D1.1M welded.

2.3 LOW PRESSURE STEAM CONDENSATE PIPING

A. Steel Pipe: ASTM A53/A53M, Schedule 80, black.
   1. Fittings: ASME B16.3 malleable iron Class 150, or ASTM A234/A234M wrought steel.
   2. Joints: Threaded, or AWS D1.1/D1.1M welded.

2.4 PIPE HANGERS AND SUPPORTS

A. Provide hangers and supports that comply with MSS SP-58.
   1. If type of hanger or support for a particular situation is not indicated, select appropriate type using MSS SP-58 recommendations.

B. Hangers for Pipe Sizes 1/2 to 1-1/2 Inch: Carbon steel, adjustable swivel, split ring.

C. Hangers for Pipe Sizes 2 to 4 Inches: Carbon steel, adjustable, clevis.

D. Multiple or Trapeze Hangers for Pipe Sizes to 4 inches: Steel channels with welded spacers and hanger rods.

E. Wall Support for Pipe Sizes to 3 Inches: Cast iron hook.

F. Vertical Support: Steel riser clamp.

G. Hanger Rods: Mild steel threaded both ends, threaded one end, or continuous threaded.

H. Inserts: Malleable iron case of galvanized steel shell and expander plug for threaded connection with lateral adjustment, top slot for reinforcing rods, lugs for attaching to forms; size inserts to suit threaded hanger rods.

2.5 UNIONS, FLANGES, AND COUPLINGS

A. Unions for Pipe 2 Inches and Under:
   1. Ferrous Piping: 150 psig galvanized malleable iron, threaded.

2.6 GATE VALVES

A. Up To and Including 2 inches: Rising stem, inside screw, solid wedge disc:
   1. Class: 125
   2. Body: ASTM B-62 bronze.
   3. Bonnet: ASTM B-62 bronze, screw-in.
   4. Stem: Rising, ASTM B-371 copper-silicon bronze.
   5. Packing Nut: ASTM B-584 bronze..
   6. Packing Gland: Brass.
   7. Packing: Non-asbestos kevlar fibers with Teflon.

8. Disc: Solid ASTM B-62 bronze
9. Ends: Threaded.

B. 2-1/2 inches and Larger: Non-rising stem, bolted bonnet, solid wedge disc:
1. Class: 125
2. Body: ASTM A-126 Class B cast iron.
3. Bonnet: ASTM A-108 steel.
4. Stem: ASTM B-584 copper-silicon bronze.
5. Packing Gland: ASTM A-126 Class B cast iron.
6. Packing Gland Flange: ASTM A-126 Class B cast iron.
7. Packing: Non-asbestos acrylic and novaloid fibers with Teflon.
8. Disc: ASTM A-126 Class B cast iron..
9. Disc Holder: ASTM B-62 bronze.
10. Repacking Seat Bushing: ASTM A-276 stainless steel, type 410.
11. Seat Ring: ASTM A-126 Class B cast iron.
12. Handwheel: ASTM A-126 Class B cast iron.
13. Ends: Flanged.

C. Acceptable Manufacturers:
1. Nibco
2. Stockham
3. Milwaukee

PART 3 EXECUTION

3.1 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Route piping in orderly manner, plumb and parallel to building structure, and maintain gradient.

C. Install piping to conserve building space and avoid interference with use of space.

D. Install piping to allow for expansion and contraction without stressing pipe, joints, or connected equipment.

E. Pipe Hangers and Supports:
1. Install in accordance with ASME B31.9.
2. Support horizontal piping as indicated.
3. Place hangers within 12 inches of each horizontal elbow.
4. Use hangers with 1-1/2 inch minimum vertical adjustment. Design hangers for pipe movement without disengagement of supported pipe.

3.2 THREADED CONNECTIONS

A. Note the internal length of threads in valve ends, and proximity of valve internal seat or wall, to determine how far pipe should be threaded into valve.

B. Align threads at point of assembly.

C. Apply appropriate tape or thread compound to the external pipe threads (except where dry seal threading is specified).

D. Assemble joint, wrench tight. Wrench on valve shall be on the valve end into which the pipe is being threaded.

3.3 SCHEDULES

A. Pipe Hanger Spacing:

1. Steel Pipe: 12 feet maximum horizontal spacing, 15 feet maximum vertical spacing.

END OF SECTION

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Materials.
   1. System cleaner.
   2. Closed system treatment (water).

1.2 SUBMITTALS

A. Product Data: Provide chemical treatment materials, chemicals, and equipment including electrical characteristics and connection requirements.

B. Manufacturer's Installation Instructions: Indicate placement of equipment in systems, piping configuration, and connection requirements.

C. Manufacturer's Field Reports: Indicate start-up of treatment systems when completed and operating properly. Indicate analysis of system water after cleaning and after treatment.

1.3 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the type of products specified in this section, with minimum three years of documented experience. Company shall have local representatives with water analysis laboratories and full time service personnel.

B. Installer Qualifications: Company specializing in performing the type of work specified in this section, with minimum 3 years of experience and approved by manufacturer.

1.4 REGULATORY REQUIREMENTS

A. Conform to applicable code for addition of non-potable chemicals to building mechanical systems and to public sewage systems.

B. Products Requiring Electrical Connection: Listed and classified by UL as suitable for the purpose specified and indicated.

PART 2 PRODUCTS

2.1 SYSTEM CLEANER FOR NEWLY INSTALLED PIPING SYSTEMS (HEATING WATER LOOPS)

A. Closed Loop Water System Cleaner/Conditioner: Provide industrial degreaser which is chemically engineered to include non-ionic as well as ionic surface-active compounds dispersed in dionized water.

B. Chemical Composition:
   1. Boiling Point: 212 Degrees F.
   2. Freezing Point: 30 Degrees F.
   3. Weight per Gallon at 68 Degrees F: 8.67 pounds.
   4. Coefficient of Expansion at 68 Degrees F: 0.00019.
   5. Coefficient of Expansion at 131 Degrees F: 0.00023.
   6. Flash Point PMCC/COC: None/None.
   7. Vapor Pressure, Reid Bomb at 100 Degrees F: 1.4 psia.
   8. Vapor Density (Air = 1): <1.
   9. Specific Gravity (water = 1): 1.04031.
   10. Evaporation Rate (Butyl Acetate = 1): <1.
   11. Volitile % by Volume: 100%.
   12. Solubility in Water: Complete.
   13. Color: Amber.

14. pH: 7.2/8.2.

C. Manufacturer: Interclean DG-3, or approved equal.

2.2 SYSTEM CLEANER FOR RE-USED AND RETROFITTED SYSTEMS (HEATING WATER LOOPS)

A. Closed Loop Water System Cleaner/Conditioner: Provide industrial cleaner consisting of ammonia-neutralized chelating and sequetering agents to convert water insoluble compounds containing the elements of calcium, magnesium, iron, aluminum, copper, lead and zinc into water soluble compounds, allowing for removal of corrosion such as rust, line and other mineral scales.

B. Chemical Composition:
1. Boiling Point: 216 Degrees F.
2. Freezing Point: 18 Degrees F.
3. Weight per Gallon at 68 Degrees F: 9.37 pounds.
4. Coefficient of Expansion at 68 Degrees F: 0.00018.
5. Coefficient of Expansion at 131 Degrees F: 0.00018.
6. Flash Point PMCC/COC: None/None.
7. Vapor Pressure, Reid Bomb at 100 Degrees F: 1.2 psia.
8. Vapor Density (Air = 1): <1.
9. Specific Gravity (water = 1): 1.12425.
10. Evaporation Rate (Butyl Acetate = 1): <1.
11. Volitile % by Volume: 100%.
12. Solubility in Water: Complete.
13. Color: Blue Green.
14. pH: 7.2/8.2.

C. Manufacturer: Interclean MC-1, or approved equal.

PART 3 EXECUTION

3.1 PREPARATION

A. Systems shall be operational, filled, started, and vented prior to cleaning. Use water meter to record capacity in each system.

B. Place terminal control valves in open position during cleaning.

C. Verify that electric power is available and of the correct characteristics.

3.2 NEW PIPING CLEANING SEQUENCE

A. Concentration:
1. 1% by volume, verify with cleaner manufacturer.

B. Water Systems:
1. Fill the system with clear water with air bleeds open to completely vent air. Close air bleeds and circulate for 30 minutes.
2. Stop circulation and drain the entire system as quickly as possible through low point drains.
3. Fill the system with the required concentration clear water and system cleaner with air bleeds open to completely vent air. Close air bleeds.
4. Operate the system at as high a temperature as possible but do not exceed 190 degrees F. Continue to operate until pH is greater than 8.3. At 180 degrees F, this may take 8-12 hours. At ambient temperature, this may take 24-36 hours.

5. Stop circulation and drain the entire system as quickly as possible through low point drains.
6. Fill the system with clear water with air bleeds open to completely vent air. Close air bleeds and circulate for 30 minutes.
7. Stop circulation and drain the entire system as quickly as possible through low point drains.
8. Inspect piping condition at representative locations. If the system is not satisfactory, repeat steps 3-7.

3.3 EXISTING PIPING CLEANING SEQUENCE

A. Concentration:
   1. 10% by volume, verify with cleaner manufacturer.

B. Water Systems:
   1. Fill the system with clear water with air bleeds open to completely vent air. Close air bleeds and circulate for 30 minutes.
   2. Stop circulation and drain the entire system as quickly as possible through low point drains.
   3. Fill the system with the required concentration clear water and system cleaner with air bleeds open to completely vent air. Close air bleeds.
   4. Operate the system at as high a temperature as possible but do not exceed 190 degrees F. Continue to operate until pH is greater than 8.3. At 180 degrees F, this may take 8-12 hours. At ambient temperature, this may take 24-36 hours.
   5. Stop circulation and drain the entire system as quickly as possible through low point drains.
   6. Fill the system with clear water with air bleeds open to completely vent air. Close air bleeds and circulate for 30 minutes.
   7. Stop circulation and drain the entire system as quickly as possible through low point drains.
   8. Inspect piping condition at representative locations. If the system is not satisfactory, repeat steps 3-7.

3.4 CLEANING SEQUENCE

A. Concentration:
   1. As recommended by manufacturer.

B. Hot Water Heating Systems:
   1. Apply heat while circulating, slowly raising temperature to 160 degrees F and maintain for 12 hours minimum.
   2. Remove heat and circulate to 100 degrees F or less; drain systems as quickly as possible and refill with clean water.
   3. Circulate for 6 hours at design temperatures, then drain.
   4. Refill with clean water and repeat until system cleaner is removed.

C. Use neutralizer agents on recommendation of system cleaner supplier and approval of Engineer.

D. Flush open systems and glycol filled closed systems with clean water for one hour minimum. Drain completely and refill.

E. Remove, clean, and replace strainer screens.

F. Inspect, remove sludge, and flush low points with clean water after cleaning process is completed. Include disassembly of components as required.

3.5 INSTALLATION

A. Install in accordance with manufacturer's instructions.

END OF SECTION

PART 1 GENERAL

1.1 SECTION INCLUDES

1.2 REFERENCE STANDARDS

A. AHRI 410 - Standard for Forced-Circulation Air-Cooling and Air-Heating Coils; 2001 (R2011).

B. ASHRAE (HVACA) - ASHRAE Handbook - HVAC Applications; 2015.

C. ASHRAE Std 62.1 - Laboratory Method of Testing to Determine the Sound Power in a Duct; 2013.

D. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

E. NFPA 90A - Standard for the Installation of Air-Conditioning and Ventilating Systems; 2015.

1.3 SUBMITTALS

A. Product Data: Provide typical catalog of information including arrangements.

B. Shop Drawings:
   1. Indicate cross sections of cabinets, grilles, bracing and reinforcing, and typical elevations.
   2. Indicate air coil and frame configurations, dimensions, materials, rows, connections, and rough-in dimensions.
   3. Submit schedules of equipment and enclosures typically indicating length and number of pieces of element and enclosure, corner pieces, end caps, cap strips, access doors, pilaster covers, and comparison of specified heat required to actual heat output provided.
   4. Indicate mechanical and electrical service locations and requirements.

C. Selection Samples: For each finish product specified, color chart representing manufacturer's full range of available colors.

D. Verification Samples: For each finish product specified, color chip representing actual product in color and texture.

E. Certificates: Certify that coils are tested and rated in accordance with AHRI 410.

F. Manufacturer's Instructions: Indicate installation instructions and recommendations.

G. Operation and Maintenance Data: Include manufacturer's descriptive literature, operating instructions, installation instructions, maintenance and repair data, and parts listings.

1.4 QUALITY ASSURANCE

A. Manufacturer Qualifications: Company specializing in manufacturing the Products specified in this section with minimum three years documented experience.

B. Products Requiring Electrical Connection: Listed and classified by Underwriters Laboratories Inc. as suitable for the purpose specified and indicated.

PART 2 PRODUCTS

2.1 HYDRONIC CABINET UNIT HEATERS

A. Provide products listed, classified, and labeled by Underwriters Laboratories Inc. (UL), Intertek (ETL), or testing firm acceptable to Authority Having Jurisdiction as suitable for the purpose indicated.

B. Coils:
   1. Evenly spaced aluminum fins mechanically bonded to copper tubes.

2. Heating Hot Water: Suitable for working temperatures up to a maximum not less than 200 degrees F.

C. Cabinet: Minimum 16 gauge, 0.0598 inch thick sheet steel front panel with exposed corners and edges rounded, easily removed panels, glass fiber insulation, integral air outlet, and inlet grilles.

D. Finish: Factory applied baked primer coat on visible surfaces of enclosure or cabinet.

E. Fans: Centrifugal forward-curved double-width wheels, statically and dynamically balanced, direct driven.

F. Motor: Tap wound multiple speed Electrically Commutated Motors (ECM) with sleeve bearings, resiliently mounted.

G. Provide with unit mounted disconnect switch.

H. Filter: Easily removed, 1 inch thick glass fiber throw-away type, located to filter air before coil.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that surfaces are suitable for installation.

B. Verify that field measurements are as indicated on drawings.

3.2 INSTALLATION

A. Install in accordance with manufacturer's recommendations.

B. Install equipment exposed to finished areas after walls and ceilings are finished and painted.

C. Do not damage equipment or finishes.

D. Cabinet Unit Heaters:
1. Install as indicated.
2. Coordinate to ensure correct recess size for recessed units.

3.3 CLEANING

A. After construction and painting is completed, clean exposed surfaces of units.

B. Vacuum clean coils and inside of units.

C. Touch-up marred or scratched surfaces of factory-finished cabinets using finish materials furnished by the manufacturer.

D. Install new filters.

E. Protect units before, during and after installation. Damaged material due to improper site protection shall be cause for rejection.

3.4 PROTECTION

A. Provide finished cabinet units with protective covers during the balance of construction.

END OF SECTION

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Electrical demolition.

PART 2 PRODUCTS

2.1 MATERIALS AND EQUIPMENT

A. Materials and equipment for patching and extending work: As specified in individual sections.

PART 3 EXECUTION

3.1 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 Engineer before disturbing existing installation.

E. Beginning of demolition means installer accepts existing conditions.

3.2 PREPARATION

A. 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.

3.3 DEMOLITION AND EXTENSION OF EXISTING ELECTRICAL WORK

A. Remove, relocate, and extend existing installations to accommodate new construction.

B. Remove abandoned wiring to source of supply.

C. Remove exposed abandoned conduit, including abandoned conduit above accessible ceiling finishes. Cut conduit flush with walls and floors, and patch surfaces.

D. Disconnect abandoned outlets and remove devices. Remove abandoned outlets if conduit servicing them is abandoned and removed. Provide blank cover for abandoned outlets that are not removed.

E. Repair adjacent construction and finishes damaged during demolition and extension work.

F. Maintain access to existing electrical installations that remain active. Modify installation or provide access panel as appropriate.

3.4 CLEANING AND REPAIR

A. Clean and repair existing materials and equipment that remain or that are to be reused.

B. Panelboards: Clean exposed surfaces and check tightness of electrical connections. Replace damaged circuit breakers and provide closure plates for vacant positions. Provide typed circuit directory showing revised circuiting arrangement.

C. Luminaires: Remove existing luminaires for cleaning. Use mild detergent to clean all exterior and interior surfaces; rinse with clean water and wipe dry. Replace lamps, ballasts and broken electrical parts.

END OF SECTION

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PART 1 GENERAL

1.1 SECTION INCLUDES

A. Grounding and Bonding
B. Low-Voltage Electrical Power Conductors and Cables
C. Conduit
D. Boxes
E. Hangers and Supports
F. Electrical Identification
G. Wiring Devices

1.2 REFERENCES

A. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.
B. NFPA 70E - Standard for Electrical Safety in the Workplace; 2015.
C. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2010.
D. NETA ATS - Acceptance Testing Specifications for Electrical Power Equipment and Systems; 2013.
E. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum); 2014.
F. ASTM E814 Standard Test Method for Fire Tests of Through-Penetration Fire Stops; 2013a.
G. UL (FRD) - Fire Resistance Directory; Underwriters Laboratories Inc.; current edition.
H. UL 149 - Standard for Fire Tests of Penetration Firestops; Current Edition, Including All Revisions.
I. ASTM C920 - Standard Specification for Elastomeric Joint Sealants; 2014.
J. ASTM C1193 - Standard Guide for Use of Joint Sealants ; 2013.

