

SPECIFICATIONS FOR
TULLY CENTRAL SCHOOL DISTRICT
CAPITAL PROJECT FOR
BUS GARAGE BUILDING RENOVATIONS AND
FUEL TANK REPLACEMENTS

BUS STORAGE (HS)

SED PROJECT NUMBER: 42-19-02-04-4-004-009

RSA PROJECT NO. 2302

ROBERTSON STRONG APGAR ARCHITECTS, P.C. STATE THAT TO THE BEST OF THEIR KNOWLEDGE, INFORMATION AND BELIEF, THE PLANS AND SPECIFICATIONS ARE IN ACCORDANCE WITH APPLICABLE REQUIREMENTS OF THE NEW YORK STATE UNIFORM FIRE PREVENTION AND BUILDING CODE, THE STATE ENERGY CONSERVATION CONSTRUCTION CODE AND EDUCATION DEPARTMENT BUILDING STANDARDS

ARCHITECT: ROBERTSON STRONG APGAR ARCHITECTS, P.C.



**ROBERTSON
STRONG
APGAR** 
ARCHITECTURE • ENGINEERING

AUGUST 30, 2023

SET NO:

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ADVERTISEMENT

The Invitation for Bids shall be published in the Syracuse Post Standard the week of March 10, 2024.

This advertisement shall be run under Legal Notices and shall include the following Invitation for Bids.

INVITATION TO BID

The Board of Education of the Tully Central School District invites sealed bids for **BUS GARAGE BUILDING RENOVATIONS & FUEL TANK REPLACEMENTS (RSA #2302)** Capital Project at Tully Central School District.

Separate Prime Bids will be received for:

**General Construction
Heating and Ventilation**

Bids will be received by the Board of Education at the Tully Central School District (FedEx or manually delivered) to the **Tully CSD District Office**, 20 State St., Tully, NY 13159 until 3:00 PM, April 4, 2024. The bids will be publicly opened and read aloud on this date and time at the **Tully Junior-Senior High School Library**, 5848 U.S. Route 80, Tully, NY 13159.

There will be a Pre-Bid walk through of the building on March 19, 2024 at 1:00 PM convening at the Bus Garage. Attendance of bidders is not mandatory but is highly recommended.

Bidding and Contract Documents may be examined free of charge at the following offices:

Robertson Strong Apgar Architects, P.C., 1054 James Street, Syracuse, NY 13203
Syracuse Builders Exchange, 6563 Ridings Road, Syracuse, NY 13206
Rochester Builders Exchange, 180 Linden Oaks, Rochester, NY 14625
Northern New York Builders Exchange, Inc., 22074 Fabco Road, Watertown, NY 13601
Associated Building Contractors of the Triple Cities, Inc., 15 Belden Street, Binghamton, NY 13903.

Complete sets of the Bidding & Construction Documents may be obtained on or after March 11, 2024, at Syracuse Blueprint, 825 East Genesee Street, Syracuse, New York 13210; Phone (315) 476-4084, Fax

(315) 476-7578 upon deposit of One Hundred Dollars (\$100.00) per set. A Bidder, making the deposit required for the Bidding Documents, submitting a Proposal accompanied by a certified check or other security in accordance with the requirements contained in the specifications and public advertisement for bids, and returning a copy of the plans and specifications used by such Bidder, other than the successful Bidder, in good condition within thirty (30) days following the award of the contract covered by such plans and specifications, or rejection of the Bid, the full amount of such deposit for one copy of the plans and specifications shall be returned to such Bidder, including the successful Bidder. All documents must be returned to Syracuse Blueprint to receive a refund.

Bidders wishing sets of plans and specifications mailed to them shall include, in addition to the Bidding Document deposit, a FEDEX or UPS shipper number. Bidders who do not have a shipper number may make arrangements with the Syracuse Blue Print Company to pay by certified non-refundable check for handling and postage. All Bidding Document deposit checks shall be made payable to the **Tully Central School District**. Shipping costs are the responsibility of the bidder and are non-refundable. Checks for the shipment of the Bidding Documents shall be made payable to Syracuse Blue Print Company Inc.

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Bids must be submitted in duplicate in accordance with the instructions contained in the Information For Bidders. Bid Security will be required for each bid in the form of a certified check, or bid bond for 5% of the bid amount for each separate contract:

The Owner reserves the right to waive any informalities in and accept or reject any or all bids.

No bidder may withdraw his bid within Forty-Five (45) days after actual opening thereof.

Date: March 8, 2024

District Clerk, Board of Education

Tully Central School District

**00 201 – INSTRUCTIONS TO BIDDERS
PAGE 1**

- 1.01 The following "Instructions to Bidders" AIA Document A701, 2018 is a part of the Bid Documents. Where any part of the Instructions to Bidders is modified or voided in these specifications, the unaltered provisions of that part shall remain in effect.

**** END OF SECTION ****

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00 210 - SUPPLEMENTARY INSTRUCTIONS TO BIDDERS
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The following supplements modify "Instructions to Bidders" AIA Document A701, 2018. Where a portion of the Instructions to Bidders is modified or deleted by the Supplementary Instructions to Bidders, the unaltered portions of the Instructions to Bidders shall remain in effect.

ARTICLE 1: DEFINITIONS

Delete Paragraph 1.2 in its entirety and substitute the following:

- 1.2 Definitions set forth in the General Conditions of the Contract for Construction, AIA Document A201 2017 Edition, or other Contract Documents are applicable the Bidding Documents.

Delete Paragraph 1.8 in its entirety and substitute the following:

- 1.8 A Bidder is a person or entity who submits a Bid, making the deposit required for the Bidding Documents, submits a Proposal accompanied by a certified check or other security in accordance with the requirements set forth in the Bidding Documents.

Add Paragraphs 1.10 and 1.11:

- 1.10 Terms used in these Instructions to Bidders which are defined in the General and Supplementary Conditions, have the meanings assigned to them in the General and Supplementary Conditions. The term "Successful Bidder" means the Bidder to whom the Owner (on the basis of the Owner's evaluation as hereinafter provided) awards the Contract.
- 1.11 Complete sets of Bidding Documents shall be used in preparing Bids; neither Owner nor Architect assumes any responsibility for errors or misinterpretations resulting from the use of incomplete sets of Bidding Documents.

ARTICLE 2: BIDDER'S REPRESENTATIONS

Add Paragraphs 2.1.7 and 2.1.8:

- 2.1.7 Insofar as possible, the Bidder agrees to employ such means and methods in carrying out his work as will not cause any interruptions of, or interference with, the work of any other contractor or subcontractor on this project or any other project being accomplished at the site.
- 2.1.8 Failure to have taken the actions described in Article 2 will not relieve a successful Bidder of his obligation to complete his work as specified in the Contract Documents.

ARTICLE 3: BIDDING DOCUMENTS

3.1 Distribution

Add the following to Paragraph 3.1.1:

Drawings and Project Manuals may be examined at the following locations:

- .1 Robertson Strong Apgar Architects, P.C., 1054 James Street, Syracuse, NY 13203
- .2 Syracuse Builders Exchange, 6563 Ridings Road, Syracuse, NY 13206
- .3 Rochester Builders Exchange, 180 Linden Oaks, Rochester, NY 14625
- .4 Northern New York Builders Exchange, Inc., 22074 Fabco Road, Watertown, NY 13601
- .5 Associated Building Contractors of the Triple Cities, 15 Belden St., Binghamton, NY 13903

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Delete Paragraph 3.1.2 in its entirety and substitute the following:

- 3.1.2 The deposit will be refunded to Bidders who submit a bona fide Bid, if the copy of the plans and specifications used by such Bidder, other than the successful Bidder, is returned in good condition within thirty (30) days following the award of the contract covered by such plans and specifications, or rejection of the Bid, the full amount of such deposit for one copy of the plans and specifications shall be returned to such Bidder, including the successful Bidder. Partial reimbursement, in an amount equal to the full amount of such deposit for one set of plans and specifications per unsuccessful bidder or non-bidder less the actual cost of reproduction of the plans and specifications, shall be made for the return of all other copies of the plans and specifications in good condition within thirty (30) days following the award of the contract or the rejection of the bids covered by such plans and specifications.

Add the following Clause to Paragraph 3.1.2:

- .1 For the Bidding Documents to be deemed in good condition, they must be returned bound as issued, legible and containing only the markings necessary for bidding purposes.

3.2 Modification or Interpretation of Bidding Documents

Delete Paragraph 3.2.1 in its entirety and substitute the following:

- 3.2.1 The Bidder shall carefully study the bidding documents and visit the site to become familiar with and satisfy Bidder as to the general, local, and site conditions that may affect cost, progress, performance, or furnishings of the Work. The Bidder shall consider federal, state and local Laws and Regulations that may affect cost, progress performance or furnishing of the Work. The Bidder shall study and carefully correlate Bidder's knowledge and observations with the Contract Documents and such other related data. The Bidder shall promptly notify the Architect of all conflicts, errors, ambiguities or discrepancies that Bidder has discovered in or between the Contract Documents and such other related documents and request clarification or interpretation pursuant to Section 3.2.2.