1.3 SUBMITTALS

A. Product Data: Provide catalog sheets, specifications, and installation instructions for each product.

1.4 QUALITY ASSURANCE

A. Conform to requirements of NFPA 70.
B. Manufacturer Qualifications: Company specializing in manufacturing products specified in this section, with not less than three years of documented experience.
C. Products: Furnish products listed and classified by Underwriters Laboratories Inc. as suitable for the purpose specified and indicated.

PART 2 PRODUCTS

2.1 GROUNDING AND BONDING

A. Connectors and Accessories
    1. Mechanical Connectors:
        a. Solderless Pressure Connectors
        b. Spring Wire Connectors
        c. Compression Connectors

d. Cable Connector Blocks: Insulated, double-sided, for dry locations.
2. Wire: Stranded copper.
3. Grounding Electrode Conductor: Size to meet NFPA 70 requirements.

2.2 LOW-VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES

A. Wiring Requirements
1. Concealed Dry Interior Locations: Use only building wire with Type THHN/THWN insulation in raceway.
2. Exposed Dry Interior Locations: Use only building wire with Type THHN/THWN insulation in raceway.
3. Above Accessible Ceilings: Use only building wire with Type THHN/THWN insulation in raceway.
4. Wet or Damp Interior Locations: Use only building wire with Type XHHW insulation in raceway.
5. Underground and In-slab Installations: Use only building wire with Type XHHW insulation in raceway.
6. Use solid conductor for feeders and branch circuits 10 AWG and smaller.
7. Use stranded conductors for control circuits.
8. Use conductor not smaller than 12 AWG for power and lighting circuits.
9. Use conductor not smaller than 16 AWG for control circuits.
10. Use 10 AWG conductors for 20 ampere, 120 volt branch circuits longer than 75 feet.
11. Use 10 AWG conductors for 20 ampere, 277 volt branch circuits longer than 200 feet.
12. Conductor sizes are based on copper.
13. Use only copper conductors.

B. Wire Manufacturers
1. Cerro Wire Inc: www.cerrowire.com.
2. Industrial Wire & Cable, Inc: www.iewc.com.
3. Southwire Company: www.southwire.com.

C. Building Wire
1. Description: Single conductor insulated wire.
2. Conductor: Copper.
3. Insulation Voltage Rating: 600 volts.
4. Insulation: NFPA 70, Type THHN/THWN. XHHW as indicated above.

D. Connector Manufacturers
1. T&B: www.tnb.com
2. Burndy: www.fciconnect.com
3. Polaris: www.polarisconnectors.com

E. Wiring Connectors
1. Solderless Pressure Connectors
2. Spring Wire Connectors
3. Compression Connectors

2.3 CONDUIT

A. Conduit Requirements
1. Conduit Size: Comply with NFPA 70.
a. Minimum Size: 3/4 inch unless otherwise specified.
2. Wet and Damp Locations: Use rigid steel conduit.
3. Dry Locations:
a. Concealed: Use electrical metallic tubing.

b. Exposed: Use rigid steel conduit or electrical metallic tubing.

B. Metal Conduit
1. Manufacturers:
a. Allied Tube & Conduit: www.alliedtube.com.
b. Beck Manufacturing, Inc: www.beckmfg.com.
c. Wheatland Tube Company: www.wheatland.com.
2. Rigid Steel Conduit: ANSI C80.1.
3. Fittings and Conduit Bodies: NEMA FB 1; material to match conduit.

C. Flexible Metal Conduit
1. Manufacturers:
a. AFC Cable Systems, Inc: www.afcweb.com.
b. Electri-Flex Company: www.electriflex.com.
c. International Metal Hose: www.metalhose.com.
2. Description: Interlocked steel construction. UL Listed.
3. Fittings: NEMA FB 1.

D. Liquidtight Flexible Metal Conduit
1. Manufacturers:
a. AFC Cable Systems, Inc: www.afcweb.com.
b. Electri-Flex Company: www.electriflex.com.
c. International Metal Hose: www.metalhose.com.
2. Description: Interlocked steel construction with PVC jacket. UL listed.
3. Fittings: NEMA FB 1.

E. Electrical Metallic Tubing (EMT)
1. Manufacturers:
a. Allied Tube & Conduit: www.alliedtube.com.
b. Beck Manufacturing, Inc: www.beckmfg.com.
c. Wheatland Tube Company: www.wheatland.com.
2. Description: ANSI C80.3; galvanized tubing.
3. Fittings and Conduit Bodies: NEMA FB 1; steel or malleable iron compression type.

2.4 BOXES

A. Manufacturers
1. Appleton Electric: www.appletonelec.com.
2. Arc-Co./Division of Arcade Technology: www.arc-co.com.
3. Thomas and Betts: www.tnb.com
4. Unity Manufacturing: www.unitymfg.com.

B. Outlet Boxes
1. Sheet Metal Outlet Boxes: NEMA OS 1, galvanized steel.
a. Luminaire and Equipment Supporting Boxes: Rated for weight of equipment supported; include 1/2 inch male fixture studs where required.
2. Cast Boxes: NEMA FB 1, Type FD, aluminum. Provide gasketed cover by box manufacturer. Provide threaded hubs.
3. Wall Plates for Finished Areas: Smooth stainless steel.

C. Pull and Junction Boxes
1. Sheet Metal Boxes: NEMA OS 1, galvanized steel.

2.5 HANGERS AND SUPPORTS

A. Manufacturers
1. Thomas & Betts Corporation: www.tnb.com.

2. Threaded Rod Company: www.threadedrod.com.
3. Cooper B-Line, Inc.: www.b-line.com.
4. Unistrut; Tyco International, Ltd: www.unistrut.com.
5. Hilti Inc.
6. ITW Ramset/Red Head; a division of Illinois Tool Works, Inc.
7. MKT Fastening, LLC.

B. Materials
1. Hangers, Supports, Anchors, and Fasteners - General: Corrosion-resistant materials of size and type adequate to carry the loads of equipment and conduit, including weight of wire in conduit.
2. Supports: Fabricated of structural steel or formed steel members; galvanized.
3. Anchors and Fasteners:
   a. Do not use powder-actuated anchors, spring clips, or beam clamps.
   b. Concrete Structural Elements: Use precast inserts, expansion anchors, or preset inserts.
   c. Steel Structural Elements: Use beam clamps, steel spring clips, steel ramset fasteners, or welded fasteners.
   d. Concrete Surfaces: Use self-drilling anchors or expansion anchors.
   e. Hollow Masonry, Plaster, and Gypsum Board Partitions: Use toggle bolts or hollow wall fasteners.
   f. Solid Masonry Walls: Use expansion anchors or preset inserts.
   g. Sheet Metal: Use sheet metal screws.
   h. Wood Elements: Use wood screws.
4. Formed Steel Channel. Hot dipped galvanized steel.

2.6 ELECTRICAL IDENTIFICATION

A. Manufacturers
1. Brady Corporation: www.bradycorp.com.
2. Seton Identification Products: www.seton.com/aec.
3. HellermannTyton: www.hellermanntyton.com.

B. Nameplates and Labels
1. Nameplates: Engraved three-layer laminated plastic, black letters on white background.
2. Locations:
   a. Each electrical distribution and control equipment enclosure.
3. Letter Size:
   a. Use 1/8 inch letters for identifying individual equipment and loads.

C. Arc Flash Labels
1. Labels: Arc flash warning, adhesive-backed polyester, English/Spanish text, with arc-flash graphic, as required by OSHA and NEC 110.16.
2. Locations: Each electrical distribution and equipment enclosure installed as new or existing equipment incorporated into the Work.
3. Size: Minimum size 3-1/2" by 6".

D. Wire Markers
1. Description: tape, split sleeve, or tubing type wire markers.
2. Locations: Each conductor at panelboard gutters, pull boxes, outlet boxes, and junction boxes each load connection.
3. Legend:
   a. Power and Lighting Circuits: Branch circuit or feeder number indicated on drawings.
   b. Control and Low Voltage Circuits: Control wire and/or number indicated on shop drawings.

4. Wire Color Coding:
   a. 208 Volt System: Electric Light and Power Wiring:.
      1) Color Code:
         (a) 2 wire circuit - black, white.
         (b) 3 wire circuit - black, red, white.
         (c) 4 wire circuit - black, red, blue, white.
      2) White to be used only for an insulated grounded conductor (neutral).
         (a) "White" for Sizes No. 6 AWG or Smaller - Continuous white outer finish.
         (b) "White" for Sizes Larger Than No. 6 AWG - Continuous white outer finish, or Three continuous white stripes on other than green insulation along its continuous length, or distinctive white markings (color coding tape) encircling the conductor, installed on the conductor at time of its installation. Install white color coding tape at terminations, and at 1' 0" intervals in gutters, pull boxes, and manholes.
      3) Colors (Black, Red, Blue):
         (a) For Branch Circuits: Continuous color outer finish.
         (b) For Feeders:
            (1) Continuous color outer finish, or:
            (2) Color coding tapes encircling the conductors, installed on the conductors at time of their installation. Install color coding tapes at terminations, and at 1' 0" intervals in gutter, pull boxes, and manholes.
      4) Equipment Grounding Conductor:
         (a) Install equipment grounding conductor where specified in other Sections or indicated on the drawings, and In conjunction with circuits recommended by equipment manufacturers to have equipment grounding conductor.
         (b) Color Coding For Equipment Grounding Conductor:
            (1) Color Code: Green.
   b. Existing Color Coding Scheme: Where an existing color coding scheme is in use, match the existing color coding if it is in accordance with the requirements of NFPA 70.
   c. Multiple control voltage source within one enclosure: Provide individually color coded insulation for each control circuit within the enclosure to distinguish between control sources. Maintain color coding between source and common enclosure. Example: Fan 1 control voltage-purple, Fan 2 control voltage-yellow, Fan 3 control voltage-orange.

2.7 WIRING DEVICES

A. Manufacturers
   1. Cooper Wiring Devices: www.cooperwiringdevices.com.
   2. GE Industrial: www.geindustrial.com.
   3. Leviton Manufacturing, Inc: www.leviton.com.

B. Receptacles
   1. Receptacles: Heavy duty, complying with NEMA WD 6 and WD 1.
      a. Device Body: Ivory plastic.
      b. Configuration: NEMA WD 6, type as specified and indicated.
   2. Convenience Receptacles: Type 5 to 20.
   3. Duplex Convenience Receptacles.
   4. GFCI Receptacles: Convenience receptacle with integral ground fault circuit interrupter to meet regulatory requirements.

C. Wallplates
   1. Weatherproof Cover Plates: Thermoplastic weatherprooof whilein use type.

2.8 FIRESTOPPING

A. Firestopping of all joints and penetrations in fire-resistance rated and smoke-resistant assemblies, whether indicated on drawings or not, and other openings indicated.

B. Fire Testing: Provide firestopping assemblies of designs that provide the specified fire ratings when tested in accordance with methods indicated.
   1. Listing in the current-year classification or certification books of UL, FM, or ITS (Warnock Hersey) will be considered as constituting an acceptable test report.

C. Comply with firestopping manufacturer's recommendations for temperature and conditions during and after installation. Maintain minimum temperature before, during, and for 3 days after installation of materials.

D. Provide ventilation in areas where solvent-cured materials are being installed.

E. Firestopping Systems: Any material meeting requirements.
   1. Fire Ratings: Use any system listed by UL or tested in accordance with ASTM E 814 that has F Rating equal to fire rating of penetrated assembly and minimum T Rating Equal to F Rating and that meets all other specified requirements.

F. Firestopping Materials
   1. Firestopping Sealants: Provide only products having lower volatile organic compound (VOC) content than required by South Coast Air Quality Management District Rule No.1168.
   2. Elastomeric Silicone Firestopping: Single or multiple component silicone elastomeric compound and compatible silicone sealant.
   3. Foam Firestoppping: Single or multiple component silicone foam compound.
   4. Fibered Compound Firestopping: Formulated compound mixed with incombustible non-asbestos fibers.
   5. Firestop Devices - Wrap Type: Mechanical device with incombustible filler and collar, intended to be installed after penetrating item has been installed.
   6. Intumescent Putty: Compound that expands on exposure to surface heat gain.

PART 3 EXECUTION

3.1 GROUNDING AND BONDING INSTALLATION

A. Provide bonding to meet requirements described in Quality Assurance.

B. Equipment Grounding Conductor: Provide separate, insulated green conductor within each feeder and branch circuit raceway. Terminate each end on suitable lug, bus, or bushing.

3.2 LOW VOLTAGE ELECTRICAL POWER CONDUCTORS AND CABLES INSTALLATION

A. Examination
   1. Verify that interior of building has been protected from weather.
   2. Verify that mechanical work likely to damage wire and cable has been completed.
   3. Verify that raceway installation is complete and supported.
   4. Verify that field measurements are as indicated.

B. Preparation
   1. Completely and thoroughly swab raceway before installing wire.

C. Installation
   1. Install wire and cable securely, in a neat and workmanlike manner, as specified in NECA 1.
   2. Route wire and cable as required to meet project conditions.
      a. Wire and cable routing indicated is approximate unless dimensioned.

b. Include wire and cable of lengths required to install connected devices within 10 ft of location shown.

3. Use wiring methods indicated.
4. Pull all conductors into raceway at same time.
5. Use suitable wire pulling lubricant for building wire 4 AWG and larger.
6. Protect exposed cable from damage.
7. Support cables above accessible ceiling, using spring metal clips or metal cable ties to support cables from structure. Do not rest cable on ceiling panels or support from ceiling system support wires or ceiling support grid.
8. Use suitable cable fittings and connectors.
9. Neatly train and lace wiring inside boxes, equipment, and panelboards.
10. Clean conductor surfaces before installing lugs and connectors.
11. Make splices, taps, and terminations to carry full ampacity of conductors with no perceptible temperature rise.
12. Use insulated spring wire connectors with plastic caps for copper conductor splices and taps, 10 AWG and smaller.
13. Identify and color code wire and cable. Identify each conductor with its circuit number or other designation to provide a unique identifier.
14. Provide separate neutral conductor for each line-to-neutral branch circuit. Provide full size neutrals for three phase 4 wire feeders. Do not share neutrals between circuits.
15. Provide conductors in an individual raceway for each homerun indicated. Do not share raceways between circuits unless otherwise indicated or approved.
16. Provide #12AWG for each phase conductor, #12 neutral, and #12 ground where conductor size is not indicated on the drawings.
17. Provide listed hangers and supports designed for wire and cables. Attach hangers and supports from building structure or structural members. Do not support wire and cables from other equipment, conduits, cables, suspended ceiling grids, or suspended ceiling support wires.

D. Field Quality Control
1. Inspect and test in accordance with NETA STD ATS, except Section 4.

3.3 CONDUIT INSTALLATION

A. Examination
1. Verify that field measurements are as shown on drawings.
2. Verify routing and termination locations of conduit prior to rough-in.
3. Conduit routing is shown on drawings in approximate locations unless dimensioned. Route as required to complete wiring system.

B. Installation
1. Install conduit securely, in a neat and workmanlike manner, as specified in NECA 1.
2. Install steel conduit as specified in NECA 101.
3. Arrange supports to prevent misalignment during wiring installation.
4. Support conduit using coated steel or malleable iron straps, lay-in adjustable hangers, clevis hangers, and split hangers.
5. Group related conduits; support using conduit rack. Construct rack using steel channel; provide space on each for 25 percent additional conduits.
6. Fasten conduit supports to building structure and surfaces. Provide supports listed and intended for conduit hanging and support.
7. Do not support conduit with wire or perforated pipe straps. Remove wire used for temporary supports.
8. Do not attach conduit to ceiling support wires or ceiling support grids. Provide listed hangers and supports designed for conduit. Attach hangers and supports to building

structure or structural members. Do not support conduit from other equipment, conduits, or cables.
9. Arrange conduit to maintain headroom and present neat appearance.
10. Route exposed conduit parallel and perpendicular to walls.
11. Route conduit installed above accessible ceilings parallel and perpendicular to walls.
12. Route conduit in and under slab from point-to-point.
13. Maintain adequate clearance between conduit and piping.
14. Cut conduit square using saw or pipe cutter; de-burr cut ends.
15. Bring conduit to shoulder of fittings; fasten securely.
16. Install no more than equivalent of three 90 degree bends between boxes. Use conduit bodies to make sharp changes in direction, as around beams. Use hydraulic one shot bender to fabricate bends in metal conduit larger than 2 inch size.
17. Avoid moisture traps; provide junction box with drain fitting at low points in conduit system.
18. Provide suitable fittings to accommodate expansion and deflection where conduit crosses seismic.
19. Provide suitable pull string in each empty conduit except sleeves and nipples.
20. Use suitable caps to protect installed conduit against entrance of dirt and moisture.
21. Ground and bond conduit under provisions of this Section.
22. Provide an individual conduit run for each homerun indicated on the drawings. Do not combine circuits into fewer conduits than indicated.

C. Interface with Other Products
1. Install conduit to preserve fire resistance rating of partitions and other elements, using materials and methods specified in sections for thermal and moisture protection.
2. Provide access panels for conduit installation in existing areas with hard-surface ceilings. Select access panels to match fire rating of existing ceiling.