Add Paragraphs 3.2.4 and 3.2.5:

- 3.2.4 In the absence of an interpretation by the Architect or Engineer, should the Drawings disagree in themselves or with the Specifications, the better quality, the more costly, or the greater quantity of work or materials shall be estimated upon, and unless otherwise ordered, shall be furnished.
- 3.2.5** Communications regarding the Documents shall be directed to Robertson Strong Apgar Architects, 1054 James Street, Syracuse, NY 13203; Telephone (315) 472-7761; MEP Items – FS Engineering, 721 E. Genesee Street, Syracuse NY 13210: Telephone (315) 471-4013; Fax (315) 471-4044.

3.3 Substitutions

Delete Paragraph 3.3.5 in its entirety and substitute the following:

- 3.3.5 Substitutions of equivalent materials and equipment will be considered up to 15 days after the Notice of Award and prior to submittal of applicable shop drawings per section 3.4.18 of the AIA Document A201 General Conditions of the Contract for Construction. After 15 days, it is assumed the awarded Contractor has provided the materials and equipment as specified in the contract documents.

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3.4 Addenda

Delete Paragraph 3.4.3 in its entirety.

Add the following Paragraph to ARTICLE 3:

3.5 Equivalency

- 3.5.1 In the Specifications, when two or more kinds, types, brands, manufacturers, or materials are named, they are regarded as the required standard of quality, and are presumed to be equal. The Contractor may select one of these items. If the Contractor proposes a substitution to a specified kind, type, brand, manufacturer, or material, the burden of proof to show equivalency or equal quality shall be that of the Contractor.

ARTICLE 4: BIDDING PROCEDURE

4.1 Preparation of Bids

Delete Paragraph 4.1.1 in its entirety and substitute the following:

- 4.1.1 Bids shall be submitted in duplicate on Bid Forms included in the Project Manual, or the Bid Form included in an Addendum, as applicable. The Bid Forms included in the Project Manual shall not be altered in any way.

Delete Paragraph 4.1.2 in its entirety and substitute the following:

- 4.1.2 All blanks on the Bid Form shall be legibly executed. The Bid Form must be completed in blue or black ink or other non-erasable medium. The Bidder must fill all blanks correctly where indicated for each and every item of Work. Ditto marks shall not be used.

Delete Paragraph 4.1.6 in its entirety.

Add Paragraphs 4.1.9 through 4.1.12:

- 4.1.9 A Bidder shall execute his Bid as stated below:
- .1 A Bid by an individual shall show their name and official address.
 - .2 A Bid by a partnership or limited liability company must be executed in the partnership or limited liability company name and signed by a partner or member/manager of the limited liability company. Their title must appear under the signature and the official address of the partnership shall be shown.
 - .3 A Bid by a corporation must be executed in the corporate name by an officer of the corporation and must be accompanied by a certified copy of the Resolution of the Board of Directors authorizing the person signing the bid to do so on behalf of the corporation. The corporate seal shall be affixed and attested by the Secretary. The state of incorporation and the official corporate address shall be shown.
 - .4 All names must be printed below the signatures.
- 4.1.10 The Bid shall contain an acknowledgement of the receipt of all Addenda in the space provided on the Bid Form.
- 4.1.11 The name, address, and telephone number to which communications regarding the Bid are to be directed shall be shown by the Bidder.

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4.1.12 In addition to the Bid Form, the following listed documents shall be executed in the manner described in Paragraph 4.1.9 unless another manner is indicated, and submitted with the Bid:

- .1 Bid Security – Bid Bond or Certified Check**
- .2 Certified Copy of Resolution of Board of Directors (if corporation)**
- .3 Non-Collusion Bidding Certification**
- .4 Iran Divestment Act Certification**
- .5 Performance Bond Information Form**

4.2 Bid Security

Add the following Clause to Paragraph 4.2.1:

- .1 Bids shall be accompanied by a Bid Security of not less than five percent (5%) of the amount of the Bid. Such Bid Security shall be submitted in the form of a Bid Bond or a Certified Check made payable to the Owner. The submission shall be made with the understanding that the Bid Security shall guarantee that the Bidder will not withdraw his Bid for a period of forty-five (45) days after the scheduled closing time for the receipt of Bids; and that if his Bid is accepted will enter into a formal contract with the Owner in accordance with the Form of Agreement; and that the required Performance and Payment Bonds will be given; and that in the event of the withdrawal of said Bid within the said period or the failure to enter into said Contract and give said Bonds within ten (10) days after he has received notice of the acceptance of his Bid, the Bidder shall be liable to the Owner for the full amount of the Bid Security as representing the damage to the Owner as a result of the default of the Bidder in any particular hereof.

Delete Paragraph 4.2.4 in its entirety and substitute the following:

- 4.2.4 The Owner will retain the bid security of the three (3) lowest Bidders to whom an award is being considered until either (a) the Contract has been executed and the executed bonds have been approved by the Owner, or (b) the specified time has elapsed so that Bids may be withdrawn or (c) all Bids have been rejected.

4.3 Submission of Bids

Delete Paragraphs 4.3.1 through 4.3.5 in its entirety and substitute the following:

- 4.3.1 Bids shall be submitted at the time and place indicated in the Notice to Bidders.
- 4.3.2 The Bid shall be enclosed in an opaque, sealed envelope plainly marked on the outside with the word "BID", name of the Bidder, bidder's address, bidder's license or registration number, if applicable, and the name of the Project. Bid shall be submitted with bid security and other required documents.
- 4.3.3 If the Bid is sent through the mail or other delivery system, the sealed envelope containing the Bid shall be enclosed in another envelope plainly marked on the outside with the notation "Bid Enclosed". Mailed Bids shall be addressed to: **District Clerk, Tully Central School District, 20 State Street, Tully, NY 13159**
- 4.3.4 Bids submitted by mail shall be sent by Certified Mail, return receipt requested. The Bidder shall assume full responsibility for timely delivery at the location designated for receipt of Bids. Oral, telephonic, telegraphic, facsimile or other electronically transmitted bids will not be considered.

4.4 Modification or Withdrawal of Bid

Delete Paragraph 4.4.1 in its entirety and replace with the following:

- 4.4.1 Twenty-four (24) hours 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 written notice to the Owner. Such notice shall be received and duly recorded by the Owner twenty-four (24) hours before the date and time set for receipt of Bids. The Owner 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 release the amount of the original Bid. Upon receipt of such written notice the unopened Bid will be returned to the Bidder.

Delete Paragraph 4.4.2 in its entirety and replace with the following:

- 4.4.2 Withdrawn Bids may be resubmitted up to twenty-four (24) hours prior 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 to the Bid as resubmitted.

Add Paragraph 4.4.4:

- 4.4.4 A Bid may not be withdrawn, modified or canceled for a period of forty-five (45) days after the scheduled closing time for the receipt of Bids, and each Bidder so agrees in submitting a Bid.

ARTICLE 5: CONSIDERATION OF BIDS

5.1 Opening of Bids

Delete Paragraph 5.1 in its entirety and replace with the following:

- 5.1 Bids properly identified and received within the specified time limits will be publicly opened and read aloud. A summary of the Base Bids and all bid alternates (if any) will be made available to Bidders after the opening of Bids.

5.2 Rejection of Bids

Delete Paragraph 5.2 in its entirety and replace with the following:

- 5.2.1 Bids received after the time specified for the opening of Bids will not be accepted and will be returned to the Bidder, unopened.
- 5.2.2 The Owner requires that all Bids comply with the specified bidding requirements. However, the Owner may, at its discretion, waive informalities in Bids; but is not obligated to do so and does not represent that he will do so. Under no circumstances will the Owner waive any informality which would give one Bidder substantial advantage or benefit not enjoyed by all Bidders.
- 5.2.3 The Owner reserves the right, if in its judgment the public interest will be promoted thereby, to reject any and all Bids not deemed in the best interests of the Owner, and to reject as

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“informal” any bids as, in its opinion, are incomplete, conditional, obscure, or contain irregularities of any kind.

- 5.2.4 In rejecting a Bid, the Owner does not forfeit its right to accept the Bid of an individual Bidder for any other prime contract contained in this Project; and the rejection of a Bid is not necessarily a finding by the Owner of any facts or circumstances which would preclude that Bidder from bidding on future projects, or from being an acceptable subcontractor on any portion of this Project.
- 5.2.5 Bids for the same Work from an individual, or a firm, partnership, limited liability company, limited liability partnership, corporation or an association under the same or different names will not be considered. Reasonable grounds for believing that any Bidder is interested in more than one Bid for the Work may be cause for disqualification of that Bidder and the rejection of all Bids in which that Bidder is interested.
- 5.2.6 The Owner reserves the right to reject any Bid not accompanied by specified documentation and bid security.
- 5.2.7 The Owner reserves the right to reject any Bid if it shows any omission, alterations of form, additions not called for, conditions or qualifications, or irregularities of any kind.
- 5.2.8 The Owner reserves the right to reject any Bid that, in its sole discretion, is considered to be mathematically or materially unbalanced.

5.3 Acceptance of Bid (Award)

Add the following Clause to Paragraph 5.3.1:

- .1 The Owner may consider informal any Bid not prepared and submitted in accordance with all provisions of the Bidding Documents.