3.4 BOX INSTALLATION

A. Examination
1. Verify locations of floor boxes and outlets in offices and work areas prior to rough-in.

B. Installation
1. Install boxes securely, in a neat and workmanlike manner, as specified in NECA 1.
2. Install in locations as shown on Drawings, and as required for splices, taps, wire pulling, equipment connections, and as required by NFPA 70.
3. Set wall mounted boxes at elevations to accommodate mounting heights for equipment served. Match heights of existing wall boxes.
4. Orient boxes to accommodate wiring devices oriented per manufacturer's recommendations and to present a workmanlike appearance.
5. Maintain headroom and present neat mechanical appearance.
6. Coordinate installation of boxes and outlets with cabinetry and furniture. Refer to architectural drawings.
7. Install pull boxes and junction boxes above accessible ceilings and in unfinished areas only.
8. Inaccessible Ceiling Areas: Install outlet and junction boxes no more than 6 inches from ceiling access panel or from removable recessed luminaire. Provide ceiling access panels as required.
9. Install boxes to preserve fire resistance rating of partitions and other elements, using materials and methods specified in sections for thermal and moisture protection.
10. Coordinate mounting heights and locations of outlets mounted above counters, casework, benches, and backsplashes. Refer to architectural drawings.
11. Use flush mounting outlet box in finished areas.

12. Locate flush mounting box in masonry wall to require cutting of masonry unit corner only. Coordinate masonry cutting to achieve neat opening.
13. Do not install flush mounting box back-to-back in walls; provide minimum 6 inches separation. Provide minimum 24 inches separation in acoustic rated or fire rated walls.
14. Secure flush mounting box to interior wall and partition studs. Accurately position to allow for surface finish thickness.
15. Do not fasten boxes to ceiling support wires.
16. Support boxes independently of conduit, except cast box that is connected to two rigid metal conduits both supported within 12 inches of box.
17. Use gang box where more than one device is mounted together. Do not use sectional box.
18. Large Pull Boxes: Use hinged enclosure in interior dry locations, surface-mounted cast metal box in other locations. Provide internal wiring supports to secure cables.

C. Adjusting
   1. Adjust flush-mounting outlets to make front flush with finished wall material.
   2. Install knockout closures in unused box openings.

D. Cleaning
   1. Clean interior of boxes to remove dust, debris, and other material.

3.5 HANGERS AND SUPPORT INSTALLATION

A. Installation
   1. Install hangers and supports as required to adequately and securely support electrical system components, in a neat and workmanlike manner, as specified in NECA 1.
      a. Do not fasten supports to pipes, ducts, mechanical equipment, or conduit.
      b. Do not drill or cut structural members.
   2. Rigidly weld support members or use hexagon-head bolts to present neat appearance with adequate strength and rigidity. Use spring lock washers under all nuts.
   3. Install surface-mounted cabinets and panelboards with minimum of four anchors.
   4. In wet and damp locations use steel channel supports to stand cabinets and panelboards 1 inch off wall.

3.6 ELECTRICAL IDENTIFICATION INSTALLATION

A. Preparation
   1. Degrease and clean surfaces to receive nameplates and labels.

B. Installation
   1. Install nameplates and labels parallel to equipment lines.
   2. Secure nameplates to equipment front using screws.
   3. Secure nameplates to inside surface of door on panelboard that is recessed in finished locations.

3.7 WIRING DEVICE INSTALLATION

A. Examination
   1. Verify that outlet boxes are installed at proper height.
   2. Verify that wall openings are neatly cut and will be completely covered by wall plates.
   3. Verify that branch circuit wiring installation is completed, tested, and ready for connection to wiring devices.

B. Preparation
   1. Provide extension rings to bring outlet boxes flush with finished surface.
   2. Clean debris from outlet boxes.

C. Installation
   1. Install securely, in a neat and workmanlike manner, as specified in NECA 1.
   2. Install devices plumb and level.
   3. Install switches with OFF position down.
   4. Install receptacles with grounding pole on bottom.
   5. Connect wiring device grounding terminal to outlet box with bonding jumper.
   6. Install decorative plates on switch, receptacle, and blank outlets in finished areas.
   7. Connect wiring devices by wrapping conductor around screw terminal.

D. Adjusting and Cleaning
   1. Adjust devices and wall plates to be flush and level.
   2. Clean exposed surfaces to remove splatters and restore finish.

3.8 FIRESTOPPING INSTALLATION

A. Preparation
   1. Clean substrate surfaces of dirt, dust, grease, oil, loose material, or other matter that could adversely affect bond of firestopping material.
   2. Remove incompatible materials that could adversely affect bond.

B. Installation
   1. Install materials in manner described in fire test report and in accordance with manufacturer's instructions, completely closing openings.
   2. Do not cover installed firestopping until inspected by authority having jurisdiction.
   3. Install labelling required by code.

C. Cleaning and Protection.
   1. Clean adjacent surfaces of firestopping materials.
   2. Protect adjacent surfaces from damage by material installation.

END OF SECTION

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Circuit Breakers.

1.2 REFERENCES

A. NFPA 70 - National Electrical Code; National Fire Protection Association; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

1.3 SUBMITTALS

A. Product Data: Provide manufacturer's standard catalog pages and data sheets for circuit breakers, enclosures, and other installed components and accessories

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Match existing circuit breaker manufacturer.

2.2 CIRCUIT BREAKERS

A. Match existing make and model.

B. Compatible with existing panelboard.

C. Trip rating and number of poles as indicated on drawings.

2.3 ACCESSORIES

A. As required to complete installation:

PART 3 EXECUTION

3.1 INSTALLATION

A. Install in accordance with manufacturer's instructions.

B. Install circuit breakers in existing panelboard(s) as indicated on drawings.

C. Provide updated typewritten circuit directory reflecting each branch circuit load.

3.2 FIELD QUALITY CONTROL

A. Perform field inspection and testing in accordance with Section 01400.

3.3 ADJUSTING

A. Measure steady state load currents at each panelboard feeder; rearrange circuits in the panelboard to balance the phase loads to within 10 percent of each other. Maintain proper phasing for multi-wire branch circuits.

END OF SECTION

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PART 1 GENERAL

1.1 SECTION INCLUDES

A. Enclosed safety switches.

1.2 REFERENCE STANDARDS

A. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2010.

B. NEMA 250 - Enclosures for Electrical Equipment (1000 Volts Maximum); 2014.

C. NEMA KS 1 - Heavy Duty Enclosed and Dead-Front Switches (600 Volts Maximum); 2013.

D. NETA ATS - Acceptance Testing Specifications for Electrical Power Equipment and Systems; 2013.

E. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

F. UL 50 - Enclosures for Electrical Equipment, Non-Environmental Considerations; Current Edition, Including All Revisions.

G. UL 50E - Enclosures for Electrical Equipment, Environmental Considerations; Current Edition, Including All Revisions.

H. UL 98 - Enclosed and Dead-Front Switches; Current Edition, Including All Revisions.

I. UL 869A - Reference Standard for Service Equipment; Current Edition, Including All Revisions.

1.3 ADMINISTRATIVE REQUIREMENTS

A. Coordination:
   1. Coordinate the work with other trades. Avoid placement of ductwork, piping, equipment, or other potential obstructions within the dedicated equipment spaces and within 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. Verify with manufacturer that conductor terminations are suitable for use with the conductors to be installed.
   4. Notify Engineer of any conflicts with or deviations from Contract Documents. Obtain direction before proceeding with work.

1.4 SUBMITTALS

A. Product Data: Provide manufacturer's standard catalog pages and data sheets for enclosed switches and other installed components and accessories.

B. Project Record Documents: Record actual locations of enclosed switches.

C. Maintenance Data: Include information on replacement parts and recommended maintenance procedures and intervals.

1.5 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. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.

D. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Store in a clean, dry space. Maintain factory wrapping or provide an additional heavy canvas or heavy plastic cover to protect units from dirt, water, construction debris, and traffic.

B. Handle carefully in accordance with manufacturer's written instructions to avoid damage to enclosed switch internal components, enclosure, and finish.

1.7 FIELD CONDITIONS

A. Maintain ambient temperature between -22 degrees F and 104 degrees F during and after installation of enclosed switches.

PART 2 PRODUCTS

2.1 MANUFACTURERS

A. Eaton Corporation: www.eaton.com/#sle.

B. Schneider Electric; Square D Products: www.schneider-electric.us/#sle.

C. Siemens Industry, Inc: www.usa.siemens.com/#sle.

D. Source Limitations: Furnish enclosed switches and associated components produced by the same manufacturer as the other electrical distribution equipment used for this project and obtained from a single supplier.

2.2 ENCLOSED SAFETY SWITCHES

A. Description: Quick-make, quick-break enclosed safety switches listed and labeled as complying with UL 98; heavy duty; ratings, configurations, and features as indicated.

B. Provide products listed, classified, and labeled as suitable for the purpose intended.

C. Unless otherwise indicated, provide products suitable for continuous operation under the following service conditions:
   1. Altitude: Less than 6,600 feet.
   2. Ambient Temperature: Between -22 degrees F and 104 degrees F.

D. Horsepower Rating: Suitable for connected load.

E. Voltage Rating: Suitable for circuit voltage.

F. Short Circuit Current Rating:
   1. Provide enclosed safety switches, when protected by the fuses or supply side overcurrent protective devices to be installed, with listed short circuit current rating not less than the available fault current at the installed location as indicated on the drawings.

G. Enclosed Safety Switches Used for Service Entrance: Listed and labeled as suitable for use as service equipment according to UL 869A.

H. Provide with switch blade contact position that is visible when the cover is open.

I. Fuse Clips for Fusible Switches: As required to accept fuses indicated.
   1. Where NEMA Class R fuses are installed, provide rejection feature to prevent installation of fuses other than Class R.

J. Conductor Terminations: Suitable for use with the conductors to be installed.

K. Provide insulated, groundable fully rated solid neutral assembly where a neutral connection is required, with a suitable lug for terminating each neutral conductor.

L. Provide solidly bonded equipment ground bus in each enclosed safety switch, with a suitable lug for terminating each equipment grounding conductor.

M. Enclosures: Comply with NEMA 250, and list and label as complying with UL 50 and UL 50E.
   1. Environment Type per NEMA 250: Unless otherwise indicated, as specified for the following installation locations:
      a. Indoor Clean, Dry Locations: Type 1.
      b. Outdoor Locations: Type 3R.
   2. Finish for Painted Steel Enclosures: Manufacturer's standard, factory applied grey unless otherwise indicated.

N. Provide safety interlock to prevent opening the cover with the switch in the ON position with capability of overriding interlock for testing purposes.

O. Heavy Duty Switches:
   1. Comply with NEMA KS 1.
   2. Conductor Terminations:
      a. Provide mechanical lugs unless otherwise indicated.
      b. Lug Material: Aluminum, suitable for terminating aluminum or copper conductors.
   3. Provide externally operable handle with means for locking in the OFF position, capable of accepting three padlocks.
      a. Provide means for locking handle in the ON position.

PART 3 EXECUTION

3.1 EXAMINATION

A. Verify that field measurements are as indicated.

B. Verify that the ratings of the enclosed switches are consistent with the indicated requirements.

C. Verify that mounting surfaces are ready to receive enclosed safety switches.

D. Verify that conditions are satisfactory for installation prior to starting work.

3.2 INSTALLATION

A. Install products in accordance with manufacturer's instructions.

B. Perform work in accordance with NECA 1 (general workmanship).

C. Arrange equipment to provide minimum clearances in accordance with manufacturer's instructions and NFPA 70.

D. Install enclosed switches plumb.

E. Except where indicated to be mounted adjacent to the equipment they supply, mount enclosed switches such that the highest position of the operating handle does not exceed 79 inches above the floor or working platform.

F. Provide grounding and bonding on accordance with 260508.

G. Identify enclosed switches in accordance with Section 260553.

3.3 FIELD QUALITY CONTROL

A. Inspect and test in accordance with NETA ATS, except Section 4.

B. Perform inspections and tests listed in NETA ATS, Section 7.5.1.1.

C. Correct deficiencies and replace damaged or defective enclosed safety switches or associated components.

3.4 ADJUSTING

A. Adjust tightness of mechanical and electrical connections to manufacturer's recommended torque settings.

3.5 CLEANING

A. Clean dirt and debris from switch enclosures and components according to manufacturer's instructions.

B. Repair scratched or marred exterior surfaces to match original factory finish.

END OF SECTION

PART 1 GENERAL

1.1 SECTION INCLUDES

A. Interior luminaires.

B. Drivers.

1.2 REFERENCE STANDARDS

A. 47 CFR 15 - Radio Frequency Devices; current edition.

B. IES LM-79 - Approved Method: Electrical and Photometric Measurements of Solid-State Lighting Products; 2008.

C. IES LM-80 - Approved Method: Measuring Luminous Flux and Color Maintenance of LED Packages, Arrays, and Modules; Illuminating Engineering Society; 2015.

D. NECA 1 - Standard for Good Workmanship in Electrical Construction; 2010.

E. NECA/IESNA 500 - Standard for Installing Indoor Commercial Lighting Systems; 2006.

F. NEMA 410 - Performance Testing for Lighting Controls and Switching Devices with Electronic Drivers and Discharge Ballasts; 2011.

G. NEMA LE 4 - Recessed Luminaires, Ceiling Compatibility; 2012.

H. NFPA 70 - National Electrical Code; Most Recent Edition Adopted by Authority Having Jurisdiction, Including All Applicable Amendments and Supplements.

I. UL 1598 - Luminaires; Current Edition, Including All Revisions.

J. UL 8750 - Light Emitting Diode (LED) Equipment for Use in Lighting Products; Current Edition, Including All Revisions.

1.3 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 Engineer of any conflicts or deviations from Contract Documents to obtain direction prior to proceeding with work.

1.4 SUBMITTALS

A. 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.

B. 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.

C. Operation and Maintenance Data: Instructions for each product including information on replacement parts.

D. Maintenance Materials: Furnish the following for Nanuet Union Free School District's use in maintenance of project.
   1. Extra Lenses and Louvers: Two percent of total quantity installed for each type, but not less than one of each type.
   2. Extra Drivers: Two percent of total quantity installed for each type, but not less than one of each type.

1.5 QUALITY ASSURANCE

A. Comply with requirements of NFPA 70.

B. Conform to requirements of NFPA 70 .

C. Manufacturer Qualifications: Company specializing in manufacturing the products specified in this section with minimum three years documented experience.

D. Product Listing Organization Qualifications: An organization recognized by OSHA as a Nationally Recognized Testing Laboratory (NRTL) and acceptable to authorities having jurisdiction.

1.6 DELIVERY, STORAGE, AND PROTECTION

A. Receive, handle, and store products according to NECA/IESNA 500 (commercial lighting) and manufacturer's written instructions.

B. Keep products in original manufacturer's packaging and protect from damage until ready for installation.

1.7 FIELD CONDITIONS

A. Maintain field conditions within manufacturer's required service conditions during and after installation.

1.8 WARRANTY

A. Provide five year manufacturer warranty for all LED luminaires, including drivers and light engines.

PART 2 PRODUCTS

2.1 LUMINAIRE TYPES

A. Furnish products as indicated in luminaire schedule included on the drawings.

2.2 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 that comply with requirements of NFPA 70 and NFPA 101.

D. Provide products listed, classified, and labeled as suitable for the purpose intended.

E. 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.

F. 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.

G. Provide products suitable to withstand normal handling, installation, and service without any damage, distortion, corrosion, fading, discoloring, etc.

H. Provide LED fixtures from a single manufacturer.

I. All Lighting Fixtures must be DLC or Energy Star Rated.

J. 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.

K. Luminaires Mounted in Continuous Rows: Provide quantity of units required for length indicated, with all accessories required for joining and aligning.

2.3 DRIVERS

A. Ballasts/Drivers - General Requirements:
   1. Provide drivers containing no polychlorinated biphenyls (PCBs).
   2. Minimum Efficiency/Efficacy: Provide drivers complying with all current applicable federal and state efficiency/efficacy standards.
   3. Electronic Drivers: Inrush currents not exceeding peak currents specified in NEMA 410.

2.4 ACCESSORIES

A. Threaded Rods for Suspended Luminaires: Zinc-plated steel, minimum 1/4" size, field-painted as directed.

PART 3 EXECUTION

3.1 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 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.

3.2 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.

3.3 INSTALLATION

A. Install products in accordance with manufacturer's instructions.

B. Install luminaires securely, in a neat and workmanlike manner, as specified in NECA 1 (general workmanship).

C. Install luminaires plumb and square and aligned with building lines and with adjacent luminaires.

D. Suspended Luminaires:
   1. Install using the suspension method indicated, with support lengths and accessories as required for specified mounting height.
   2. Provide minimum of two supports for each luminaire equal to or exceeding 4 feet nominal length, with no more than 4 feet between supports.

E. Exposed Grid Ceilings: Support surface mounted luminaires in grid ceiling directly from building structure, minimum two 12 gauge support wires.

F. Install accessories furnished with each luminaire.

G. Make wiring connections to branch circuit using building wire with insulation suitable for temperature conditions within fixture; use flexible conduit.

H. Bond products and metal accessories to branch circuit equipment grounding conductor.

3.4 FIELD QUALITY CONTROL

A. Operate each luminaire after installation and connection to verify proper operation.

B. Correct wiring deficiencies and repair or replace damaged or defective products. Repair or replace excessively noisy ballasts as determined by Engineer.

3.5 ADJUSTING

A. Aim and position adjustable luminaires to achieve desired illumination as indicated or as directed by Engineer. 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 Engineer or authority having jurisdiction.

3.6 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.

B. Clean electrical parts to remove conductive and deleterious materials.

C. Remove dirt and debris from enclosures.

D. Clean finishes and touch up damage.

3.7 CLOSEOUT ACTIVITIES

A. Demonstration: Demonstrate proper operation of luminaires to Engineer, and correct deficiencies or make adjustments as directed.

3.8 PROTECTION

A. Protect installed luminaires from subsequent construction operations.

3.9 SCHEDULE - SEE DRAWINGS

PART 2 PRODUCTS

1.1 FIRE ALARM SYSTEM

A. Fire Alarm System: Provide modifications and extensions to the existing automatic fire detection and alarm system:
   1. Provide all components necessary, regardless of whether shown in Contract Documents or not.
   2. Protected Premises: Entire building shown on drawings.
   3. Comply with the following; where requirements conflict, order of precedence of requirements is as listed:
      a. ADA Standards.
      b. ICC / ANSI A117.1.
      c. The requirements of the State Fire Marshal.
      d. Applicable local codes.
      e. Contract Documents (drawings and specifications).
      f. NFPA 72; where the word "should" is used consider that provision mandatory; where conflicts between requirements require deviation from NFPA 72, identify deviations clearly on design documents.
   4. Evacuation Alarm: Single smoke zone; general evacuation of entire premises.
   5. Fire Alarm Control Unit: Existing, located at location shown on drawings..

B. Supervising Stations and Fire Department Connections:
   1. Public Fire Department Notification: By remote supervising station.
   2. Remote Supervising Station: UL-listed central station under contract to facility.
   3. Means of Transmission to Remote Supervising Station: Digital alarm communicator transmitter (DACT), 2 telephone lines.

C. Circuits:
   1. Initiating Device Circuits (IDC): Class B, Style A.
   2. Signaling Line Circuits (SLC) Within Single Building: Class B, Style 0.5.
   3. Notification Appliance Circuits (NAC): Class B, Style W.

D. Power Sources:
   1. Primary: Dedicated branch circuits of the facility power distribution system.
   2. Secondary: Storage batteries.
   3. Capacity: Sufficient to operate entire system for period specified by NFPA 72.
   4. Each Computer System: Provide uninterruptible power supply (UPS).

1.2 EXISTING COMPONENTS

1.3 FIRE SAFETY SYSTEMS INTERFACES

A. Supervision: Provide supervisory signals in accordance with NFPA 72 for the following:

B. Alarm: Provide alarm initiation in accordance with NFPA 72 for the following:
   1. Manual fire alarm pull station.
   2. Smoke detectors.
   3. Heat detectors.

C. Elevators:
   1. Elevator lobby, hoistway, and machine room smoke detectors: Elevator recall for fire fighters' service.
   2. Elevator Machine Room Heat Detector: Shut down elevator power prior to hoistway sprinkler activation.

1.4 COMPONENTS

A. General:
   1. Provide flush mounted units where installed in finish areas; in unfinished areas, surface mounted unit are acceptable.
   2. Provide legible, permanent labels for each control device, using identification used in operation and maintenance data.

B. Fire Alarm Control Units: Analog, addressable type; listed, classified, and labeled as suitable for the purpose intended.

C. Master Control Unit: Existing EST-3.

D. Addressable Modules:
   1. Unless otherwise indicated, use addressable modules only in clean, dry, indoor, nonhazardous locations.
   2. Monitor Modules: Unless devices are explicitly permitted to be connected together as zone, provide separate addressable monitor module for each conventional dry-contact input device in order to be individually identifiable by addressable fire alarm control unit.
   3. Control Modules: Provide as indicated or as required for selective control of notification appliances.
   4. Relay Modules: Provide as indicated or as required to perform necessary functions via dry-contact interface. Where load exceeds module contact rating, provide accessory power isolation relays suitable for load as required.

E. Manual Fire Alarm Stations:
   1. Semi-Flush mounted, single action manual station with break-glass rod and manufacturer's standard backbox.
   2. Each manual station shall store the address of that unit.

F. Analog Smoke and Heat Sensors:
   1. Analog Photo Sensors:
      a. Each sensor shall store the sensor address and operating characteristics in non-volatile memory at the sensor. Sensor shall use a threshold received from the control unit to determine when an alarm condition exists.
      b. Each sensor shall have two alarm LED's for 360 degree viewing. The alarm LED's shall flash when communicating with the control panel and shall illuminate steady during alarm conditions.
      c. Sensitivity settings for photoelectric sensors shall be set and displayed on the LCD in percent obscuration per foot.
      d. Each sensor shall be capable of compensating for dust and dirt accumulation within the sensing chamber.
      e. A calibrated light source shall be used to calibrate the fire level of the photoelectric sensor. Sensors which use a fixed fire level limit are not acceptable.
      f. Provide two-wire detector with common power supply and signal circuits.
   2. Analog Thermal Sensors:
      a. Each sensor shall store the sensor address and operating characteristics in non-volatile memory at the sensor; sensor shall use a threshold received from the control unit to determine when an alarm condition exists.
      b. Each sensor shall have two alarm LED's for 360 degree viewing. The alarm LED's shall flash when communicating with the control panel and shall illuminate steady during alarm conditions.
      c. Sensitivity settings for thermal sensors shall be set and displayed on the LCD in degrees fahrenheit. The set point for the thermal sensor shall be adjustable between 135 degrees and 200 degrees. The thermal detector shall operate on a combination rate of rise and fixed temperature principle adjustable at the fire alarm panel.

G. Peripheral Fire Alarm Equipment:
   1. Fast Response Contact Module:
      a. Contact modules shall provide monitoring of dry contacts as initiating devices.
      b. Each module shall store the sensor address and operating characteristics in non-volatile memory at the module.
      c. Mount module to a standard junction box and provide visual indication of status via a status LED. Optional mounting shall be available to allowing mounting the module in a junction box with a monitored contact.
   2. Supervised Output Module:
      a. Each supervised output module shall be rated to operate listed notification appliances.
      b. Circuit shall be rated for 2.0 amps at 24 VDC.
      c. Each module shall store the sensor address and operating characteristics in non-volatile memory at the module.
      d. Each module shall operate under up to 16 different conditions occurring in the system. These conditions include combining various zones and zone states.
   3. Dual Relay Module:
      a. Module shall provide two independently operating and configurable relays.
      b. Each relay shall be rated for 2.0 amps at 24 VDC.
      c. Each module shall store the sensor address and operating characteristics in non-volatile memory at the module.
      d. Each module shall operate under up to 16 different conditions occurring in the system. These conditions include combining various zones and zone states.
      e. Module shall operate both relays without requiring a separate power source.

H. Fire Alarm Notification Appliances:
   1. Strobes: NFPA 72 lamp and flasher with red lettered "FIRE" on clear clear lens.
      a. Meeting requirements of NFPA/ANSI standards and ADA Accessibility Guidelines.
      b. Minimum rating of 15 candela field adustable up to 110 candela including 30, 60, and 75 candela.
         1) Slash ratings such as 15/30 15/75 shall not be acceptable, device must carry full rating in both viewing directions.
      c. 177 candela for "sleeping roooms".
   2. Horns: NFPA 72 Flush type fire alarm horn.
      a. Minimum rating of 85 decibels, field adjustable up to 95 decibels.
   3. Horn/Strobes.
      a. Combination units with minimum ratings of horn and strobe units specified.

I.

J. Initiating Devices:
   1. Addressable Systems:
      a. Addressable Devices: Individually identifiable by addressable fire alarm control unit.
      b. Provide suitable addressable interface modules as indicated or as required for connection to conventional (non-addressable) devices and other components that provide a dry closure output.

K. Notification Appliances:
   1. Combination Horn/Strobes: Provide 5% extra devices or quantity below, whichever is larger.
      a. Provide 1 extra.
   2. Combination Speaker/Strobes: Provide 5% extra devices or quantity below, whichever is larger.
      a. Provide 1 extra.

L. Surge Protection: In accordance with IEEE C62.41.2 category B combination waveform and NFPA 70; except for optical fiber conductors.

M. Locks and Keys: Deliver keys to Nanuet Union Free School District.

N. Instruction Charts: Printed instruction chart for operators, showing steps to be taken when a signal is received (normal, alarm, supervisory, and trouble); easily readable from normal operator's station.
   1. Frame: Stainless steel or aluminum with polycarbonate or glass cover.
   2. Provide one for each control unit where operations are to be performed.
   3. Obtain approval of Nanuet Union Free School District prior to mounting; mount in location acceptable to Nanuet Union Free School District.
   4. Provide extra copy with operation and maintenance data submittal.

PART 3 EXECUTION

2.1 INSTALLATION

A. Install in accordance with applicable codes, NFPA 72, NFPA 70, and Contract Documents.

B. Conceal all wiring, conduit, boxes, and supports where installed in finished areas.

C. Obtain Nanuet Union Free School District's approval of locations of devices, before installation.

D. Install instruction cards and labels.

2.2 INSPECTION AND TESTING FOR COMPLETION

A. Notify Nanuet Union Free School District 7 days prior to beginning completion inspections and tests.

B. Notify authorities having jurisdiction and comply with their requirements for scheduling inspections and tests and for observation by their personnel.

C. Provide the services of the installer's supervisor or person with equivalent qualifications to supervise inspection and testing, correction, and adjustments.

D. Prepare for testing by ensuring that all work is complete and correct; perform preliminary tests as required.

E. Provide all tools, software, and supplies required to accomplish inspection and testing.

F. Perform inspection and testing in accordance with NFPA 72 and requirements of local authorities; document each inspection and test.

G. Correct defective work, adjust for proper operation, and retest until entire system complies with Contract Documents.

2.3 CLOSEOUT

A. Closeout Demonstration: Demonstrate proper operation of all functions to Nanuet Union Free School District.
   1. Be prepared to conduct any of the required tests.
   2. Have at least one copy of operation and maintenance data, preliminary copy of project record drawings, input/output matrix, and operator instruction chart(s) available during demonstration.
   3. Have authorized technical representative of control unit manufacturer present during demonstration.
   4. Demonstration may be combined with inspection and testing required by authority having jurisdiction; notify authority having jurisdiction in time to schedule demonstration.
   5. Repeat demonstration until successful.

B. Substantial Completion of the project cannot be achieved until inspection and testing is successful and:
   1. Approved operating and maintenance data has been delivered.
   2. All aspects of operation have been demonstrated to Nanuet Union Free School District.
   3. Final acceptance of the fire alarm system has been given by authorities having jurisdiction.

END OF SECTION

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SECTION 31 10 00 – SITE CLEARING

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes

1. Protecting existing trees and vegetation to remain.
2. Removal of trees, shrubs, designated plant life and vegetation.
3. Removal of topsoil and subsoil, rough grading and site contouring.
4. Clearing and grubbing.
5. Removal of above and below grade improvements (including utilities) and surface debris.

1.2 SUBMITTALS

A. Pre-Construction photographs sufficiently detailed, of existing conditions of trees, adjoining construction, and site improvements. Submit before work begins.

B. Submit plan indicating proposed trees to be removed or trimmed to District and Construction Manager for review prior to commencement of work.

1.3 RELATED WORK SPECIFIED ELSEWHERE

A. Contract Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

B. Section 02 33 13: Underground Utility Locator Services

C. Section 31 20 00: Earth Moving

D. Section 31 25 00: Erosion and Sedimentation Controls

1.4 QUALITY ASSURANCE

A. Comply with hauling and disposal regulations of authorities having jurisdiction.

1.5 DEFINITIONS

A. Topsoil: Natural or cultivated surface-soil layer containing organic matter and sand, silt, and clay particles; friable, pervious, and black or a darker shade of brown, gray, or red than underlying subsoil; reasonably free of subsoil, clay lumps, gravel, and other objects more than 2 inches in diameter; and free of subsoil and weeds, roots, toxic materials, or other non-soil.

B. Clearing: Removal of trees, shrubs, bushes, and other organic matter found at or above original ground level.

C. Remove: Remove existing items from site and legally dispose of them off-site, unless indicated to be removed and reinstalled. Removal shall be completed daily.

D. Existing to Remain: Existing items that are not to be removed and that are not otherwise indicated to be removed or removed and reinstalled.

1.6 PROJECT CONDITIONS

A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during site-clearing operations.

1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from the District and authorities having jurisdiction.

2. Provide alternate routes around closed or obstructed traffic ways if required by authorities having jurisdiction.

3. Provide clear and appropriate signage for alternate routes and proper notice to people.

B. Maintain access to existing adjacent areas of the building, walkways, roads, and other adjacent occupied or used facilities.

1. Do not close or obstruct adjacent areas of the building, walkways, roads, or other occupied or used facilities without agreement with the District and written permission from authorities having jurisdiction.

C. Utility Locator Service: See Specification Section 023313 Underground Utility Locator Services.

D. Hazardous Materials:

1. If materials suspected of containing hazardous materials are encountered, do not disturb; immediately notify Architect and District. Hazardous materials shall be removed as per the characterization of hazard and disposed of in accordance with NYSDEC requirements.

E. Storage of removed items or materials on-site will not be permitted, unless indicated to be removed and stockpiled on site.

F. Utility Service: Maintain existing utilities in service and protect them against damage during selective demolition operations.

G. Do not commence site clearing and demolition operations until temporary erosion and sedimentation control measures are in place.

1.7 MATERIAL OWNERSHIP

A. Except for items or materials indicated to be stockpiled, reused, reinstalled, or otherwise indicated to remain on the District's property, demolished materials shall become Contractor's property and shall be removed from Project site.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 PREPARATION AND PROTECTION

A. Protect and maintain benchmarks and survey control points from disturbance during construction. Damaged or lost benchmark, monuments and survey control points shall be replaced by a licensed New York State Registered Land Surveyor at the Contractor's expense.

B. Survey existing conditions and correlate with requirements indicated to determine extent of selective demolition required.

C. Protect existing site improvements to remain from damage during construction.

1. Restore damaged improvements to their original condition, as acceptable to District.

D. Identify trees to be removed and trimmed and confirm with District and Landscape Architect prior to any demolition.

E. When unanticipated conflicts with intended function or design are encountered, investigate and measure the nature and extent of conflict. Promptly submit a written report to Engineer.

F. Site Access and Temporary Controls: Conduct selective demolition and debris-removal operations to ensure minimum interference with adjacent areas of the building, roads, streets, walks, walkways, and other adjacent occupied and used facilities.

1. Do not close or obstruct adjacent areas of the building, streets, walks, walkways, or other adjacent occupied or used facilities without permission from District and authorities having jurisdiction. Provide alternate routes around closed or obstructed traffic ways if required by governing regulations.

2. Erect temporary protection, such as walks, ramps, fences, and railings where required to permit safe passage of people and vehicles.

3. Protect existing building elements, appurtenances, and items to remain.

G. Identify and protect existing utilities to remain.

H. Interrupting Existing Utilities: Do not interrupt utilities serving facilities occupied by District or others, unless permitted under the following conditions and then only after arranging to provide temporary utility services according to requirements indicated:

1. Notify Engineer not less than two days in advance of proposed utility interruptions.

2. Do not proceed with utility interruptions without Engineer's written permission.

I. Tree Protection: Erect and maintain a temporary fence around drip line of individual trees or around perimeter drip line of groups of trees to remain. Remove fence when construction is complete.

1. Do not store construction materials, debris, or excavated material within drip line of remaining trees.

2. Do not permit vehicles, equipment, or foot traffic within drip line of remaining trees.

3. Do not excavate within drip line of trees, unless otherwise indicated.

J. Temporary Facilities: Provide temporary barricades and other protection required to prevent injury to people, damage to buildings and facilities to remain.

1. Provide protection to ensure safe passage of people around selective demolition area.

K. Temporary Shoring: Provide and maintain shoring, bracing, or structural support to preserve stability and prevent movement, settlement, or collapse of construction to remain, and to prevent unexpected or uncontrolled movement or collapse of construction being demolished.

1. Strengthen or add new supports when required during progress of selective demolition.

3.2 CLEARING AND GRUBBING

A. Install erosion control measures as indicated on the Contract Drawings prior to commencement of clearing and grubbing. Repair and/or replace erosion control devices immediately if damaged during clearing and grubbing.

B. Remove obstructions, grass, and other vegetation to permit installation of new construction. Removal includes digging out stumps and obstructions and grubbing roots.

C. Do not remove trees, shrubs, and other vegetation unless indicated to be removed.

1. Repair or replace trees, shrubs, and other vegetation indicated to remain or be relocated that are damaged by construction operations.

D. Completely remove stumps, roots, obstructions, and debris extending to a depth of 18 inches below exposed subgrade.

E. Carefully grub within drip line of remaining trees.

F. Fill depressions caused by clearing and grubbing operations with satisfactory soil material, unless further excavation or earthwork is indicated.

1. Place fill material in horizontal layers not exceeding 8-inch loose depth and compact each layer to a density equal to adjacent original ground.

3.3 REMOVAL AND DISPOSAL

A. Removal:

1. Remove surplus soil material, unsuitable topsoil, obstructions, demolished materials, and waste materials, including trash and debris, and legally dispose of them off District's property.

B. Burning: Do not burn demolished materials.

C. Disposal: Transport demolished materials off District's property and legally dispose of them.

D. Dumping: No dumping shall be allowed in any stream, corridor, wetlands, surface waters, or at unspecified locations or at locations not approved by the Engineer or regulatory agencies.

3.4 SITE IMPROVEMENTS

A. Remove existing above- and below-grade improvements as indicated and as necessary to facilitate new construction.

3.5 ROUGH GRADING

A. Identify required lines, levels, contours, and datum.

B. Identify known underground, above ground, and aerial utilities. Stake and flag locations.

C. Notify utility companies to paint out utility locations.

D. Excavate topsoil and subsoil from areas to be further excavated, re-landscaped, or re-graded.

E. Stockpile topsoil and subsoil in designated area(s).

END OF SECTION 31 10 00

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SECTION 31 20 00 – EARTH MOVING

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes

1. Preparing subgrades for structures and grasses.

2. Excavating and backfilling trenches for utilities and structures.

1.2 SUBMITTALS

A. Material Test Reports: Classification according to ASTM D 2487, laboratory compaction curve according to ASTM D 1557 and certified gradation analysis according to ASTM C 136 for each soil material proposed for fill and backfill.