Add Paragraphs 5.3.3 through 5.3.7:

- 5.3.3 In evaluating Bids, discrepancies between words and figures will be resolved in favor of words. Discrepancies in the multiplication of units of work and unit prices will be resolved in favor of the unit prices. Discrepancies between the indicated sum of any column of figures and the correct sum thereof will be resolved in favor of the correct sum.
- 5.3.4 In evaluating Bids, the Owner will consider the qualifications of Bidders; whether or not the Bids comply with the prescribed requirements; the alternates, if any; and the lump sum and unit prices, if requested in the Bid Form. The Owner reserves the right to accept any items or groups of items of any Bid.
- 5.3.5 The Owner may consider the qualifications and experience of Subcontractors and other persons and organizations, (including those who are to furnish the principal items of material and equipment), proposed for those portions of the Work as to which the identity of Subcontractors or other persons and organizations must be submitted as provided in the Supplementary Conditions.
- 5.3.6 The Owner may conduct such investigation as he deems necessary to assist in the evaluation of any Bid and to establish the responsibility, qualifications and financial ability of the Bidders, proposed subcontractors and other persons and organizations, to do the Work in accordance with the Contract Documents. The Owner reserves the right to reject the Bid of any Bidder who does not pass any such evaluation to the Owner's satisfaction.

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- 5.3.7 Notwithstanding the Owner's determination not to proceed with an Alternate at the time of Award, the Owner reserves the right to proceed with said Alternate during the course of the Project and Contractor shall be bound to its Bid thereon and will not be entitled to any Change Order except for an Extension of Time.

ARTICLE 6: POST-BID INFORMATION

Delete Paragraph 6.2 in its entirety.

ARTICLE 7: PERFORMANCE BOND AND PAYMENT BOND

7.2 Time of Delivery and Form of Bonds

Delete the first Sentence of Paragraph 7.2.1 and substitute the following:

"The successful Bidder shall deliver the required bonds to the Owner simultaneously with the executed Contract."

Add the following Clause to Paragraph 7.2.2:

- .1 The Performance and Payment Bonds shall have as surety there under such surety company or companies as are acceptable to Treasury Department of the United States on Bonds given to the United States Government, and are authorized to do business in the State of New York. Premiums on such Bonds shall be included in the Bid.

Add Paragraph 7.2.5:

- 7.2.5 The Bidder and its surety under the Performance Bond made in connection with this Contract shall maintain and guarantee all Work at Bidder and Surety's own expense for one year or as otherwise set forth in the Contract Documents after the Architect issues a Certificate of Substantial Completion. Bidder and its Surety shall also be fully responsible: (1) to repair or replace any defective or improper Work or material, (2) to repair or correct any damages caused thereby, and (3) to undertake at their sole cost and expense, the repair or replacement of such Work, materials or equipment, which are found by Owner or Architect to be unacceptable, unsatisfactory or otherwise not in accordance with the standards and requirements of the Contract.

Add the following ARTICLE 9:

ARTICLE 9: TAXES

- 9.1 The Owner is an organization, which is exempt from New York State and Local Sales and Use Taxes. Materials purchased for use in fulfilling this Contract will be exempt from New York Sales Tax. The Owner will provide the Contractor with a completed Form ST-119.1, Exempt Organization Certification. The Contractor shall present a copy of this Form and a completed Form ST-120.1, Contractor Exempt Purchase Certificate, to each supplier. Should sales tax be assessed, the Owner agrees that the Contract Sum shall be increased by the full amount of such assessment.

Add the following ARTICLE 10:

ARTICLE 10: QUALIFICATIONS OF BIDDERS

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- 10.1 Bidders shall be experienced in the kind of work to be performed, shall have the necessary equipment therefore, and shall possess sufficient capital to properly execute the Work within the time allowed. Bids received from Bidders who have previously failed to complete work within the time required, or who have previously performed similar work in an unsatisfactory manner, may be rejected in the complete discretion of the Owner. A Bid may be rejected in the complete discretion of the Owner if Bidder cannot show that he has the necessary ability, plant and equipment to commence the Work at the time prescribed and thereafter to prosecute and complete the Work at the rate or within the time specified. A Bid may be rejected if Bidder is already obligated for the performance of other work which would delay the commencement, prosecution or completion of the Work.
- 10.2 As evidence of the Bidder's competency to perform the Work, Bidder may be asked to furnish and submit with this Bid the AIA A305 Bidder's Qualification Statement. All Bidders may be asked to furnish additional data to demonstrate competency.
- 10.3 Each Bid must contain evidence of Bidder's qualifications to do business in New York State or covenant to obtain such qualifications prior to execution of Agreement.
- 10.4 Bids will not be received from Bidders currently listed on the New York State, Department of Labor List of Employers Ineligible to Bid on or be Awarded any Public Work Contract or any other governmental or quasi-governmental debarment list.
- 10.5 A Bid shall not be awarded to persons or entities other than "Eligible Contractors". An "Eligible Contractor" for purposes of this Section, is a Contractor that has a satisfactory record of business integrity. A Contractor shall be deemed to lack the requisite record of business integrity if any of the following criteria are met within or during the period commencing ten (10) years prior to the Bid Opening.
1. Criminal conduct in connection with government contracts or the conduct of business activities involving: a) the infliction, attempted infliction, or threat of death, intentional personal injury, or intentional property damage, in connection with involvement in a pattern of racketeering, labor racketeering, extortion, obstruction of justice, or other comparable crimes; b) bribery, fraud, bid rigging, embezzlement, theft, perjury, forgery, or other comparable crimes; c) serious moral turpitude, fundamental lack of integrity, or a pattern or practice of knowing disregard for the law so as to call into question the integrity of the proposed Contractor; OR d) conspiracy to do any of the above acts. Evidence of such conduct shall consist of (A) (1) a judgment of conviction, (2) a pending criminal indictment, or (3) a formal grant of immunity in connection with a criminal prosecution, in each case of a proposed Contractor, any director or officer, any principal, and any employee primarily responsible for contractor procedures, or any holder of five percent (5%) or more of the shares or equity of the proposed Contractor; or (B) any ongoing criminal investigation by a law enforcement agency in which the proposed Contractor, any director or officer, any principal, employee primarily responsible for contracting procedures, or any holder of five percent (5%) or more of the share or equity of the proposed Contractor or any affiliate of the proposed Contractor is a target.
 2. An actual determination by a person or entity which has jurisdiction of a willful noncompliance with the prevailing wage requirements of Section 220 of the Labor Law by the proposed Contractor or any affiliate thereof.
 3. An actual determination by a person or entity which has jurisdiction of a significant willful violation of the Workers' Compensation Law, including, but not limited to, the failure to maintain required workers' compensation or liability coverage.
 4. An actual determination by a person or entity which has jurisdiction of a submission by the proposed Contractor to a government agency of a false or misleading statement on a uniform questionnaire or other form in connection with a bid or proposal for, or award of a Contract or request for approval of a subcontractor.

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5. A conviction or judgment of civil liability against the proposed Contractor for fraud in connection with a bid or proposal for or award of a Contract or request for approval of a subcontract.
6. Debarment or current suspension of the proposed Contractor for reasons of business integrity from consideration for the award of contracts with a government, governmental entity of public authority pursuant to any procedure enacted by statute or adopted by regulation providing for notice and hearing.
7. Arrears for more than one year on income, sales or payroll taxes.
8. Contractors not being able to demonstrate having successfully completed construction projects of a similar scope and nature to the Work of this project with respect to each of the following project specific characteristics, as applicable to each Contract:
 - a. Multi-phase, multi-prime construction projects of equivalent construction scope and time frames as those indicated for this project, including new building, building additions and building renovations for NYS public schools.
 - b. Renovation, reconstruction and replacement of existing structural, mechanical, electrical, plumbing, and conveying infrastructure systems, assemblies and building components within occupied NYS public schools.
 - c. Additions, renovation, reconstruction and replacement of existing exterior building elements including windows, doors and frames, roofing systems and assemblies, skylights at occupied NYS public schools.
 - d. Renovation, reconstruction and replacement of existing exterior site elements including grandstands, parking lots, fields and running tracks, at sites with occupied NYS public schools.

Add the following ARTICLE 11:

ARTICLE 11: SUBCONTRACTORS AND OTHERS

- 11.1 The identity of Subcontractors, other persons, and organizations are to be submitted to the Owner in advance of the Notice of Award. The apparent Successful Bidder and any other Bidders so requested shall within five (5) days after the day of the Bid Opening submit to Owner the Material / Subcontractor list of all Subcontractors and other persons and organizations (including those who are to furnish the principal items of material and equipment) proposed for those portions of the Work. Such list shall be accompanied by an experience statement with pertinent information as to similar projects and other evidence of qualification for each such Subcontract, person and organization if requested by Owner. If Owner or Architect after due investigation has reasonable objection to any proposed Subcontractor, other person or organization, either may before giving the Notice of Award request the apparent Successful Bidder to submit an acceptable substitute without an increase in bid price. If the apparent Successful Bidder declines to make a substitution, the Contract may not be awarded to such Bidder, and his declining to make such substitution can constitute grounds for sacrificing his bid security. Any Subcontractor, other person or organization so listed and to whom Owner and Architect does not make written objection prior to the giving of the Notice of Award will be deemed acceptable to Owner and Architect.
- 11.2 No Contractor shall be required to employ any Subcontractor, other person or organization against whom he has reasonable objection.

Add the following ARTICLE 12:

ARTICLE 12: REQUIREMENTS FOR INSURANCE

- 12.1 The requirements for Contractor's insurance are stated in the General Conditions with the requirements for delivery of Certificates of Insurance.

00 210 - SUPPLEMENTARY INSTRUCTIONS TO BIDDERS
PAGE 10

- 12.2 The successful Bidder shall, within five (5) days from the date of the Notice of Award, deliver to Owner for their review and approval, the required policies of insurance. Upon approval, the policies will be returned to the Bidder and he shall submit Certificates of Insurance to the Owner as stated in the General Conditions.

Add the following ARTICLE 13:

ARTICLE 13: QUANTITY, DELIVERY, AND APPROPRIATION

- 13.1 Unless otherwise specified in the Bid Form, Supplementary Conditions, or General Requirements for an individual class of commodity, the quantities listed in the Bid Form are estimates only, and the Owner does not guarantee to purchase any definite quantities. The amount purchased, however, shall be all of the Owner's requirements during the term of the Contract, whether they be more or less than the estimate given.
- 13.2 The Owner reserves the right to purchase additional quantities, if the need may indicate, at the same unit price as established within the Contract during the term of the Contractor.

Add the following ARTICLE 14:

ARTICLE 14: PREVAILING WAGE RATES

- 14.1 The NYS Prevailing Wage Rate determinations are included in Section 00920.

Add the following ARTICLE 15:

ARTICLE 15: ACCESS TO THE SITE

- 15.1 Access to the Site: Bidders will be permitted access to the site prior to the scheduled Bid Opening Date and Time on Monday through Friday from 9:00 AM until 3:00 PM, except legal holidays.

Contact RSA Architects prior to arriving at the site to arrange access to the site prior to the scheduled Bid Opening Date and time.

Name: Larry C. Apgar
Title: CEO
Address: 1054 James Street, Syracuse, NY 13203
Contact #: 315-472-7761

**CAPITAL PROJECT - BUS GARAGE BUILDING RENOVATIONS & FUEL TANK
REPLACEMENTS**

**at
TULLY CENTRAL SCHOOL DISTRICT
TULLY, NEW YORK**

The Board of Education of the Tully Central School District at Tully, NY invites sealed bids for **Capital Project – BUS GARAGE BUILDING RENOVATIONS & FUEL TANK REPLACEMENTS**.

Bids will be received by the Board of Education at the Tully Central School District (FedEx or manually delivered) at the **Tully CSD District Office**, 20 State St., Tully, NY 13159 until 3:00 PM, April 4, 2024 at which time the bids will be publicly opened and read aloud at the **Tully Junior-Senior High School Library** 5848 U.S. Route 80, Tully, NY 13159.

THE OWNER RESERVES THE RIGHT TO REJECT ANY AND ALL BIDS.

The undersigned _____
Contractor

Address

The undersigned hereby declares that he has carefully examined all Bidding and Contract Documents dated August 30, 2023 as prepared by Robertson Strong Apgar, Architects, P.C. and that he has personally inspected the actual location of the work, together with the local sources of supply, has satisfied himself as to all the quantities and conditions, and understands that in signing this Proposal he waives all right to plead any misunderstanding regarding the same.

The undersigned further understands and agrees that he is to do, perform and complete all the work in accordance with the Contract Documents and to accept in full compensation therefor the amount of the Total Bid, modified by such additive or deductive alternates, if any, as are accepted by the Board of Education.

Each bidder shall sign and include with his bid proposal the Non-collusive Bidding Certificate.

BASE BID:

GENERAL CONSTRUCTION

We agree, without reservation, to perform and substantially complete all work in the contract documents

For the Lump Sum of _____

Dollars (\$_____ **).**

TANK DELIVERY DATES

We anticipate the delivery of the Fiberglass tanks as follows: _____ month and year.

We anticipate the delivery of the Urethane coated steel tanks as follows: _____ month and year.

CONSTRUCTION ALLOWANCE:

00 410 –FORM OF PROPOSAL - GENERAL CONSTRUCTION
PAGE 2

The undersigned further agrees that his Base Bid includes an allowance of Twenty-Five Thousand dollars (\$25,000) to be used for contaminated soil removal and a contingency allowance of Ten Thousand (\$10,000) to be used as directed by the Architect with approval from the Owner.

ALTERNATES:

ALTERNATE GC-01: (Canopy - replace concrete foundation) The Bidder shall state the amount to be **added** to the base bid to add the replacement of the concrete foundation for the canopy and associated site work including: concrete slab replacement, removal of slabs and existing concrete foundation, bollard removal and replacement, dispensing equipment removal and reinstalling, island removal and replacement with curbs as indicated on drawings and in the specifications or as required to complete the work. All excavation and backfill, also paving repair as necessary.

Add _____ Dollars (\$_____)

ALTERNATE GC-02: (Steel column repair) The Bidder shall state the amount to be **added** to the base bid to add steel column repair, as indicated on drawings and in the specifications. All work to meet standards of AISI.

Add _____ Dollars (\$_____)

ALTERNATE GC-03: (Replace man door and frame) The Bidder shall state the amount to be **added** to the base bid to add replacing two (2) man doors at the bus garage with FRP doors and frames, as indicated or necessary work for complete installation. Doors and frames to be mfg. SpecialLite or equal of heavy grade fiberglass reinforced polymer materials

Add _____ Dollars (\$_____)

ALTERNATE GC-04: (Provide Urethane Resin Coated Steel in lieu of Fiberglass tank) The Bidder shall state the amount to be **deducted** from the base bid for not installing a split, dual walled fiberglass tank, but instead install a urethane resin coated tank in kind.

Deduct _____ Dollars (\$_____)

UNIT PRICES:

It may be necessary to make additions or subtractions to the contract amount by implementing below listed unit prices. The Bidder shall set forth the cost of all unit prices listed below. Should the work listed below be increased or decreased from the amounts shown on the Contract Drawings and/or Specifications, upon written notice from the Architect, the undersigned Bidder agrees that the prices quoted below (including all insurance, applicable taxes, equipment, overhead and profit) shall be the basis of his compensation or deduction, as the case may be, for such increase or decrease in this work. All work added shall be at the quoted unit prices. See Section 01 2200.

1. Unit Price GC-1: Additional paving replacement:
 - a. Description: Removal and replacement of existing heavy duty asphalt paving.
 - b. Per specification Section 32 1216
 - c. Unit of Measurement: Per sq. yard \$_____ / SY

**00 410 –FORM OF PROPOSAL - GENERAL CONSTRUCTION
PAGE 3**

2. Unit Price GC-2: Additional contaminated soil removal and disposal:
- a. Description: Removal and disposal of contaminated soil.
 - b. Per all codes and NYS DEC requirements.
 - c. Unit of Measurement: Per cubic yard. \$_____ / CY

BID SECURITY:

The undersigned submits herewith Bid Security in the amount of 5% of the base bid.

Bid Bond _____ Certified Check _____

RECEIPT OF THE FOLLOWING ADDENDA IS HEREBY ACKNOWLEDGED:

NO. _____ dated _____. NO. _____ dated _____.

NO. _____ dated _____. NO. _____ dated _____.

NO. _____ dated _____. NO. _____ dated _____.

SUBSTITUTION LIST

Contractor's Base Bid as set forth in the proposal shall be based on materials, methods and equipment specified, or accepted by addenda. Contractor may propose substitute materials listing below the amount to be added or deducted from the base bid if the substitution is used. Acceptance or rejection of the substitute materials is at the discretion of the Owner. Proposed substitutions will not be considered as a basis for award of contract.

<u>Materials</u>	<u>Manufacturer</u>	<u>Add/Deduct</u>

RIGHT TO WAIVE OR REJECT

In submitting this Bid, it is understood that the right is reserved by the Owner to accept or reject any or all bids.

WITHDRAWAL OF BIDS

It is agreed that this bid may not be withdrawn for a period of forty-five (45) calendar days after closing time of same.

PERFORMANCE-PAYMENT BOND

The undersigned further agrees, if awarded the Contract, to execute and deliver to the Owner within ten (10) calendar days of the signing of the Contract satisfactory combined Performance-Payment Bond in form bound, in a sum equal to the full amount of the Contract.

TIME

00 410 –FORM OF PROPOSAL - GENERAL CONSTRUCTION
PAGE 4

We agree to commence work when directed by the Owner to proceed, and to complete fully said work as specified in 01 1100, Summary of Project.

If written notice of the acceptance of this bid is delivered to the undersigned within forty-five days after the date of the opening of bids, or any time thereafter before this bid is withdrawn, the undersigned will within ten (10) days after the date of such delivery execute and deliver a contract in the form of AIA Document A101.