B. Product Data: Provide data on any geotextiles and warning tapes used.

C. Preexcavation Photographs or Videotape: Show existing conditions of adjoining construction and site improvements, including finish surfaces that might be misconstrued as damage caused by earth-moving operations. Submit before earth moving begins.

1.3 RELATED WORK SPECIFIED ELSEWHERE

A. Contract Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

B. Section 31 20 00: Site Clearing

C. Section 31 23 19: Dewatering

D. Section 31 25 00: Erosion and Sedimentation Controls

E. Section 33 41 00: Storm Utility Drainage Piping

F. Section 33 49 00: Storm Drainage Structures

1.4 DEFINITIONS

A. Backfill: Soil material used to fill an excavation.

1. Initial Backfill: Backfill placed beside and over pipe in a trench, including haunches to support sides of pipe.

2. Final Backfill: Backfill placed over initial backfill to fill a trench.

B. Base Course: Aggregate layer placed between the subbase course and hot-mix asphalt paving.

C. Bedding Course: Aggregate layer placed over the excavated subgrade in a trench before laying pipe.

D. Borrow Soil: Satisfactory soil imported from off-site for use as fill or backfill.

E. Excavation: Removal of material encountered above subgrade elevations and to lines and dimensions indicated.

F. Fill: Soil materials used to raise existing grades.

G. Earth Excavation: The removal of all surface and subsurface material not classified as rock (as defined below).

H. Rock: Limestone, sandstone, shale, granite, and similar material in solid beds or masses in its original or stratified position which can be removed only by blasting operations, drilling, wedging, or use of pneumatic tools, and boulders with a volume greater than 1.0 cubic yard. Concrete building foundations and concrete slabs, not indicated, with a volume greater than 1.0 cubic yard shall be classified as rock.

1. Materials which can be loosened with a pick or backhoe, frozen materials, soft laminated shale or hardpan, pavements, curbs, and similar materials shall be classified as earth excavation.

I. Subgrade Surface: Surface upon which pavements, pads, walks, curbs, or topsoil is placed.

J. Subbase Surface: Surface above the subgrade surface.

K. Maximum Density: The dry unit weight in pounds per cubic foot of the soil at "Optimum Moisture Content" when determined by ASTM D 1557 (Method C), and ASTM D 6938 as modified by NYSDOT in Manual GTM-10.

L. Lawn Areas: Areas not covered by structures, walks, roads, paving, or parking.

M. Unauthorized Excavation: The removal of material below required elevations indicated on the Contract Drawings or beyond lateral dimensions indicated or specified without specific written direction by the Engineer.

1.5 PROJECT CONDITIONS

A. Traffic: Minimize interference with adjoining roads, streets, walks, and other adjacent occupied or used facilities during earth-moving operations.

1. Do not close or obstruct streets, walks, or other adjacent occupied or used facilities without permission from Owner and authorities having jurisdiction.

2. Provide alternate routes around closed or obstructed traffic ways if required by Owner or authorities having jurisdiction.

B. Existing Utilities: Locate existing underground utilities in area of Work before starting earthwork operations. Where utilities are to remain in place, provide adequate means of protection during earthwork operations.

1. If uncharted, or incorrectly charted, piping or other utilities are encountered during excavation, consult utility owner and Engineer immediately for directions. Cooperate with Owner, and

public and private utility companies to keep their respective services and facilities in operation. Repair damaged utilities as required by utility owner.

2. Do not interrupt existing utilities serving facilities occupied by Owner or others, during occupied hours, except when permitted in writing by Engineer and then only after acceptable temporary utility services have been provided.

3. Provide minimum of 48-hour notice to Engineer and receive written notice to proceed before interrupting any utility.

4. Demolish and completely remove from site existing underground utilities indicated to be removed. Coordinate with utility companies for shutoff of services if lines are active.

C. Cold Weather Requirements:

1. Do not backfill with any frozen soil materials.

1.6 QUALITY ASSURANCE

A. Geotechnical Testing Agency Qualifications: Qualified according to ASTM E 329 and ASTM D 3740 for testing indicated.

B. Routine testing of existing soils and compacted material for compliance with these Specifications shall be performed by a testing agency acceptable to Engineer.

C. Compacted material that does not meet density requirements shall be removed and/or re-compacted, and retested.

1.7 DELIVERY AND STORAGE

A. Deliver and store materials in a manner to prevent contamination or segregation.

1.8 PROTECTION

A. Shoring and Sheeting: Provide shoring and bracing as required by OSHA, 29 CFR Part 1926 (Subpart P). Contractor is responsible for obtaining design of support of excavation by a licensed Engineer in the State of NY, as required.

B. Dewatering: See Specification Section 31 23 19.

C. Protection and Restoration of Surfaces: Protect newly graded areas from traffic, erosion, and settlements. Repair and reestablish damaged or eroded slopes, elevations or grades and restore surface construction prior to acceptance. Protect existing streams, ditches and storm drain inlets from water-borne soil by means of straw bale dikes. Conduct work in accordance with NYS DEC requirements. Refer to Section 312500: Erosion and Sedimentation Control for more information.

1.9 PROTECTION OF PROPERTY

A. Protect structures, utilities, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.

B. Perform excavation by hand within dripline of large trees to remain. Protect root systems from damage or dryout to the greatest extent possible. Maintain moist condition for root system and cover exposed roots with moistened burlap.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Provide borrow soil materials when sufficient satisfactory soil materials are not available from excavations.

B. Satisfactory Soils: Soil Classification Groups GW, GP, GM, SW, SP, and SM according to ASTM D 2487, or a combination of these groups; free of rock or gravel larger than 3 inches in any dimension, debris, waste, frozen materials, vegetation, and other deleterious matter.

C. Unsatisfactory Soils: Soil Classification Groups GC, SC, CL, ML, OL, CH, MH, OH, and PT according to ASTM D 2487, or a combination of these groups.

1. Unsatisfactory soils also include satisfactory soils not maintained within 2 percent of optimum moisture content at time of compaction

D. Suitable Material (Fill and Backfill for Landscaped Areas): Material consisting of mineral soil (inorganic), blasted or broken rock and similar materials of natural or man-made origin, including mixtures thereof. Maximum particle size will not exceed 1/3 of the specified layer thickness prior to compaction. NOTE: Material containing cinders, industrial waste, sludge, building rubble, land fill, muck, and peat will be considered unsuitable for fill and backfill. Topsoil and organic silt may be used as suitable material in landscaped areas provided it is placed in the top layer of the subgrade surface.

E. NYSDOT Select Granular Fill: Material shall be a sand and gravel mixture substantially free from silt, clay, shale. The material shall not contain organic matter, frozen sections, slag, cinders, ashes, rubbish, other foreign material or deleterious matters. This soil material shall be used as a general fill where as required on the Contract Drawings. The material shall be approved by the Engineer and conform to the following gradation:

NYSDOT Select Granular Fill U.S. Sieve Designation	% by weight passing square opening
4 inch	100%
No. 40	0% - 70%
No. 200	0% - 15%

1. Magnesium Sulfate Soundness Test: Materials exceeding 30% will be rejected.

F. Pipe Bedding and Pipe Zone Backfill: Material shall be a sand or a mixture of crushed stone and gravel, free of soft, nondurable particles, elongated particles or other deleterious matters. Material shall not contain organic matter, frozen sections, slag, cinders, ashes, rubbish, or other foreign material. The material shall be approved by the Engineer and conform to the following gradation:

Sand U.S. Sieve Designation	% by weight passing square opening
3/4 inch	100%
No. 40	0% - 70%

Sand U.S. Sieve Designation	% by weight passing square opening
No. 200	0% - 10%

G. Trench Backfill: Material shall be a natural run-of-bank (ROB) or processed gravel, free of soft, nondurable particles, elongated particles or other deleterious matters. Material shall not contain organic matter, frozen sections, slag, cinders, ashes, rubbish, or other foreign material. The material shall be approved by the Engineer and conform to the following gradation:

Processed Gravel U.S. Sieve Designation	% by weight passing square opening
4 inch	100%
No. 40	0% - 70%
No. 200	0% - 10%

H. NYSDOT No. 2 Crushed Stone per NYSDOT Standard Specification Table 703-4: Crushed stone shall be washed. Material shall be substantially free from silt, clay and organic matter. It shall not contain frozen sections, slag, cinders, ashes, rubbish, other foreign material and deleterious matters. The material shall be approved by the Engineer and conform to the following gradation:

U.S. Sieve Designation	% by weight passing square opening
1 1/2 inch	100%
1 inch	90% - 100%
1/2 inch	0% - 15%
No. 200	0% - 1%

2.2 GEOTEXTILES:

A. Separation Fabric: Mirafi, Inc. 140N, or approved equivalent.

PART 3 - EXECUTION

3.1 PREPARATION

A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earth moving operations.

B. Protect and maintain erosion and sedimentation controls during earth moving operations.

C. Protect subgrades and foundation soils from freezing temperatures and frost. Remove temporary protection before placing subsequent materials.

3.2 EXCAVATION, GENERAL

A. Unclassified Excavation: Excavate to subgrade elevations regardless of the character of surface and subsurface conditions encountered. Unclassified excavated materials may include rippable rock, soil materials, and obstructions which can be removed with a Late Model, Track-mounted

hydraulic excavator, equipped with a 42" wide short tip radius rock bucket, rated not less than 150hp flywheel power. No changes in the Contract Sum or the Contract Time will be authorized for rock excavation or removal of obstructions defined as unclassified excavation.

1. If excavated materials intended for fill and backfill include unsatisfactory soil materials and rock, replace with satisfactory soil materials.

2. Earth excavation includes excavating pavements and obstructions visible on surface; underground structures, utilities, and other items indicated to be removed; together with soil, boulders, and other materials not classified as rock.

B. Classified Excavation: Excavate to subgrade elevations. Material to be excavated will be classified as rock. Do not excavate rock until it has been classified, measured and examined by Engineer or Construction Manager. The Contract Sum will be adjusted for rock excavation according to unit prices included in the Contract Documents. Changes in the Contract Time may be authorized for rock excavation.

3.3 EXCAVATION FOR STRUCTURES

A. Excavate surfaces under structures to indicated lines, cross sections, elevations, and subgrades.

3.4 EXCAVATION FOR UTILITY TRENCHES

A. Excavate trenches to indicated gradients, lines, depths, and elevations.

1. Beyond building perimeter, excavate trenches to allow installation of top of pipe below frost line, or as shown in the Contract Documents.

B. Excavate trenches to uniform widths to provide the following clearance on each side of pipe or conduit. Excavate trench walls vertically from trench bottom to 12 inches higher than top of pipe or conduit unless otherwise indicated.

1. Clearance: 12 inches each side of pipe or conduit.

C. Trench Bottoms: Excavate and shape trench bottoms to provide uniform bearing and support of pipes and conduit. Shape subgrade to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits. Remove projecting stones and sharp objects along trench subgrade.

1. For pipes and conduit less than 6 inches in nominal diameter, hand-excavate trench bottoms and support pipe and conduit on an undisturbed subgrade.

2. For pipes and conduit 6 inches or larger in nominal diameter, shape bottom of trench to support bottom 90 degrees of pipe or conduit circumference. Fill depressions with tamped sand backfill.

3. For flat-bottomed, multiple-duct conduit units, hand-excavate trench bottoms and support conduit on an undisturbed subgrade.

4. Excavate trenches 6 inches deeper than bottom of pipe and conduit elevations, or as shown in the Contract Drawings, to allow for bedding course. Hand-excavate deeper for bells of pipe

3.5 SUBGRADE INSPECTION

A. Notify Engineer or Inspector when excavations have reached required subgrade.

B. If Engineer or Inspector determines that unsatisfactory soil is present, continue excavation and replace with compacted backfill or fill material as directed.

C. Reconstruct subgrades damaged by freezing temperatures, frost, rain, accumulated water, or construction activities, as directed by Engineer, without additional compensation.

3.6 UNAUTHORIZED EXCAVATION

A. Fill unauthorized excavation under foundations or wall footings by extending bottom elevation of concrete foundation or footing to excavation bottom, without altering top elevation. Lean concrete fill, with 28-day compressive strength of 2500 psi, may be used when approved by Engineer.

1. Fill unauthorized excavations under other construction, pipe, or conduit as directed by Engineer.

3.7 STORAGE OF SOIL MATERIALS

A. Stockpile borrow soil materials and excavated satisfactory soil materials without intermixing. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.

1. Stockpile soil materials away from edge of excavations. Do not store within drip line of remaining trees.

2. Maintain erosion control measures as described in Section 312500: Erosion and Sedimentation Controls.

3.8 BACKFILL

A. Place and compact backfill in excavations promptly, but not before completing the following:

1. Construction below finish grade including, where applicable, subdrainage, dampproofing, waterproofing, and perimeter insulation.

2. Surveying locations of underground utilities for Record Documents.

3. Testing and inspecting underground utilities.

4. Removing concrete formwork.

5. Removing trash and debris.

6. Removing temporary shoring and bracing, and sheeting as specified by pertinent OSHA regulations and in conformance with any approved SOE designs.

7. Installing permanent or temporary horizontal bracing on horizontally supported walls.

B. Place backfill on subgrades free of mud, frost, snow, or ice.

3.9 UTILITY TRENCH BACKFILL

A. Place backfill on subgrades free of mud, frost, snow, or ice.

B. Place and compact pipe bedding course on trench bottoms and where indicated. Shape pipe bedding course to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits.

C. Backfill voids with satisfactory soil while removing shoring and bracing.

D. Place and compact initial pipe zone backfill, free of particles 3/4 inch or larger, to a height of 12 inches over the pipe or conduit.

1. Carefully compact initial backfill under pipe haunches and compact evenly up on both sides and along the full length of piping or conduit to avoid damage or displacement of piping or conduit. Coordinate backfilling with utilities testing.

E. Place and compact final trench backfill to final subgrade elevation.

F. Install detectable warning tape directly above utilities, 12 inches below finished grade.

3.10 SOIL FILL

A. Plow, scarify, bench, or break up sloped surfaces steeper than 1 vertical to 4 horizontal so fill material will bond with existing material.

B. Place and compact fill material in layers to required elevations as indicated on plans:

1. Under grass and planted areas, use satisfactory soil material.

2. To fill over excavations at structures, use select granular fill soil material.

C. Place soil fill on subgrades free of mud, frost, snow, or ice.

3.11 SOIL MOISTURE CONTROL

A. Uniformly moisten or aerate subgrade and each subsequent fill or backfill soil layer before compaction to within 2 percent of optimum moisture content.

1. Do not place backfill or fill soil material on surfaces that are muddy, frozen, or contain frost or ice.

2. Remove and replace, or scarify and air dry, otherwise satisfactory soil material that exceeds optimum moisture content by 2 percent and is too wet to compact to specified dry unit weight.

3.12 COMPACTION OF SOIL BACKFILLS AND FILLS

A. Place backfill and fill soil materials in layers not more than 8 inches in loose depth for material compacted by heavy compaction equipment, and not more than 6 inches in loose depth for material compacted by hand-operated tampers.

B. Place backfill and fill soil materials evenly on all sides of structures to required elevations, and uniformly along the full length of each structure.

C. Compact each layer of fill and backfill for the following area classifications to the percentage of maximum density specified below and at a moisture content suitable to obtain the required densities, but at not less than 3 percent drier or more than 2 percent wetter than the optimum content as determined by ASTM D1557 (Modified Proctor), at the following test intervals.

1. Landscaped Areas: 90 percent, (1) test per lift for every 10,000 sf.

2. Pipe Bedding: 95 percent, (1) test per lift for every 100 linear foot of pipe.

3. Pipe Zones: 95 percent, refer to appropriate area for testing frequency.

3.13 DEWATERING

A. See Specification Section 31 23 19.

3.14 EXPLOSIVES

A. Explosives: Do not use explosives.

3.15 GRADING

A. General: Uniformly grade areas to a smooth surface, free of irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.

1. Provide a smooth transition between adjacent existing grades and new grades.

2. Cut out soft spots, fill low spots, and trim high spots to comply with required surface tolerances.

B. Site Rough Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to required elevations within the following tolerances:

1. Grass or Unpaved Areas: Plus or minus 1 inch.

3.16 FIELD QUALITY CONTROL

A. Special Inspections: The Owner shall engage a qualified special inspector shall perform the following special inspections:

1. Determine prior to placement of fill that site has been prepared in compliance with requirements.

2. Determine that fill material and maximum lift thickness comply with requirements.

3. Determine, at the required frequency, that in-place density of compacted fill complies with requirements.

B. Testing Agency: A qualified geotechnical engineering testing agency (in accordance with ASTM E 329 and ASTM D 3740) shall perform tests and inspections.

C. Allow testing agency to inspect and test subgrades and each fill or backfill layer. Proceed with subsequent earth moving only after test results for previously completed work comply with requirements.

D. When testing agency reports that subgrades, fills, or backfills have not achieved degree of compaction specified, scarify and moisten or aerate, or remove and replace soil materials to depth required; recompact and retest until specified compaction is obtained.