Printed Name and Title: _____

Signature: _____

Title: _____

Company: _____

Address: _____

City/State: _____

Date: _____

NON-COLLUSIVE BIDDING CERTIFICATION

SEC. 103-d NYS MUNICIPAL LAW, AS AMENDED

- (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 certified as to its own organization, under penalty of perjury, that to the best of 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 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.

(The certificate should be signed by an officer if the bidder is a corporation, or by a principal if the bidder is unincorporated. Bids will be declared "informal" in the event no signature appears on this form.)

NAME_____

TITLE_____

NAME_____

TITLE_____

PERFORMANCE BOND INFORMATION FORM

City/Town/Village _____

School District _____

Construction Contract Number _____

Name of Contract _____

Name of Contractor _____

Address _____

Entity Issuing Security Bond _____

Address _____

Bonding Agent _____

Address _____

Amount of Bid _____

Duration of Bond From: _____ To: _____

Bond Identification Number _____

**00 415 GENERAL CONTRACTOR SUB LIST
PAGE 2**

**** END OF SECTION ****

**CAPITAL PROJECT - BUS GARAGE BUILDING RENOVATIONS & FUEL TANK
REPLACEMENTS**

**at
TULLY CENTRAL SCHOOL DISTRICT
TULLY, NEW YORK**

The Board of Education of the Tully Central School District at Tully, NY invites sealed bids for **Capital Project – BUS GARAGE BUILDING RENOVATIONS & FUEL TANK REPLACEMENTS**.

Bids will be received by the Board of Education at the Tully Central School District (FedEx or manually delivered) at the **Tully CSD District Office**, 20 State St., Tully, NY 13159 until 3:00 PM, April 4, 2024 at which time the bids will be publicly opened and read aloud at the **Tully Junior-Senior High School Library** 5848 U.S. Route 80, Tully, NY 13159.

THE OWNER RESERVES THE RIGHT TO REJECT ANY AND ALL BIDS.

The undersigned _____
H AND V Contractor

Address

The undersigned hereby declares that he has carefully examined all Bidding and Contract Documents dated August 30, 2023 as prepared by Robertson Strong Apgar, Architects, P.C. and that he has personally inspected the actual location of the work, together with the local sources of supply, has satisfied himself as to all the quantities and conditions, and understands that in signing this Proposal he waives all right to plead any misunderstanding regarding the same.

The undersigned further understands and agrees that he is to do, perform and complete all the work in accordance with the Contract Documents and to accept in full compensation therefor the amount of the Total Bid, modified by such additive or deductive alternates, if any, as are accepted by the Board of Education.

Each bidder shall sign and include with his bid proposal the Non-collusive Bidding Certificate.

BASE BID:

HEATING AND VENTILATING CONSTRUCTION

We agree, without reservation, to perform and substantially complete all work in the contract documents

For the Lump Sum of _____

Dollars (\$_____ **).**

CONSTRUCTION ALLOWANCE:

The undersigned further agrees that his Base Bid includes an Eighty-Five Hundred dollar (\$8,500) contingency allowance to be used as directed by Architect with approval from the Owner.

ALTERNATES:

ALTERNATE HV-01: [Move gas meter to exterior] The Bidder shall state the amount to be **added** to the base bid to move the gas meter to the exterior of the Bus Garage as indicated on drawings and in the specifications or as required to complete this work. All associated patching of

00 420 –FORM OF PROPOSAL – HEATING & VENTILATION CONSTRUCTION
PAGE 2

surfaces and finishes is to be included. All work to be coordinated with and per requirements of National Grid.

Add _____ Dollars (\$_____)

ALTERNATE HV-02: [Replace existing furnace in Bus Garage bay area.] The Bidder shall state the amount to be **added** to the base bid to replace the pier footings for the canopy columns if required as indicated in the contract documents.

Add _____ Dollars (\$_____)

ALTERNATE HV-03: [Replace existing furnace in Bus Garage office/service area.] The Bidder shall state the amount to be **added** to the base bid to replace the pier footings for the canopy columns if required as indicated in the contract documents.

Add _____ Dollars (\$_____)

UNIT PRICES:

It may be necessary to make additions or subtractions to the contract amount by implementing below listed unit prices. The Bidder shall set forth the cost of all unit prices listed below. Should the work listed below be increased or decreased from the amounts shown on the Contract Drawings and/or Specifications, upon written notice from the Architect, the undersigned Bidder agrees that the prices quoted below (including all insurance, applicable taxes, equipment, overhead and profit) shall be the basis of his compensation or deduction, as the case may be, for such increase or decrease in this work. All work added shall be at the quoted unit prices. See Section 01 2200.

NONE

BID SECURITY:

The undersigned submits herewith Bid Security in the amount of 5% of the base bid.

Bid Bond _____ Certified Check _____

RECEIPT OF THE FOLLOWING ADDENDA IS HEREBY ACKNOWLEDGED:

NO. _____ dated _____. NO. _____ dated _____.

NO. _____ dated _____. NO. _____ dated _____.

NO. _____ dated _____. NO. _____ dated _____.

SUBSTITUTION LIST

Contractor's Base Bid as set forth in the proposal shall be based on materials, methods and equipment specified, or accepted by addenda. Contractor may propose substitute materials listing below the amount to be added or deducted from the base bid if the substitution is used. Acceptance or rejection of the substitute materials is at the discretion of the Owner. Proposed substitutions will not be considered as a basis for award of contract.

Materials	Manufacturer	Add/Deduct

00 420 –FORM OF PROPOSAL – HEATING & VENTILATION CONSTRUCTION
PAGE 3

RIGHT TO WAIVE OR REJECT

In submitting this Bid, it is understood that the right is reserved by the Owner to accept or reject any or all bids.

WITHDRAWAL OF BIDS

It is agreed that this bid may not be withdrawn for a period of forty-five (45) calendar days after closing time of same.

PERFORMANCE-PAYMENT BOND

The undersigned further agrees, if awarded the Contract, to execute and deliver to the Owner within ten (10) calendar days of the signing of the Contract satisfactory combined Performance-Payment Bond in form bound, in a sum equal to the full amount of the Contract.

TIME

We agree to commence work when directed by the Owner to proceed, and to complete fully said work as specified in 01 1100, Summary of Project.

If written notice of the acceptance of this bid is delivered to the undersigned within forty-five days after the date of the opening of bids, or any time thereafter before this bid is withdrawn, the undersigned will within ten (10) days after the date of such delivery execute and deliver a contract in the form of AIA Document A101.

Printed Name and Title: _____

Signature: _____

Title: _____

Company: _____

Address: _____

City/State: _____

Date: _____

NON-COLLUSIVE BIDDING CERTIFICATION

SEC. 103-d NYS MUNICIPAL LAW, AS AMENDED

- (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 certified as to its own organization, under penalty of perjury, that to the best of 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 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.

(The certificate should be signed by an officer if the bidder is a corporation, or by a principal if the bidder is unincorporated. Bids will be declared "informal" in the event no signature appears on this form.)

NAME_____

TITLE_____

NAME_____

TITLE_____

PERFORMANCE BOND INFORMATION FORM

City/Town/Village _____

School District _____

Construction Contract Number _____

Name of Contract _____

Name of Contractor _____

Address _____

Entity Issuing Security Bond _____

Address _____

Bonding Agent _____

Address _____

Amount of Bid _____

Duration of Bond From: _____ To: _____

Bond Identification Number _____

**00 501 STANDARD FORM OF AGREEMENT
PAGE 1**

- 1.01 The following "Standard Form of Agreement" AIA Document A101, 2017 is a part of the Bid Documents .

**** END OF SECTION ****

AIA® Document A101™ – 2017

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

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

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

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

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

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

The Owner and Contractor agree as follows.

ADDITIONS AND DELETIONS:

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

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

TABLE OF ARTICLES

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

EXHIBIT A INSURANCE AND BONDS

ARTICLE 1 THE CONTRACT DOCUMENTS

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

ARTICLE 2 THE WORK OF THIS CONTRACT

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

ARTICLE 3 DATE OF COMMENCEMENT AND SUBSTANTIAL COMPLETION

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

(Check one of the following boxes.)

☐ The date of this Agreement.

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

☐ Established as follows:

(Insert a date or a means to determine the date of commencement of the Work.)

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

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

§ 3.3 Substantial Completion

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

(Check one of the following boxes and complete the necessary information.)

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

[] By the following date:

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

Portion of Work

Substantial Completion Date

§ 3.3.3 If the Contractor fails to achieve Substantial Completion as provided in this Section 3.3, liquidated damages, if any, shall be assessed as set forth in Section 4.5.

ARTICLE 4 CONTRACT SUM

§ 4.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor's performance of the Contract. The Contract Sum shall be (\$), subject to additions and deductions as provided in the Contract Documents.

§ 4.2 Alternates

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

Item

Price

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

Item

Price

Conditions for Acceptance

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

Item

Price

§ 4.4 Unit prices, if any:

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

Item

Units and Limitations

Price per Unit (\$0.00)

§ 4.5 Liquidated damages, if any:

(Insert terms and conditions for liquidated damages, if any.)

§ 4.6 Other:

(Insert provisions for bonus or other incentives, if any, that might result in a change to the Contract Sum.)

ARTICLE 5 PAYMENTS

§ 5.1 Progress Payments

§ 5.1.1 Based upon Applications for Payment submitted to the Architect by the Contractor and Certificates for Payment issued by the Architect, the Owner shall make progress payments on account of the Contract Sum to the Contractor as provided below and elsewhere in the Contract Documents.

§ 5.1.2 The period covered by each Application for Payment shall be one calendar month ending on the last day of the month, or as follows:

§ 5.1.3 Provided that an Application for Payment is received by the Architect not later than the day of a month, the Owner shall make payment of the amount certified to the Contractor not later than the day of the month. If an Application for Payment is received by the Architect after the application date fixed above, payment of the amount certified shall be made by the Owner not later than () days after the Architect receives the Application for Payment.

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

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

§ 5.1.5 Applications for Payment shall show the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment.

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

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

- .1 That portion of the Contract Sum properly allocable to completed Work;
- .2 That portion of the Contract Sum properly allocable to materials and equipment delivered and suitably stored at the site for subsequent incorporation in the completed construction, or, if approved in advance by the Owner, suitably stored off the site at a location agreed upon in writing; and
- .3 That portion of Construction Change Directives that the Architect determines, in the Architect's professional judgment, to be reasonably justified.

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

- .1 The aggregate of any amounts previously paid by the Owner;
- .2 The amount, if any, for Work that remains uncorrected and for which the Architect has previously withheld a Certificate for Payment as provided in Article 9 of AIA Document A201–2017;
- .3 Any amount for which the Contractor does not intend to pay a Subcontractor or material supplier, unless the Work has been performed by others the Contractor intends to pay;
- .4 For Work performed or defects discovered since the last payment application, any amount for which the Architect may withhold payment, or nullify a Certificate of Payment in whole or in part, as provided in Article 9 of AIA Document A201–2017; and
- .5 Retainage withheld pursuant to Section 5.1.7.

§ 5.1.7 Retainage

§ 5.1.7.1 For each progress payment made prior to Substantial Completion of the Work, the Owner may withhold the following amount, as retainage, from the payment otherwise due:

(Insert a percentage or amount to be withheld as retainage from each Application for Payment. The amount of retainage may be limited by governing law.)

§ 5.1.7.1.1 The following items are not subject to retainage:

(Insert any items not subject to the withholding of retainage, such as general conditions, insurance, etc.)

§ 5.1.7.2 Reduction or limitation of retainage, if any, shall be as follows:

(If the retainage established in Section 5.1.7.1 is to be modified prior to Substantial Completion of the entire Work, including modifications for Substantial Completion of portions of the Work as provided in Section 3.3.2, insert provisions for such modifications.)

§ 5.1.7.3 Except as set forth in this Section 5.1.7.3, upon Substantial Completion of the Work, the Contractor may submit an Application for Payment that includes the retainage withheld from prior Applications for Payment pursuant to this Section 5.1.7. The Application for Payment submitted at Substantial Completion shall not include retainage as follows:

(Insert any other conditions for release of retainage upon Substantial Completion.)

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

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

§ 5.2 Final Payment

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

- .1 the Contractor has fully performed the Contract except for the Contractor's responsibility to correct Work as provided in Article 12 of AIA Document A201–2017, and to satisfy other requirements, if any, which extend beyond final payment; and
- .2 a final Certificate for Payment has been issued by the Architect.

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

§ 5.3 Interest

Payments due and unpaid under the Contract shall bear interest from the date payment is due at the rate stated below, or in the absence thereof, at the legal rate prevailing from time to time at the place where the Project is located.

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

%

ARTICLE 6 DISPUTE RESOLUTION

§ 6.1 Initial Decision Maker

The Architect will serve as the Initial Decision Maker pursuant to Article 15 of AIA Document A201–2017, unless the parties appoint below another individual, not a party to this Agreement, to serve as the Initial Decision Maker.

(If the parties mutually agree, insert the name, address and other contact information of the Initial Decision Maker, if other than the Architect.)

§ 6.2 Binding Dispute Resolution

For any Claim subject to, but not resolved by, mediation pursuant to Article 15 of AIA Document A201–2017, the method of binding dispute resolution shall be as follows:

(Check the appropriate box.)

- ☐ Arbitration pursuant to Section 15.4 of AIA Document A201–2017
- ☐ Litigation in a court of competent jurisdiction
- ☐ Other *(Specify)*

If the Owner and Contractor do not select a method of binding dispute resolution, or do not subsequently agree in writing to a binding dispute resolution method other than litigation, Claims will be resolved by litigation in a court of competent jurisdiction.

ARTICLE 7 TERMINATION OR SUSPENSION

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

§ 7.1.1 If the Contract is terminated for the Owner's convenience in accordance with Article 14 of AIA Document A201–2017, then the Owner shall pay the Contractor a termination fee as follows:

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

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

ARTICLE 8 MISCELLANEOUS PROVISIONS

§ 8.1 Where reference is made in this Agreement to a provision of AIA Document A201–2017 or another Contract Document, the reference refers to that provision as amended or supplemented by other provisions of the Contract Documents.

§ 8.2 The Owner's representative:

(Name, address, email address, and other information)

§ 8.3 The Contractor's representative:

(Name, address, email address, and other information)

§ 8.4 Neither the Owner's nor the Contractor's representative shall be changed without ten days' prior notice to the other party.

§ 8.5 Insurance and Bonds

§ 8.5.1 The Owner and the Contractor shall purchase and maintain insurance as set forth in AIA Document A101™–2017, Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum, Exhibit A, Insurance and Bonds, and elsewhere in the Contract Documents.

§ 8.5.2 The Contractor shall provide bonds as set forth in AIA Document A101™–2017 Exhibit A, and elsewhere in the Contract Documents.

§ 8.6 Notice in electronic format, pursuant to Article 1 of AIA Document A201–2017, may be given in accordance with AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, if completed, or as otherwise set forth below:

(If other than in accordance with AIA Document E203–2013, insert requirements for delivering notice in electronic format such as name, title, and email address of the recipient and whether and how the system will be required to generate a read receipt for the transmission.)

§ 8.7 Other provisions:

ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

§ 9.1 This Agreement is comprised of the following documents:

- .1 AIA Document A101™–2017, Standard Form of Agreement Between Owner and Contractor
- .2 AIA Document A101™–2017, Exhibit A, Insurance and Bonds
- .3 AIA Document A201™–2017, General Conditions of the Contract for Construction
- .4 AIA Document E203™–2013, Building Information Modeling and Digital Data Exhibit, dated as indicated below:

(Insert the date of the E203–2013 incorporated into this Agreement.)

- .5 Drawings

Number	Title	Date
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- .6 Specifications

Section	Title	Date	Pages
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- .7 Addenda, if any:

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

- .8 Other Exhibits:

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

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

[] The Sustainability Plan:

Title	Date	Pages
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[] Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages
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.9 Other documents, if any, listed below:

(List here any additional documents that are intended to form part of the Contract Documents. AIA Document A201™-2017 provides that the advertisement or invitation to bid, Instructions to Bidders, sample forms, the Contractor's bid or proposal, portions of Addenda relating to bidding or proposal requirements, and other information furnished by the Owner in anticipation of receiving bids or proposals, are not part of the Contract Documents unless enumerated in this Agreement. Any such documents should be listed here only if intended to be part of the Contract Documents.)

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

OWNER (Signature)

(Printed name and title)

CONTRACTOR (Signature)

(Printed name and title)

**00 701 – GENERAL CONDITIONS OF THE CONTRACT
PAGE 1**

- 1.01 The following "General Conditions of the Contract for Construction" AIA Document A201, 2017 is a part of the Bid Documents. Where any part of the General Conditions of the Contract is modified or voided in these project documents, the unaltered provisions of that part shall remain in effect.

**** END OF SECTION ****

SECTION 00 801 - SUPPLEMENTARY CONDITIONS

The following supplements modify the
"General Conditions of the Contract for Construction"
AIA Document A201 2007 Edition

GENERAL CONDITIONS

The General Conditions of the Contract for Construction, AIA Document A201-2007 is part of the Contract Documents and shall govern the work under this Contract.

SUPPLEMENTARY CONDITIONS

These Supplementary General Conditions amend, supplement, and/or delete portions of the General Conditions. The AIA General Conditions shall remain in full force and effect except to the extent modified below. The article numbers in these Supplementary General Conditions correspond to (or are in addition to) the Article numbers in the AIA General Conditions - AIA Document A201 - 2007.

ARTICLE 1: GENERAL PROVISIONS

1.1 BASIC DEFINITIONS

Add the following to the end of **1.1.2**:

Subcontractors shall assume the same obligations to the contractors as the contractor has to the Owner and the Architect under General Conditions AIA A201 2007. All relationships and responsibilities of the Contractor to the Owner or Architect as defined in General Conditions AIA A201 2007 shall become those of the subcontractor to the contractor.

1.1.2.1 Add the following:

1.1.2.1 Where the term "Contract" or "Prime Contract" is used in the General Conditions, Supplementary Conditions, and other Contract Documents, it shall mean the separate Owner-Contractor Agreement between the Owner and each Prime Contractor identified in Division 1.