3.17 PROTECTION

A. Protecting Graded Areas: Protect newly graded areas from traffic, freezing, and erosion. Keep free of trash and debris.

B. Repair and reestablish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or where they lose compaction due to subsequent construction operations or weather conditions.

1. Scarify or remove and replace soil material to depth as directed by Engineer; reshape and recompact.

C. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.

1. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to greatest extent possible.

3.18 DISPOSAL OF SURPLUS AND WASTE MATERIALS

A. Transport surplus satisfactory soil to designated storage areas on Owner's property. Stockpile or spread soil as directed by Engineer.

1. Remove waste materials, including unsatisfactory soil, trash, and debris, and legally dispose of them off Owner's property. Comply with hauling and disposal regulations of authorities having jurisdiction.

END OF SECTION 31 20 00

SECTION 31 23 19 – DEWATERING

PART 1 - GENERAL

1.1 SUMMARY

A. Section Includes:

1. Construction dewatering.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Contract Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

B. Section 31 20 00: Earth Moving

C. Section 31 25 00: Erosion and Sediment Control

1.3 PREINSTALLATION MEETINGS

A. Preinstallation Conference: Conduct conference at Project site.

1.4 ACTION SUBMITTALS

A. Shop Drawings: For dewatering system, prepared by or under the supervision of a qualified professional engineer.

B. Dewatering Plan: Submit to Engineer for review and approval.

1.5 INFORMATIONAL SUBMITTALS

A. Field Quality-Control Submittals:

1. Field quality-control reports.

1.6 QUALITY ASSURANCE

A. Qualifications:

1. Installer: An experienced installer that has specialized in design of dewatering systems and dewatering work.

2. Land Surveyor: A professional land surveyor who is legally qualified to practice in state where Project is located.

1.7 FIELD CONDITIONS

A. Survey Work: Engage a qualified land surveyor or professional engineer to survey adjacent existing buildings, structures, and site improvements; establish exact elevations at fixed points to act as benchmarks. Clearly identify benchmarks and record existing elevations.

PART 2 - PRODUCTS

2.1 PERFORMANCE REQUIREMENTS

A. Dewatering Performance: Design, furnish, install, test, operate, monitor, and maintain dewatering system of sufficient scope, size, and capacity to control hydrostatic pressures and to lower, control, remove, and dispose of groundwater and permit excavation and construction to proceed on dry, stable subgrades.

B. Regulatory Requirements: Comply with governing EPA notification regulations before beginning dewatering. Comply with water- and debris-disposal regulations of authorities having jurisdiction.

PART 3 - EXECUTION

3.1 PREPARATION

A. Provide temporary grading to facilitate dewatering and control of surface water.

B. Protect and maintain temporary erosion and sedimentation controls, which are specified on the drawings, during dewatering operations.

3.2 INSTALLATION

A. Install dewatering system utilizing wells, well points, or similar methods complete with pump equipment, standby power and pumps, filter material gradation, valves, appurtenances, water disposal, and surface-water controls.

1. Space well points or wells at intervals required to provide sufficient dewatering.

2. Use filters or other means to prevent pumping of fine sands or silts from the subsurface.

B. Place dewatering system into operation to lower water to specified levels before excavating below groundwater level.

C. Provide sumps, sedimentation tanks, and other flow-control devices as required by authorities having jurisdiction.

D. Provide standby equipment on-site, installed and available for immediate operation, to maintain dewatering on continuous basis if any part of system becomes inadequate or fails.

E. Stone used within the sump pits shall be washed clean stone.

3.3 OPERATION

A. Water, resulting from dewatering operations that will reduce the quality of receiving waters shall not be directly discharged.

1. The Contractor shall provide, install and maintain dewatering bags, as deemed necessary to control sediment deposits at critical environmental areas.

a. Dewatering bags shall be placed on stabilized areas over grass.

b. Discharge hose from pump shall be inserted a minimum of six inches and tightly secured with attached strap to prevent water from flowing out of the unit without being filtered.

c. Water from dewatering operations shall be treated to eliminate the discharge of sediment and other pollutants to streams and watercourses.

d. The unit shall be replaced when it is half full of sediment or when the sediment has reduced the flow rate of the pump discharge to an impractical rate. Remove and dispose of sediment and dewatering bag off-site.

B. Operate system continuously until drains, sewers, and structures have been constructed and fill materials have been placed or until dewatering is no longer required.

C. Operate system to lower and control groundwater to permit excavation, construction of structures, and placement of fill materials on dry subgrades. Drain water-bearing strata above and below bottom of foundations, drains, sewers, and other excavations.

1. Do not permit open-sump pumping that leads to loss of fines, soil piping, subgrade softening, and slope instability.

2. Reduce hydrostatic head in water-bearing strata below subgrade elevations of foundations, drains, sewers, and other excavations.

3. Maintain piezometric water level a minimum of 24 inches below bottom of excavation.

D. Remove dewatering system from Project site on completion of dewatering. Plug or fill well holes with sand or cut off and cap wells a minimum of 36 inches below overlying construction.

END OF SECTION 31 23 19

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SECTION 31 25 00 – EROSION AND SEDIMENTATION CONTROLS

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes:

1. Furnish, install, inspect, maintain, and remove soil erosion and sediment control measures during construction as shown on the Contract Documents prepared for this project.

2. Minimize the potential short-term adverse environmental impacts associated with construction activity in environmentally sensitive areas.

3. Assure the quantity and quality of stormwater runoff is not substantially altered due to construction activities.

4. Stabilize slopes and protect offsite areas by the installation and maintenance of stabilization and erosion control measures.

5. Based on the project parameters, it is anticipated that coverage under the NYSDEC SPDES General Permit for Stormwater Discharge from Construction Activities will not be required.

1.2 SUBMITTALS

A. Product Data: Manufacturer’s catalog cuts, specifications and installation instructions.

B. Contingency Action Plan for prompt remedial action in the event spillage of petroleum products or other pollutants should occur. Contingency Action Plan shall be submitted to the Engineer for acceptance prior to the start of construction.

C. Name and location of all material suppliers.

D. Certificate of compliance with the standards specified above for each source of each material.

E. List of disposal sites for waste and unsuitable materials and all required permits for use of those sites.

1.3 RELATED WORK SPECIFIED ELSEWHERE

A. Contract Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

B. Section 31 10 00: Site Clearing

C. Section 31 20 00: Earth Moving

1.4 REFERENCE STANDARDS

A. New York Standards and Specifications for Erosion and Sediment Control, NYSDEC, latest edition.

B. NYSDEC: New York State Stormwater Management Design Manual, latest edition.

C. 6 NYCRR Parts 611 – 613 and all additions.

D. OSHA 40 CFR Part 258 and all additions. New York State: Standards and Specifications for Erosion and Sediment Control, latest edition.

1.5 DEFINITIONS

A. Critical Environmental Areas: Those areas, conditions, or features which, when disturbed by construction activities, create an adverse environmental impact. These areas include, but are not necessarily limited to, densely wooded areas, swales, wetland areas, streams, brooks, ocean, and steep slopes.

B. Stabilized Construction Entrance: A stabilized pad of aggregate underlain with geotextile where traffic enters a construction site to reduce or eliminate tracking of sediment to public roads.

C. Dust Control: Prevent surface and air movement of dust from disturbed soil surfaces.

D. Silt fence: A barrier of geo-textile fabric installed on contours across the slope to intercept runoff by reducing velocity. Replace after 1 year.

E. Storm Drain Inlet Protection: A semi-permeable barrier installed around storm inlets to prevent sediment from entering a storm drainage system.

1.6 ACCIDENT PREVENTION MEASURES

A. All preventative measures shall be taken to avoid spillage of pollutants and the release of sediment.

B. Every precaution shall be taken to prevent the possibility of accidentally starting fires. Construction programs should include fire prevention planning, training of personnel in firefighting, and a fire prevention inspection program.

C. Pollutant control, erosion control devices, and sedimentation control devices shall be inspected as outlined on the Contract Drawings and necessary repairs made accordingly.

D. Additional controls shall be implemented if field conditions warrant, and/or as directed.

1.7 SUMMARY

A. Furnish all labor, equipment and materials required to complete all work associated with providing erosion and sedimentation control grading, site grading and preparation of pavement and structure subgrade, and other related and incidental work as required to complete the work on the Contract Drawings and specified herein.

B. All excavations shall be in conformity with the lines, grades, and cross sections shown on the Drawings or established by the Engineer.

C. The Contractor shall conduct all construction activities in such a manner as to minimize erosion of disturbed areas and off-site sedimentation.

D. All work under this Contract shall be done in conformance with and subject to the limitations of the New York Standards and Specifications for Erosion and Sedimentation Control.

E. The following excerpts from the regulations are particularly important:

1. ...slopes left exposed will, within 21 working days of completion of any phase of grading, be planted or otherwise provided with ground cover, devices, or structures sufficient to restrain erosion...

2. ...a ground cover sufficient to restrain erosion must be planted or otherwise provided within 21 working days on that portion of the tract (disturbed area) upon which further active construction is not being undertaken...

F. Due to the nature of the work required by this Contract, it is anticipated that the location and nature of the erosion and sedimentation control devices may be adjusted on several occasions to reflect the current phase of construction. Erosion and sedimentation control devices shall be established prior to or concurrent with the clearing operations in a given area. Where such practice is not feasible, the erosion and sedimentation control device(s) shall be established immediately following completion of the clearing operation.

G. The construction schedule adopted by the Contractor will impact the placement and need for specific devices required for the control of erosion. The Contractor shall develop and implement such additional techniques as may be required to minimize erosion and off-site sedimentation. The location and extent of erosion and sedimentation control devices shall be revised at each phase of construction that results in a change in either the quantity or direction of surface runoff from constructed areas. All deviations from the erosion and sedimentation control provisions shown on the Contract Drawings shall have the prior acceptance of the Engineer.

H. Erosion and sedimentation controls applicable to this project shall include but not be limited to the following items of work:

1. Erect silt fence at locations shown on the Contract Drawings and at other locations indicated by the Engineer.

2. Provide temporary sedimentation basins or dewatering bags for the settling of water pumped from the excavations or intercepted by drainage ditches for keeping water out of the excavations or to protect existing structures. The Contractor shall remove trapped sediments from the basins or tanks as necessary to maintain their effectiveness or as indicated by the Engineer. Sediment material removed from the basins shall be disposed off site by the Contractor at no additional cost to the Owner.

3. Provide temporary or permanent ground cover adequate to restrain erosion on erodible slopes or other areas that will be left un-worked for periods exceeding 21 calendar days.

4. Temporary soil stockpile

5. Dust control

6. Provide other types of erosion and sedimentation control devices at the locations shown on the Contract Drawings, or as specified herein.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Silt fence sedimentation barrier, as shown on contract drawings.

B. Filter fabric inlet protection, as shown on contract drawings.

C. Inlet protection in pavement, as shown on contract drawings.

PART 3 - EXECUTION

3.1 PREPARATION

A. All construction details outlined herein and shown on the Contract Drawings shall be implemented to insure minimum damage to the environment during construction and for the long term.

B. Prior to any construction activities, install temporary erosion and sediment control barriers or measures as indicated on the Contract Drawings.

C. Staging of Earthwork Activities: All earthwork shall be scheduled so that the smallest possible areas will be unprotected from erosion for the shortest time feasible.

D. All construction details shall meet environmental objectives and constraints specified herein, outlined in permits, or directed by the Owner to protect the natural resources within the Project Area.

E. Temporary, permanent, or unspecified alteration of the flow line of any stream or watercourse will be prohibited.

F. Vegetation adjacent to or outside of access roads or rights-of-way shall not be damaged.

G. Disposal of spoil material shall not be in any flood plain, wetland, stream, brook, or sensitive environmental area. The Contractor shall dispose of spoils within staging areas and provide sediment control barriers accordingly.

H. Contractor shall replace any tree or shrubs damaged in kind to the satisfaction of the Owner.

I. Installation of erosion and sediment control products shall be installed as per manufacturer’s specifications.

J. Vegetation shall be established to control sedimentation and erosion on slopes, long term stockpile areas, or any other erosion sensitive area.

K. No more than 1 acre shall be exposed (not stabilized) at any time during the construction process.

L. The Contractor is fully responsible for maintaining, repairing, and protecting his work throughout the Project, at no additional cost to the Owner, until the Owner accepts the Work.

3.2 CLEARING

A. See Specification Section 31 10 00.

3.3 EROSION AND SEDIMENT CONTROL

A. Prior to commencement of construction, the Engineer shall conduct an assessment of the site and certify that the appropriate erosion and sediment control structures as shown on the Contract Drawings have been adequately installed and implemented. The Contractor shall contact the Engineer once the erosion and sediment control structures have been installed.

B. The Contractor shall, at the direction of the Engineer, use necessary methods to minimize erosion within access roads, especially in areas that drain to ocean or watercourse areas.

C. Cuts, fills, and other disturbed areas will be maintained to prevent erosion until adequate vegetative/impervious cover is established.

D. Silt fence, where identified on plans, shall be installed at down gradient locations to control sediment deposits off-site at critical environmental areas. The silt fence shall be staked (unless noted otherwise), anchored and set as per manufactures specifications. The silt fence shall be inspected on a daily basis and after a rain fall event and repaired as necessary.

E. Dust control shall be controlled by the use of water, or calcium chloride application. Water application shall be applied at a rate where mud is not produced. The rate of application of the calcium chloride shall not exceed Federal, State and Local application rates or manufactures recommendations. Dust control shall be applied on adjacent public streets.

F. Paved areas within access corridors and parking areas shall be swept on a regular basis (minimum twice per week) as needed to minimize sediment and dust tracked from the Work area. Should sediment and dust be tracked off-site, Contractor shall be responsible for sweeping public streets.

G. During the final site restoration, the Contractor shall remove all sediment and debris deposited in the temporary and permanent erosion and sediment control barriers or measures including but not limited to all culverts and drainage swales, at no additional cost to the Owner.

H. When all disturbed areas are stable, all temporary erosion and sediment control measures shall be removed per the approval of the Engineer. The measures are temporary and shall be removed and the areas restored to its original condition when they are no longer required, at no additional cost to the Owner.

END OF SECTION 31 25 00

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SECTION 32 31 13 – CHAIN LINK FENCES AND GATES

PART 1 - GENERAL

1.1 SUBMITTALS

A. Product Data: Include construction details, material descriptions, dimensions of individual components and profiles, and finished for chain link fences and gates

1. Fence and gate posts, rails, and fittings.

2. Chain link fabric, reinforcements, and attachments.

3. Gates and hardware.

B. Shop Drawings: Show locations of fences, gates, posts, rails, tension wires, or other operation, hardware, and accessories. Indicate materials, dimensions, sizes, weights, and finishes of components. Include plans, gate elevations, sections, details of post anchorage, attachment, bracing, and other required installation/operational clearances.

1. For structural performance of chain-link fence and gate frameworks, including analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

C. Product certifications: For each type of chain link fence, and gate, signed by product manufacturer.

1. Strength test results for framing according to ASTM F1043.

1.2 QUALITY ASSURANCE

A. Special Warranty: Installer agrees to repair or replace components of chain link fences and gates that fail in materials or workmanship within specified warranty period.

1. Warranty Period: Five years from date of Substantial Completion.

PART 2 - PRODUCTS

2.1 CHAIN LINK FENCE FABRIC

A. General: Provide fabric in one-piece heights measured between top and bottom of outer edge of knuckle. Comply with ASTM A392, CLFMI CLF 2445, and requirements indicated below:

1. Fabric Height: As indicated on Drawings.

2. Steel Wire for Fabric: 9 gauge (0.114 in), core-wire.

a. Mesh Size: 2 inches

b. Total Weight: 6 gauge, including coating and wire.

c. Type A zinc coating.

2.2 FENCE FRAMEWORK

A. Posts and Rails: ASTM F1043 for framework, including rails, braces, and line; terminal; and corner posts. Provide members with minimum dimensions and wall thickness according to ASTM F1043 or ASTM F1083 based on the following:

1. Fence Height: As indicated on Drawings.

2. Heavy-Industrial-Strength Material: Group IA, round steel pipe, Schedule 40.

    a. End Posts: Sizes as indicated on the contract drawings.

3. Horizontal Framework Members: Intermediate, top, and bottom rails according to ASTM F1043.

4. Metallic Coating for Steel Framework:

    a. Type A zinc coating.

2.3 TENSION WIRE

A. Steel Wire: 7-gauge (0.1440-inch diameter), core-wire, tension wire according to ASTM F1664, Class 2b, over zinc-coated steel wire

B. Type A zinc coating.

2.4 SWING GATES

A. General: ASTM F900 for gate posts and single and double swing gate types.

1. Gate Leaf Width: As indicated on Contract Drawings.

2. Framework Member Sizes and Strength: Based on gate fabric height as indicated.

B. Pipe and Tubing:

1. Zinc-Coated Steel: ASTM F1043 and ASTM F1083; protective coating and finish to match fence framework.

2. Gate Posts: Round tubular steel.

3. Gate Frames and Bracing: Round tubular steel.

C. Frame Corner Construction: Welded

D. Hardware:

1. Hinges: 180-degree swing.

2. Latch: As indicated on drawing

2.5 FITTINGS

A. Provide fittings according to ASTM F626.

B. Finish:

1. Metallic Coating for Pressed Steel or Cast Iron: Not less than 1.2 oz./sq. ft. (366 g/sq. m) of zinc.

2.6 GROUT AND ANCHORING CEMENT

A. Nonshrink, Nonmetallic Grout: Factory-packaged, nonstaining, noncorrosive, nongaseous grout complying with ASTM C1107/C1107M. Provide grout, recommended in writing by manufacturer, for exterior applications.