1.2 CORRELATION, AND INTENT OF THE CONTRACT DOCUMENTS

1.2.1 Change the word "indicated" to read "intended" in the last line of **1.2.1**.

1.2.1.1 Add the following section:

1.2.2.1 However, the Contractor and each Subcontractor shall evaluate and satisfy themselves as to the conditions and limitations under which the Work is to be performed, including, without limitation, (1) the location, condition, layout and nature of the Project site and surrounding areas; (2) generally prevailing weather conditions including lake effect snow, rain, clouds and temperature; (3) anticipated labor supply and costs; (4) availability and cost

of materials, tools and equipment; (5) the presence of multiple prime contractors on publicly bid work; (6) conducting operations in and around a Public School; (7) Owner occupancy requirements and constraints; (8) Site Safety plan; (9) Logistics plan; (10) Phased construction plan; and (11) Conducting operations under a Progress Schedule agreed upon between each of the prime contractors. 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 Owner shall not be required to make any adjustment in either the Contract Sum or Contract Time in connection with any failure by the Contractor or any Subcontractor to comply with the requirements of this Paragraph. See Section 3.19.

1.2.1.2 Add the following: 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 and/or (2) comply with the more stringent requirement all in accordance with the Architect's interpretation. The terms and conditions of this paragraph shall not relieve the Contractor of any of the obligations set forth elsewhere in the Contract Documents.

1.2.1.3 Work shown on the Drawings and not described in the Specifications or specified and not drawn, but which is reasonably implied, evidently necessary or usually provided to complete the work, shall be included as if both shown and specified.

1.2.1.4 Work under all items in the Contract must be carried out to meet field conditions and in accordance with the Contract Drawings and Specifications.

1.2.1.5 All dimensions shown on the Drawings are subject to verification of actual dimensions by the Contractor. It is the responsibility of the Contractor to verify all dimensions in the field to insure proper and accurate fit of materials and items to be installed. Before ordering any materials or doing any Work, the Contractor and each Subcontractor shall verify all existing conditions and measurements. No extra charge or compensation will be allowed on account of differences between actual dimensions and the dimensions indicated on the Drawings. Any differences which may be found shall be submitted to the Architect for resolution before proceeding with the Work.

1.2.1.6 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 requirement either or both in accordance with the Architect's interpretation. The terms and conditions of this paragraph shall not relieve the Contractor of any of the obligations set forth in Paragraphs 3.2 and 3.7.

1.2.2 Add the following:

1.2.2.1 Add the following at the end of **1.2.2**:

1.2.2.1 It shall be the Contractor's responsibility, when sub-contracting any portion of his work, to arrange or group items of work under particular trades to conform with then prevailing customs of the trade, regardless of the particular Divisions and Sections of the Specifications in which the work is described.

1.2.3 Add the following:

1.2.3.1 Miscellaneous Definitions. The following definitions shall apply to the Contract Documents:

1.2.3.1.1 Where the word “remove” appears, it shall be interpreted to mean “dismantle and/or take away from premises without added cost to Owner”.

1.2.3.1.2 Where the word “extract” appears, it shall be interpreted to mean “carefully dismantle and/or store where directed by Owner and reinstall as indicated”.

1.2.3.1.3 'as accepted,' 'acceptable substitute,' 'for review', 'approved', 'equal', 'proper' or 'adequate' shall be as determined by the Architect who is the sole judge of the quality and suitability of the Work or any proposed substitutions. Where used in conjunction with the Architect's response to submittals, requests, applications, inquiries, reports, and claims by the Contractor, the meaning will be subject to the limitations of the Architect's responsibilities and duties as stated in the General and Supplementary Conditions. In no case will 'accepted' by the Architect be interpreted as an assurance to the Contractor that the requirements of the Contract Documents have been fulfilled.

1.2.3.1.4 'furnish' or 'supply' means supply and deliver to the Project site or other designated location, ready for unloading, unpacking, storing, assembly, installation, application, erection, or other form of incorporation into the Project, and maintained ready for use. Supply and deliver products requiring additional or supplemental fitting, assembly, fabrication, or incorporation into other elements of the Project directly to the fabricator, installer or manufacturer as required.

1.2.3.1.5 'install' means unload, unpack, use, fit, attach, assemble, apply, place, anchor, erect, finish, cure, protect, clean, and similar operations required to properly incorporate work into the Project, place into operation and service.

1.2.3.1.6 The word "Provide" shall mean furnish and install and shall include, without limitation, all labor, materials, equipment, transportation, services and other items required to complete the Work.

1.2.3.1.7 'replace' means remove designated, damaged, rejected, defective, unacceptable, or non-conforming work from the Project and provide new work meeting the requirements of the Contract Documents in place thereof.

1.2.3.1.8 The word 'include,' in any form other than 'inclusive,' is non-limiting and is not intended to mean 'all-inclusive.'

1.2.4 Add the following:

1.2.4.1 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 operation 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.

1.2.4.2 Where items are specified by the use of a reference standard not bound in the specifications, the date of the reference standard shall be the latest edition at the time of signing the Contract except as specifically indicated otherwise.

1.2.4.3 The 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 roughing measurement, or to serve as shop drawings. All Contractors shall cooperate with the other Contractors in determining the construction of systems, running of pipe lines, and locating equipment.

1.2.4.3.1 Any necessary variations shall be made to conform to the intent of the drawings. Each Contractor shall include in their bid amounts necessary to cover costs related to intersections or obstructions involving ducts, piping or any other equipment.

1.2.4.3.2 If tight conditions or interferences develop, each Contractor shall cooperate with the other Contractors to determine a mutually acceptable solution. The suggested solution shall be submitted to the Architect for comment and, if necessary, written approval.

1.2.4.3.3 The Contract Documents intend to describe a finished Project of such character and quality as described in and reasonably inferred from the Contract Documents. Each Contractor shall include in their bid price amounts sufficient to make its Work complete and operable, fitting with the Work of the other Contractors and the Owner. Failure to show details or to repeat on any drawing the figures or notes given on other Drawings or elsewhere in the Contract Documents shall not be the cause for additional charges or claims.

1.2.4.4 Where items are specified by the use of a reference standard not bound in the specifications, the date of the reference standard shall be the latest edition at the time of signing the Contract except as specifically indicated otherwise

1.4 INTERPRETATION

Add the following:

1.4.1 The terms “knowledge”, “recognize” and “discover” and their respective derivatives and similar terms in the contract documents, as used in reference to the Contractors, shall be interpreted to mean that which the Contractor knows (or should know), recognize (or should recognize) and discovers (or should discover) in exercising reasonable care, skill, and diligence as an experienced and competent Contractor performing work of similar size, type complexity. The expression “reasonably inferable” and similar terms in the Contract Documents shall be interpreted to mean reasonably inferable by such a Contractor

ARTICLE 2: OWNER

2.2 INFORMATION AND SERVICES REQUIRED OF THE OWNER:

2.2.2.1 Add the following:

2.2.2.1 The Owner shall secure and pay for the building permit, municipal permit fees for water and sewer connections, and required zoning regulation and permit fees.

2.2.3 Change to read as follows:

2.2.3 The Owner shall make available for inspection upon request, the available field survey or testing information showing known existing conditions.

Delete **2.2.5** in its entirety and substitute the following:

2.2.5 Each contractor signing an Owner/Contractor agreement will be furnished, free of charge, five (5) sets of project documents. Additional sets will be furnished upon written request for the cost for reproduction, postage and handling. Surplus sets of drawings and project manuals returned from unsuccessful bidders and not needed by the Owner will be furnished free of charge. The awarded Contractor is solely responsible for making timely arrangements for the procurement of such additional documents.

2.2.6 Add the following:

The Owner shall not supervise, direct, or have control or authority over, nor be responsible for, the Contractors' means, methods, techniques, sequences, or procedures of construction or the safety precautions and programs incident thereto, or for any failure of the Contractor to comply with laws or regulations applicable to the furnishing or performance of the Work. Owner will not be responsible for Contractor's failure to perform or furnish the Work in accordance with the Contract Documents.

2.4 OWNERS RIGHT TO CARRY OUT WORK

2.5 Add the following:

2.5 EXTENT OF OWNERS RIGHTS

2.5.1 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.

ARTICLE 3: CONTRACTOR

3.2 REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR

3.2.1 Delete the word "generally" in **3.2.1**.

Before the last sentence in **3.2.2**, add the following:

3.2.2 Any work performed after such discovery without the approval of the Architect shall be at the Contractor's risk and expense.

3.2.2 Delete the following phrase:

"... and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents ..."

3.2.4 Add the following to the end of the last sentence:

“ . . . unless the Contractor recognized, or with reasonable diligence should have recognized, such error, inconsistency, omission or difference and failed to report it to the Architect.”

Add the following sections:

3.2.5 The Contractor shall take field measurements, verify field conditions and compare such field measurements, conditions and other information known to the Contractor with the requirements of the Contract Documents before commencing construction in the applicable area. Errors, inconsistencies or omissions shall be immediately reported to the Architect.

3.2.6 Grades elevations, dimensions, or locations shown on any Drawings issued by the Architect are provided for the convenience of the Contractor and shall not relieve the Contractor of its obligation to verify these conditions in the field. Neither the Owner, Architect, shall be responsible for any inconsistencies between elevations, dimensions and/or actual field conditions.