B. Anchoring Cement: Factory-packaged, nonshrink, nonstaining, hydraulic-controlled expansion cement formulation for mixing with water at Project site to create pourable anchoring, patching, and grouting compound. Provide formulation that is resistant to erosion from water exposure without needing protection by a sealer or waterproof coating, and that is recommended in writing by manufacturer for exterior applications.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Do not begin installation before final grading is completed unless otherwise permitted by Engineer.

3.2 PREPARATION

A. Stake locations of fence lines, gates, and terminal posts. Do not exceed intervals of 500 feet or line of sight between stakes. Indicate locations of utilities, lawn sprinkler system, underground structures, benchmarks, and property monuments.

3.3 CHAIN LINK FENCE INSTALLATION

A. Install chain-link fencing according to ASTM F567 and more stringent requirements specified.

B. Post Excavation: Drill or hand-excavate holes for posts to diameters and spacings indicated, in firm, undisturbed soil.

C. Post Setting: Set posts in concrete at indicated spacing into firm, undisturbed soil.

1. Verify that posts are set plumb, aligned, and at correct height and spacing, and hold in position during setting with concrete or mechanical devices.

2. Concrete Fill: Place concrete around posts to dimensions indicated and vibrate or tamp for consolidation. Protect aboveground portion of posts from concrete splatter.

a. Exposed Concrete: Extend 2 inches above grade; shape and smooth to shed water.

D. Terminal Posts: Install terminal end and gate posts according to ASTM F567 and terminal pull posts at changes in horizontal or vertical alignment of as indicated on Drawings. For runs exceeding 500 feet, space pull posts an equal distance between corner or end posts.

E. Line Posts: Space line posts uniformly at 10 feet o.c., max.

F. Tension Wire: Install according to ASTM F567, maintaining plumb position and alignment of fence posts. Pull wire taut, without sags. Fasten fabric to tension wire with 0.120-inch-diameter hog rings of same material and finish as fabric wire, spaced a maximum of 18 inches o.c. Install tension wire in locations indicated before stretching fabric. Provide horizontal tension wire at the following locations:

1. Extended along bottom of fence fabric.

G. Chain-Link Fabric: Apply fabric to outside of enclosing framework. Leave 2-inch bottom clearance between finish grade or surface and bottom selvage unless otherwise indicated. Pull fabric taut and tie to posts, rails, and tension wires. Anchor to framework so fabric remains under tension after pulling force is released.

3.4 ADJUSTING

A. Gates: Adjust gates to operate smoothly, easily, and quietly, free of binding, warp, excessive deflection, distortion, nonalignment, misplacement, disruption, or malfunction, throughout entire operational range. Confirm that latches engage accurately and securely without forcing or binding.

END OF SECTION 32 31 13

SECTION 32 91 20 -TOPSOIL

PART 1 - GENERAL

1.1 SUBMITTALS

A. Samples:

1. Topsoil for Testing: In the presence of the Owner's Representative, take a 5 lb sample from each 1000 cu yds of topsoil to be used on the project. Submit to the Owner's Representative the laboratory test results for the organic matter, pH value, and gradation. These tests will be performed and signed by a certified soils laboratory.

1.2 QUALITY ASSURANCE

A. Topsoil used on this project shall be tested and approved before placement.

B. Secure approval before stripping topsoil from a borrow area or delivering topsoil to the project site.

PART 2 - PRODUCTS

2.1 TOPSOIL

A. Source: Provide topsoil from areas from which no topsoil has been taken previously and from areas which are producing, or have produced, fair to good yield farm crops without unusual fertilization for a minimum period of 10 years, or from arable or cultivable areas supplied with good normal drainage.

B. Provide import topsoil meeting requirements of specification from outside source, when existing topsoil is insufficient.

C. Source: Provide topsoil from existing stockpiles stripped from the project site and approved by the Owner's Representative. Existing topsoil may be re-used on site provided that the Contractor submit soil testing results and amend as necessary to meet project specifications.

D. Provide topsoil conforming to the following:

1. Original loam topsoil, well drained homogeneous texture and of uniform grade, without the admixture of subsoil material and entirely free of dense material, hardpan, sod, or any other objectionable foreign material.

2. Containing not less than 4 percent nor more than 20 percent organic matter in that portion of a sample passing a 1/4 inch sieve when determined by the wet combustion method on a sample dried at 105 degrees C.

3. Containing a pH value within the range of 6.5 to 7.5 on that portion of the sample which passes a 1/4 inch sieve.

4. Containing the following gradations:

SIEVE DESIGNATION	PERCENT PASSING
1 inch	100
1/4 inch	97 - 100
No. 200	20 - 65 (of the 1/4 inch sieve)

2.2 LIMESTONE

A. Provide ground limestone in the producer's standard bags containing not less than 90 percent of calcium and magnesium carbonates equivalent to not less than 45 percent of the mixed oxides of calcium and magnesium and conforming to the following gradations:

SIEVE DESIGNATION	PERCENT PASSING
No. 100	50 - 100
No. 20	100

PART 3 - EXECUTION

3.1 PREPARATION

A. Grub out and remove all vegetation in the area of the approved topsoil source.

3.2 SPREADING TOPSOIL

A. Perform topsoil spreading operations only during dry weather.

B. To insure a proper bond with the topsoil, harrow or otherwise loosen the subgrade to a depth of 3 inches before spreading topsoil.

C. Spread topsoil directly upon prepared subgrade to a minimum depth measuring 4 inches after natural settlement in areas to be seeded. In sodded areas the thickness of the topsoil after natural settlement plus the sod shall equal 4 inches. Smooth out unsightly variations, bumps, ridges, and depressions which will hold water. Remove stones, litter, or other objectionable material. Finished surfaces shall conform to the contour lines and elevations indicated on the drawings or fixed by the Owner's Representative.

3.3 SPREADING LIMESTONE

A. Spread ground limestone evenly over the topsoiled surface. Incorporate limestone within the top 2 inches of soil prior to finish raking.

B. Apply limestone at the following rate per 1000 sq ft of topsoil area, corresponding to the hydrogen ion concentration (Ph) shown by the soil chemical analysis:

PH	RATE (pounds)
4.5 to 5.0	150
5.0 to 5.5	100
5.5 to 6.0	50
6.0 to 6.8	25
over 6.8	0

END OF SECTION 32 91 20

SECTION 32 92 00 – SEEDING

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes:

1. Lawn.
2. Soil Amendments and Fertilizers.
3. Mulches.
4. Lawn Restoration.
5. Maintenance.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Contract Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 01 Specification Sections, apply to this Section.

B. Section 31 20 00: Earth Moving

C. Section 32 91 20: Topsoil.

1.3 SUBMITTALS

A. Product Certification: Certification signed by manufacturers certifying that their products comply with specified requirements.

1. Manufacturer’s certified analysis for standard products.
2. Analysis for other materials by a recognized laboratory made according to methods established by the Association of Official Analytical Chemists, where applicable.

B. Certification of grass seed from seed vendor stating the botanical and common name and percentage by weight of each species and variety, and percentage of purity, germination, and weed seed. Include the year of production and date of packaging.

C. Material test reports from qualified independent testing agency indicating and interpreting test results relative to compliance of the following materials with requirements indicated. Include percentages of organic matter, inorganic matter (silt, clay, and sand), deleterious material, pH, and mineral and plant-nutrient content.

1. Analysis of existing surface soil.
2. Analysis of imported topsoil.

D. Report suitability of existing surface soil and imported topsoil for lawn and plant growth. State recommended quantities of soil amendments to be added to produce satisfactory results.

1.4 DEFINITIONS

A. Weeds: Vegetative species other than specified species to be established in given area.

B. Planting Soil: Standardized topsoil; existing, native surface topsoil; existing, in-place surface soil; imported topsoil; or manufactured topsoil that is modified with soil amendments and perhaps fertilizers to produce a soil mixture best for plant growth.

1.5 CLOSEOUT SUBMITTALS

A. Before expiration of required maintenance periods, Contractor is to submit maintenance instructions recommending procedures to be performed by Owner for maintenance of landscape during an entire year.

1.6 QUALITY ASSURANCE

A. Provide seed mixture in containers showing percentage of seed mix, germination percentage, inert matter percentage, weed percentage, year of production, net weight, date of packaging, and location of packaging.

1.7 QUALIFICATIONS

A. Seed Supplier: Company specializing in manufacturing Products specified in this section with minimum three years documented experience.

B. Installer: Company specializing in performing work of this section with minimum three years documented experience and a record of successful landscape establishment.

1. Installer's Field Supervision: Require Installer to maintain an experienced full-time supervisor on the Project site during times that work of this section is in progress.

C. Testing Agency: To qualify for acceptance, an independent testing agency must demonstrate to Owner's satisfaction, based on evaluation of agency-submitted criteria conforming to ASTM E 699, that it has the experience and capability to satisfactorily conduct the testing indicated without delaying the work.

1.8 DELIVERY, STORAGE, AND HANDLING

A. Deliver packaged materials in sealed containers showing weight, analysis, and name of manufacturer.

B. Protect materials from deterioration during delivery and while stored at site.

1.9 PROJECT CONDITIONS

A. Utilities: Determine location of above grade and underground utilities prior to the start of Work. Perform Work in a manner which will avoid damage. Hand excavate, as required. Maintain grade stakes until removal is mutually agreed upon by the Engineer.

B. Excavation: When conditions detrimental to lawn growth are encountered, such as rubble fill, adverse drainage conditions, or obstructions, notify the Engineer before planting.

1.10 COORDINATION AND SCHEDULING

A. Coordinate with other site operations to avoid conflict and damage to new work.

B. Planting season for Seeded areas: March 15 to June 15, and August 15 to October 15.

1.11 WARRANTY

A. General: The special warranty specified in this Section shall not deprive the Owner of other rights the Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by the Contractor under requirements of the Contract Documents.

B. Special Warranty: Warrant lawns and seeded areas for a period of one year after date of Substantial Completion, against defects including death and unsatisfactory growth, except for defects resulting from incidents that are beyond Contractor's control.

1.12 LAWN MAINTENANCE

A. Begin maintenance immediately after each area is planted and continue until acceptable lawns and plants are established, but for not less than the following periods:

1. Lawns and Seeded Areas: 120 days after date of Substantial Completion.

2. When full maintenance period has not elapsed before end of planting season, or if lawn is not fully established at that time, continue maintenance during the next planting season.

B. Maintain and establish seeded areas by watering, weeding, replanting, and other operations. Roll, re-grade, and replant bare or eroded areas and re-mulch to produce a uniformly smooth surface.

C. Watering: Provide and maintain temporary piping, hoses, and watering equipment to convey water from sources and to keep grass uniformly moist to a depth of 4 inches. Schedule watering to prevent wilting, puddling, erosion, and displacement of seed or mulch. Lay out temporary watering system to avoid walking over muddy or newly planted areas.

1. Water all seeded areas at the minimum rate of 1 inch per week.

D. Mow lawns as soon as there is enough top growth to cut with mower set at specified height for principal species planted. Repeat mowing as required to maintain specified height without cutting more than 40 percent of the grass height. Remove no more than 40 percent of grass-leaf growth in initial or subsequent mowings. Do not delay mowing until grass blades bend over and become matted. Do not mow when grass is wet. Schedule initial and subsequent mowings to maintain a grass height of 1½ to 2½ inches.

PART 2 - PRODUCTS

2.1 TOPSOIL

A. See specification section 32 91 20 – Topsoil.

2.2 SOIL AMENDMENTS

A. Lime: ASTM C 602, Class T, agricultural limestone containing a minimum 85 percent calcium carbonate equivalent, with a minimum 90 percent passing a No. 10 mesh sieve and a minimum 50 percent passing a No. 100 mesh sieve.

1. Provide lime in the form of dolomitic limestone.

B. Aluminum Sulfate: Commercial grade, unadulterated.

C. Herbicides: EPA registered and approved, of type recommended by manufacturer.

D. Sand: Clean, washed, natural or manufactured, free of toxic materials.

E. Compost: Well-composted, stable, and weed-free organic matter, pH range of 5.5 to 8; moisture content 35 to 55 percent by weight; 100 percent passing through 3/4-inch sieve; soluble salt content of 5 to 10 decisiemens/m; not exceeding 0.5 percent inert contaminants and free of substances toxic to plantings; and as follows:

1. Organic Matter Content: 50 to 60 percent of dry weight.

2.3 FERTILIZER

A. Application of any fertilizer is prohibited between December 1st and April 1st and cannot be applied within 20’ of a water body.

B. Fertilizer: Mixed commercial fertilizers shall contain total nitrogen, available phosphoric acid and soluble potash in the ratio of 10-0-4 (50% N/UF). 50% of total nitrogen shall be derived from ureaform furnishing a minimum of 3.5% water insoluble nitrogen (3.5% WIN). The balance of the nitrogen shall be present as methylene urea, water-soluble urea, nitrate and ammoniacal compounds.

C. Other fertilizers meeting DOT Specification Section 713-03 Fertilizer can be used.

2.4 MULCH

A. Dry Application, Straw: Stalks of oats, wheat, rye or other approved crops that are free of noxious weed seeds. Weight shall be based on a 15 percent moisture content.

B. Hydro Application: Colored wood cellulose fiber product specifically designed for use as a hydro-mechanical applied mulch. Acceptable Product: Conwed Hydro Mulch, Conwed Fibers, 231 4th Street SW, Hickory, NC.

2.5 SEED - LAWN

A. Furnish fresh, clean, new-crop seed mixed in the proportions specified for species and variety, and conforming to Federal and State Standards.

B. Acceptable material in a seed mixture other than pure live seed consists of nonviable seed, chaff, hulls, live seed of crop plants and inert matter. The percentage of weed seed shall not exceed 0.1 percent by weight.

C. All seed will be rejected if the label or test analysis indicates any of the following contaminates: Timothy, Orchard Grass, Sheep Fescue, Meadow Fescue, Canada Blue Grass, Alta Fescue, Kentucky 31 Fescue, and Bent Grass.

D. Provide seed mixture equal to Scotts Pure Premium Sun and Shade North Grass Seed Mixture, comprised of the following:

SEED MIXTURE			
AMOUNT BY WEIGHT IN MIXTURE	SPECIES OR VARIETY *	PERCENTAGE	
		Purity	Germination
30%	FENWAY RED FESCUE	97%	80%
30%	ABBEY KENTUCKY BLUEGRASS BLEND	95%	80%
20%	DEVINE PERENNIAL RYE	98%	85%
20%	ENCHANTED PERENNIAL RYE	98%	85%

*Variety may be altered depending on availability of seed from manufacturer.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine areas to receive landscaping for compliance with requirements and for conditions affecting performance of work of this Section. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 PLANTING SOIL PREPARATION

A. Before mixing, clean topsoil of roots, plants, sods, stones, clay lumps, and other extraneous materials harmful to plant growth.

B. Mix soil amendments and fertilizers with topsoil as necessary to meet applicable ASTM standards.

C. For lawns, mix planting soil either prior to planting or apply on surface of topsoil and mix thoroughly before planting.

1. Mix lime with dry soil prior to mixing fertilizer. Prevent lime from contacting roots of acid-tolerant plants.

3.3 LAWN AREA PLANTING PREPARATION

A. Limit sub-grade preparation to areas that will be planted in the immediate future.

B. Loosen sub-grade to a minimum depth of 4 inches. Remove stones larger than 1-1/2 inches in any dimension and sticks, roots, rubbish, and other extraneous materials.

C. Spread topsoil to depth (4 inches minimum) required to meet the thickness, grades, and elevations shown, after light rolling and natural settlement. Do not spread if planting soil or sub-grade is frozen.

1. Place approximately 1/2 the thickness of planting soil mixture required. Work into top of loosened sub-grade to create a transition layer and then place remainder of planting soil mixture.

D. Grade lawn and grass areas to a smooth, even surface with loose, uniformly fine texture. Roll (112 pound roller maximum) and rake, remove ridges, and fill depressions to meet finish grades. Limit fine grading to areas that can be planted in the immediate future. Remove trash, debris, stones larger than 1-1/2 inches in any dimension, and other objects that may interfere with planting or maintenance operations.

E. Moisten prepared lawn and grass areas before planting when soil is dry. Water thoroughly and allow surface to dry before planting. Do not create muddy soil.

F. Restore prepared areas if eroded or otherwise disturbed after fine grading and before planting.

3.4 FERTILIZING

A. The soil shall be tested for pH and lime added as necessary. All amendments shall be checked and approved by the Landscape Architect before amendments are made.

B. Apply fertilizer at a rate of 6 lb. / 1,000 SF.

3.5 SEEDING - LAWN

A. Assume all risks when seed is sowed before approval of seed analysis.

B. Sow seed with a spreader or a seeding machine. Do not broadcast or drop seed when wind velocity exceeds 5 mph. Evenly distribute seed by sowing equal quantities in 2 directions at right angles to each other.

1. Do not use wet seed or seed that is moldy or otherwise damaged in transit or storage.

2. Do not sow immediately following rain, when ground is too dry, or during windy periods.

C. Sow seed at the following rates:

1. Lawn Seed Mix, Seeding Rate: 6 to 8 lbs per 1000 sq. ft.

2. Temporary Cover Seed Mix, Seeding Rate: 3 to 4 lb per 1000 sq. ft.

D. Rake seed lightly into top 1/8 inch of topsoil, roll lightly, and water with fine spray, immediately after each area has been mulched. Saturate to 4 inches of soil.

E. Protect seeded areas with slopes less than 1:3 against erosion by spreading mulch after completion of seeding operations.

1. Mulch rates.

2. Oat or wheat straw applied at a minimum rate of 2 tons per acre to form a continuous blanket 1 1/2 inches loose depth over seeded areas. Spread by hand, blower, or other suitable equipment.

3. Apply slurry uniformly to all areas to be seeded in a one-step process. Apply mulch at a minimum rate of 1500-lb/acre dry weight but not less than the rate required to obtain specified seed-sowing rate.

F. Anchor mulch by spraying with asphalt-emulsion tackifier at the rate of 10 to 13 gal. per 1000 sq. ft. Take precautions to prevent damage or staining of structures or other plantings adjacent to mulched areas. Immediately clean damaged or stained areas.

3.6 LAWN RESTORATION

A. Renovate existing lawn within work limit.

B. Renovate existing lawn damaged by Contractor's operations, such as storage of materials or equipment and movement of vehicles.

C. Reestablish lawn where settlement or washouts occur or where minor regrading is required.

1. Install new planting soil as required.

D. Remove lawn from diseased or unsatisfactory existing lawn areas; do not bury in soil.

E. Remove topsoil containing foreign materials such as oil drippings, fuel spills, stones, gravel, and other construction materials resulting from Contractor's operations, and replace with new planting soil.

F. Where substantial lawn remains, mow, dethatch, core aerate, and rake. Remove weeds before seeding.

G. Remove weeds before seeding. Where weeds are extensive, apply selective herbicides as required. Do not use pre-emergence herbicides.

H. Remove waste and foreign materials, including weeds, soil cores, grass, vegetation, and lawn, and legally dispose of them off Owner's property.

I. Till stripped, bare, and compacted areas thoroughly to a soil depth of 6 inches.

J. Apply soil amendments and fertilizers required for establishing new lawn and mix thoroughly into top 4 inches of existing soil. Install new planting soil to fill low spots and meet finish grades.

K. Apply seed and protect with straw mulch as required for new lawn.

L. Provide lawn maintenance as required for new lawn.

3.7 SATISFACTORY LAWNS, GRASS, AND LAWN RESTORATION

A. Satisfactory Lawns, Grass, and Lawn Restoration: At end of maintenance period, a healthy, uniform, close stand of grass has been established, free of weeds and surface irregularities, with coverage exceeding 95 percent over any 10 sq. ft. and bare spots not exceeding 5 by 5 inches.

B. Reestablish those that do not comply with requirements and continue maintenance until satisfactory.

3.8 CLEANUP AND PROTECTION

A. During landscaping, keep pavements clean and work area in an orderly condition.

B. Protect landscaping from damage due to landscape operations, operations by other contractors and trades, and trespassers. Maintain protection during installation and maintenance periods. Treat, repair, or replace damaged landscape work as directed.

3.9 DISPOSAL OF SURPLUS AND WASTE MATERIALS

A. Disposal: Remove surplus soil and waste material, including excess subsoil, unsuitable soil, trash, and debris, and legally dispose of it off the Owner's property.

END OF SECTION 32 92 00

SECTION 33 41 00 – STORM UTILITY DRAINAGE PIPING

PART 1 - GENERAL

1.1 SUMMARY

A. Under this section the Contractor shall provide all labor, equipment and material necessary to furnish, install and test all storm utility drainage pipe and fittings as shown on the Contract Drawings.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Contract Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

B. Section 31 20 00: Earth Moving

C. Section 33 49 00: Storm Drainage Structures

1.3 SUBMITTALS

A. Shop Drawing: Pipes and associated fittings.

B. Product Data: Manufacturer's specifications, including dimensions, allowable height of cover information, and installation instructions.

C. Manufacturer's product literature, installation instructions and shop drawings for infiltration systems.

D. As-built record drawings at project closeout of installed storm sewerage piping and products. An as-built survey prepared by licensed NYS Surveyor depicting the installed storm sewer piping and structures including rim and invert elevations of structures pipe size, pipe type, and invert of all piping. Both hard copy and electronic copy shall be provided to the Owner and Engineer.

1.4 QUALITY ASSURANCE

A. Environmental Compliance: Comply with applicable portions of local health department and environmental agency regulations pertaining to storm sewerage systems.

B. Utility Compliance: Comply with local utility regulations and standards pertaining to storm sewerage.

C. All storm sewer system components shall be installed in accordance with applicable plumbing code requirements and in accordance with all license requirements.

D. All storm sewer construction shall be subject to inspection by the Engineer prior to backfilling.

1.5 PROJECT CONDITIONS

A. Location of Sewers and Sewer Structures: The location, elevation, and grades of sewers and sewer structures are shown on the Contract Drawings and shall be adhered to as closely as possible. If during construction of the project, it becomes necessary to make changes in the location or grades of the sewers, the Engineer will issue appropriate directions after being contacted by the Contractor.

B. Site Information: Perform site survey, research public utility records, and verify existing utility locations. Verify that storm sewerage system piping may be installed in compliance with original design and referenced standards.

1.6 DELIVERY, STORAGE AND HANDLING

A. Deliver, store, protect and handle products to site under provisions of the General Conditions.

B. Provide temporary end caps and closures on piping and fittings. Maintain in place until installation.

C. Protect piping systems from entry of foreign materials by temporary covers, completing sections of the work, and isolating parts of completed system.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Corrugated Polyethylene Pipe (HDPE, Dual Wall with Smooth Interior): Conform to AASHTO M-294.

1. Classification: Soil-tight, integral bell and spigot joints. Joints shall be sealed with factory installed rubber O-ring gaskets that meet ASTM F-477.

2. Coefficient of Roughness (interior pipe surface): 0.012 maximum (Manning formula).

3. Joint Couplings (Soil-tight): Polyethylene, bell-and-spigot type couplers utilizing an elastomeric gasket conforming to ASTM F-477.

4. Fittings:

a. High density polyethylene meeting the properties specified for the pipe.

b. Either molded or fabricated.

c. Designed specifically for the pipe furnished and manufactured by the pipe manufacturer.

5. Acceptable Manufacturer: ProLink ST (N-12 IB ST), Smooth Interior Pipe & Fittings by Advanced Drainage Systems, Inc., (ADS) 3300 Riverside Dr., Columbus, OH 43221; (614) 457-3051, or approved equivalent.

B. Joint Couplings: Polyethylene, bell and spigot type couplers utilizing an elastrometric gasket conforming to ASTM F 477. Snap on type or split collar through 24” diameter.

1. Corrugated to match pipe corrugations, width not less than one half the pipe diameter.

2. Split couplings shall engage an equal number of corrugations on each side of the joint

C. Fittings: Either molded or fabricated, high density polyethylene components meeting the properties specified for, and designed specifically for the pipe manufactured by the pipe manufacturer.

D. Specifications have been based on products manufactured by Advanced Drainage Systems, Inc, Columbus, Ohio (Tel. #614-457-3051) or Hancor, Inc., Findlay, Ohio (Tel. #800-847-5880).

PART 3 - EXECUTION

3.1 MAINTENANCE OF EXISTING STORMWATER FLOWS

A. Provide all temporary facilities required to safely and adequately bypass existing stormwater flows from the Work area during construction.

B. The bypassing of such flows shall prevent any hazards to public health and welfare when the stormwater flows are bypassed from the Work area during construction.

C. The Contractor is fully responsible for any and all damages to construction, adjacent properties, utilities, and/or buildings in the area caused by these operations.

3.2 INSPECTION

A. Inspect pipe and fittings before installation. Remove defective materials from the Site.

B. Concrete pipes shall be free from fractures, cracks, and surface roughness.

C. Pipe with damaged ends will not be accepted, when such damage would prevent making a satisfactory joint.

3.3 INSTALLATION

A. General Locations and Arrangements: Contract Drawings (plans and details) indicate the general location and arrangement of the underground storm sewerage system piping. Location and arrangements of piping layout take into account many design considerations. Install the piping as indicated, to the extent practical. If, during construction of the project, it becomes necessary to make changes in the location or grades of the sewers, the Engineer will issue appropriate directions after being contacted by the Contractor.

B. Install piping beginning at low point of systems, true to grades and alignment indicated with unbroken continuity of invert. Place bell ends of piping facing upstream. Install gaskets, seals, sleeves, and couplings in accordance with manufacturer's recommendations for use of lubricants, cements, and other installation requirements. Maintain swab or drag in line and pull past each joint as it is completed.

C. Use manholes or catch basins for changes in direction, except where a fitting is indicated. Use fittings for branch connections, except where direct tap into existing sewer is indicated.

D. Use proper size increasers, reducers, and couplings, where different size or material of pipes and fittings are connected. Reduction of the size of piping in the direction of flow is prohibited.

E. Install piping pitched down in direction of flow, at minimum slope of 1 percent, except where indicated otherwise.

F. Extend storm sewerage system piping to connect to building storm drains, of sizes and in locations indicated.

G. Fill excess excavation with suitable materials and tamp.

3.4 STORM SEWER RELATION TO WATER LINE

A. Horizontal Separation: Storm sewers should be laid at least 10 feet, horizontally, from any existing or proposed water line.

B. Vertical Separation: Whenever sewers must cross water line, the storm sewer shall be laid at such so there is an 18-inch vertical separation between the two lines. When the elevation of the sewer cannot be varied to meet the above requirements, the water main shall be relocated to provide this separation or reconstructed with push-on joint pipe for a distance of 10 feet on each side of the sewer. One full length of water main should be centered over the sewer so that both joints will be as far from the sewer as possible.

C. Special Conditions: When it is impossible to obtain proper horizontal and vertical separation as stipulated above, the water main should be constructed of a slip-on or mechanical-joint ductile iron pipe, and the sewer constructed of mechanical-joint ductile iron pipe and both pressure tested to assure water tightness.

3.5 PROTECTING PIPE

A. During the progress of the Work keep pipe clean from all sediment, debris, and other foreign material.

B. Close all open ends of pipes and fittings securely with removable plugs at end of Work day, during storms, when the Work is left at any time, and at such times as Engineer may direct.

3.6 TAP CONNECTIONS

A. Make connections to existing piping and underground structures so that finished work will conform as nearly as practicable to the requirements specified for new work.

3.7 FIELD QUALITY CONTROL

A. Cleaning: Clear interior of piping and structures of dirt and other superfluous material as work progresses. Maintain swab or drag in piping and pull past each joint as it is completed.

1. In large, accessible piping, brushes and brooms may be used for cleaning.

2. Place plugs in ends of uncompleted pipe at end of day or whenever work stops.

3. Flush piping between manholes, if required by local authority, to remove collected debris.

B. Interior Inspection: Inspect piping to determine whether line displacement or other damage has occurred.

1. Make inspections of pipe between manholes/fittings, after pipe has been installed and approximately 2 feet of backfill is in place, and again at completion of project.

2. If inspection indicates poor alignment, debris, displaced pipe, infiltration, or other defects, correct such defects and re-inspect.

END OF SECTION 33 41 00

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SECTION 33 49 00 – STORM DRAINAGE STRUCTURES

PART 1 - GENERAL

1.1 SUMMARY

A. This Section includes:

1. Under this section the Contractor shall provide all labor, equipment and material necessary to furnish, install and test all storm utility drainage structures as shown on the Contract drawings, specified herein and approved by the Engineer.

1.2 RELATED WORK SPECIFIED ELSEWHERE

A. Contract Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

B. Section 31 20 00: Earth Moving

C. Section 33 41 00: Storm Utility Drainage Piping

1.3 SUBMITTALS

A. Shop drawings for precast concrete storm drainage structures, including cast iron frames, grates, and covers.

B. Product Data: Manufacturer’s catalog cuts, specifications, and installation instructions. And manufacturer's certificates.

C. As-built record drawings at project closeout of installed storm sewerage piping and products. An as-built survey prepared by licensed NYS Surveyor depicting the installed storm sewer piping and structures including rim and invert elevations of structures pipe size, pipe type, and invert of all piping. Both hard copy and electronic copy shall be provided to the Owner and Engineer.

1.4 QUALITY ASSURANCE

A. All material utilized in construction of structures shall comply with all applicable ASTM and NYSDOT standards.

B. Environmental Compliance: Comply with applicable portions of local health department and environmental agency regulations pertaining to storm sewerage systems.

C. Utility Compliance: Comply with local utility regulations and standards pertaining to storm sewerage.

D. All storm sewer system components shall be installed in accordance with applicable plumbing code requirements and in accordance with all license requirements.

E. All storm sewer construction shall be subject to inspection by the Engineer prior to backfilling.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Pre-cast, square, reinforced concrete structures with integral base and accessories complying with the following:

1. Structure shall be manufactured by the Fort Miller Co. Inc. or approved equivalent.

2. Riser Sections: ASTM C 890, height and width as indicated on the Contract Documents.

3. Keyed Joints Between Riser Sections: Rubber gaskets per ASTM C 443 as recommended by the manufacturer.

4. Concrete for Pre-Cast Units: Air content 6% by volume with an allowable tolerance of +/- 1.5%. Minimum compressive strength of 4,500 psi after 28 days.

5. Pre-Cast Concrete Structure Load Rating: AASHTO HS-20 with 30% impact and 130 lb/cf equivalent soil pressure.

6. Frame and Grate: Provide castings of uniform quality, free from blow holes, porosity, hard spots, shrinkage defects, cracks or other injurious defects. Manufacture all castings true to pattern and free from surface imperfections. Provide heavy duty frames and grates with machined horizontal bearing surfaces.

a. Design of each shall be the same throughout the project unless otherwise specified or indicated on the Contract Drawings.

b. Casting Load Rating: AASHTO H20 wheel loading requirements. Manufacture, workmanship and certified proof-load tests shall conform to AASHTO M306-89 Standard Specification for Drainage Structure Castings.

c. Material: Cast iron complying with ASTM A 48, Class 30B or 35B.

d. Frames: As indicated on Contract Drawings.

e. Grates: As indicated on Contract Drawings.

f. Coatings: Delivered to Site free of any coatings, unless otherwise specified.

g. Acceptable Casting: As indicated on Contract Drawings.

B. Pipe-to-Drainage Structure Connection:

1. Non-shrink cement mortar, ASTM C 270, Type M.

2. Concrete Coating: Waterborne, non-flammable, VOC Compliance, 3 mil dry film thickness, catonic asphalt emulsion (55% - 60% petroleum asphalt), PGS 96 by Pipe Gasket & Supply Co., 2701 South Coliseum Boulevard, Suite 1010, Fort Wayne, Indiana, 46003, (219) 426-4575, or approved equivalent.

C. Materials for use in mortar shall conform to the following requirements:

1. Cement: Cement shall conform to the Standard Specifications for Portland Cement, ASTM Serial Designation C150 with latest amendments.

2. Sand: Sand shall be sharp, clean, free from deleterious substances and shall be uniformly graded and shall conform to the "Standard Specification for Aggregate for Masonry Mortar", ASTM C144 with the latest amendments.

3. Water: Water used in making mortar or concrete shall be clean and free from oil, alkali, sugar or other deleterious substances. When potable water is in reach, no other water shall be used.

PART 3 - EXECUTION

3.1 INSTALLATION

A. Construct structures with precast reinforced riser sections to the dimensions shown on the Contract Drawings. Seal joints between precast riser sections with material specified.

B. Position tops of structures flush with finished grade.

C. All lifting holes shall be sealed by driving a tapered rubber plug into to hole and filling the remaining void with a non-shrink grout.

D. Cast iron frames, grates and covers shall be set to the proper elevation in a full bed of mortar. The frame shall be completely mortared onto the manhole as shown on the Contract Drawings.

E. Temporary Shoring: Provide and maintain shoring, bracing, or structural support to preserve stability and prevent movement, settlement, or collapse of existing structures and construction to remain. Strengthen or add new supports when required during progress of selective demolition.

3.2 BRICK TO BRING STORM SEWER STRUCTURE TO GRADE

A. Brick shall be used in conjunction with precast concrete spacers to bring frames to grade for heights under twelve (12) inches in the following manner:

1. Bricks shall be thoroughly wet when used and each brick shall be laid in a full bed of mortar including side and end joints. Normal 3/8 inch joints shall be used except when the brick is laid radially, in which case the narrowest part of the joint will not exceed ¼ inch. Brick shall be laid neatly with sufficient width to adequately support the cast iron frame. The entire stack shall be completely plastered on the exterior side when initially constructed. The brick work shall be kept moist for a period of five (5) days after completion and adequately protected to prevent freezing during cold weather. The interior of the brick shall be neatly plastered once final grading and paving is completed so that the frame and cover will not the disturbed by additional work.

3.3 FIELD QUALITY CONTROL

A. Cleaning: Clear interior of structures of dirt and other superfluous material as work progresses.

1. Flush piping between manholes, if required by local authority, to remove collected debris.

B. Interior Inspection: Inspect piping to determine whether line displacement or other damage has occurred.

1. Make inspections of pipe between manholes/fittings, after pipe has been installed and approximately 2 feet of backfill is in place, and again at completion of project.

2. If inspection indicates poor alignment, debris, displaced pipe, infiltration, or other defects, correct such defects and re-inspect.

C. Water Tightness of Storm Sewer Structures: It is the intent of the Contract Drawings and these Specifications that the completed storm sewer structure shall be as watertight and free from infiltration as practical. All visible leaks or points of infiltration shall be repaired.

END OF SECTION 33 49 00