3.2.7 The Contractor shall satisfy itself as to the accuracy of all grades, elevations, dimensions and locations. In all cases of interconnection of Work with existing or other work, the Contractor shall verify all dimensions relating to such existing or other work. Any errors due to the Contractor's failure to verify all such grades, elevations, locations or dimensions shall be promptly rectified by the Contractor without additional cost to the Owner.

3.2.8 The Owner shall be entitled to deduct from the Contract Sum amounts paid to the Architect for the Architect to evaluate and respond to the Contractor's requests for interpretation, where the information was available to the Contractor from study and comparison of the Contract Documents, field conditions, other Owner-provided information, Contractor-prepared coordination drawings, or prior Project correspondence or documentation.

3.2.9 The Contractor and each Subcontractor shall evaluate and satisfy themselves as to the conditions and limitations under which the Work is to be performed, including, without limitation, (1) the location, condition, 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 and equipment; and (5) other similar issues.

3.2.10 Off-site storage is the responsibility of the Contractor.

3.2.11 By executing this Agreement, the Contractor represents, except as to any reported errors, inconsistencies or omissions, the following are true:

3.2.11.1 The Contract Documents are sufficiently complete and detailed for the Contractor (1) to perform the Work required in accordance with their requirements; and, (2) to comply with all of the requirements of the Contract Documents.

3.2.11.2 The Work required by the Contract Documents including without limitation, all construction details, construction means, use of material, selection of equipment and requirements of product manufactures are consistent with (1) good and sound practices within construction industry; (2) generally prevailing and accepted industry standards applicable to the Work; (3) the requirements of any warranties applicable to the Work; and (4) all laws, ordinances, regulations, rules and orders to the extent that they bear upon the Contractor's performance of the Work.

3.2.12 The Owner shall not be required to make any adjustment in either the Contract Sum or Contract Time in connection with any failure by the Contractor or any Subcontractor to comply with the requirements of this Paragraph.

3.3 SUPERVISION AND CONSTRUCTION PROCEDURES

3.3.1 Add the following:

3.3.1 The Contractor is responsible for coordination of all parts of the Contractor's Work and the relationship of the Work of its subcontractors with the Work of other Contractors, and shall cross check all of its Instructions, Specifications, Drawings, Shop Drawings, and installations.

3.3.1 Add the following sections:

3.3.1.1 The Contractor shall

- .1** Review any specified construction or installation procedure, including those recommended by manufacturers;
- .2** Advise the Architect and the Construction Manager (if any):
 - .1** If the specified procedure deviates from good construction practice,
 - .2** If following the specified procedure will affect any warranties, including the Contractor's general warranty; or,
 - .3** Of any objections the Contractor may have to the procedure; and,
 - .4** Propose any alternative procedure which the Contractor will warrant.

Add the following:

3.3.4 Where equipment lines or piping and/or conduit are shown diagrammatically, the Contractor shall be responsible for the coordination and orderly arrangement of the various lines of piping and conduit included in the Work of his Contract. He shall coordinate the work of several Subcontractors and prevent all interference's between equipment, lines of piping, architectural features, and avoid any unsightly arrangements in the exposed areas.

3.3.5 The Prime Contractor, his employees and subcontractors, shall be subject to such reasonable restrictions regarding the conduct of work as the Owner may establish related to construction activities conducted in proximity to school educational activities. The Contractor shall be responsible for the enforcement among his employees and subcontractors of such reasonable restrictions.

3.3.6 Laying Out the Work:

3.3.6.1 The Contractor shall carefully lay out its Work in accordance with the Contract Documents and shall coordinate its Work with existing and new work of the other Contractor's and shall verify all lines and levels indicated in the Contract Documents that affect its work.

3.3.6.2 Adjustments required to suit field conditions shall be made only after Architect's review. The Contractor shall be responsible for the accuracy of layout and shall correct at the Contractor's own expense any work that the Contractor's forces have laid out incorrectly.

3.3.6.3 The General Trades Contractor shall furnish and erect all necessary batter boards, establish all lines and levels and connection therewith, and run all subsequent lines and levels as the work progresses in order to assure careful and accurate work true to the proper lines in accordance with the Contract Documents. Any batter boards, monuments, or marks of reference, which may for any reason become disturbed or destroyed, whether such displacement or destruction is caused by carelessness, accident, or by the elements, shall at all times, be promptly and accurately re-established by the General Trades Contractor.

3.3.6.4 The General Trades Contractor shall establish finished floor elevations and finished grade lines for the building for all Contractors when requested to do so; and shall establish center lines of all interior partitions on floor forms before concrete is placed in order that mechanical/electrical contractors will be able to place sleeves, etc., in proper locations.

3.3.6.5 The Contractor shall protect and preserve established reference points and shall make no changes or relocations without the prior written approval of the Architect. Contractor shall report to the Architect whenever any reference point is lost or destroyed or requires relocation because of necessary changes in grades or locations.

3.3.6.6 The General Trades Contractor shall be required to establish center lines, elevations and location of the General Trades Contractor's work when it is required for the benefit of other Contractors needing the information to coordinate location of their work.

3.3.7 Shut Downs: Such work as connections to existing sewers, plumbing, heating and electric systems, shall be done at a time agreeable to the Owner and Architect and shall be determined and agreed to well in advance of the actual doing of such work so as to interfere as little as possible with the operation and use of existing facilities. Shut downs must be coordinated through the designated representative of the Owner. The continued uninterrupted operation of all facilities is essential. If any existing facilities must be interrupted, the Contractor for the Work shall provide all necessary temporary facilities and connections necessary for maintaining existing facilities. No mechanical, heating, plumbing, sprinkler or electric services shall be interrupted at any time, except as approved in advance by the Owner. All communication systems must be maintained without interruption. As much related work as possible shall be performed prior to shut-downs, so as to minimize the period of shut-down. All material and manpower to do the work involved shall be at the job prior to interruption of services.

3.3.8 The Contractor represents that it is familiar with and shall adhere to the “*Uniform Standards for School Construction and Maintenance Projects*” set forth at 8 *New York Code of Rules and Regulations* §155.5 (8 NYCRR 155).

3.3.9 The Contractor shall:

3.3.9.1 Review all specified construction or installation procedures, including those recommended by manufacturers.

3.3.9.2 Advise the Architect (1) if a specified procedure deviates from good construction practice; (2) if following a procedure will affect any warranties, including the Contractor’s general warranty; (3) of any objections the Contractor may have the procedure; and (4) propose any alternative procedure which the Contractor will warrant.

3.3.10 Preconstruction Conference: Any Contractors working in a specific confined space may be required to conduct a preconstruction conference or meeting as deemed necessary by the Owner to coordinate work.

3.4 LABOR AND MATERIALS

3.4.3 Delete the remainder of the first sentence after the word “employees” in Section **3.4.3** and replace it with the following:

. . . , agents, Subcontractors and their agents or employees, and other persons performing any of the Work under Contract with the Contractor.

Add the following:

3.4.4 The Contractor shall not employ or subcontract with any person including, but not limited to, the Project Superintendent or entity to which the Owner has reasonable objection. Reasonable objection will include, but not be limited to, failure to timely and diligently perform or properly perform on prior projects for the Owner.

3.4.5 On receipt of signed Contract, the Prime 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, Contractor, with approval of the Architect, may accept delivery of such materials at any time, and may include cost of such materials in next monthly application for payment, provided such materials have actually been delivered to Contractor and properly stored by him with approval or under direction of the Architect either at the job site or in an approved storage shed or warehouse.

3.4.6 If stored off site, Contractor shall furnish proof of title by the Owner and provide adequate insurance coverage.

3.4.7 Contractor shall warrant that he has good title to all materials used by him as part of work of this Contract. No materials or supplies shall be purchased by Contractor or any of his subcontractors that are subject to any chattel mortgage, conditional sale or other agreement by which an interest is retained by the Seller.

3.4.8 Contractor shall deliver all materials at such times as will ensure speedy and uninterrupted progress of work.

3.4.9 All articles, materials and equipment shall be applied, installed, connected, used, cleaned, and conditioned in accord with directions of manufacturer unless otherwise specified herein.

3.4.10 All persons employed on the project shall be 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 the quality of workmanship is not otherwise defined, it shall be the best standards of workmanship for the applicable trade. The Architect shall determine whether or not the quality of workmanship is acceptable. If the workmanship for a portion of this work is not acceptable, same shall be removed and replaced at the Contractor's expense.

3.4.11 The Contractor shall not employ men, means, materials, or equipment that may cause strikes, work stoppages, or any disturbances by workman employed by the Contractor, or other contractors or subcontractors, on or in connection with the Work or the Project or the location thereof. The Contractor agrees that all disputes as to jurisdiction of trades shall be in effect either nationally or in the locality in which the work is being done and that it shall be bound and abide by all such adjustments and settlements of jurisdictional disputes, provided that the provisions of this article shall not be in violation or conflict with any provisions of law applicable to the settlement of such disputes.

3.4.12 The Contractor shall make every reasonable effort to avoid labor disputes and to insulate the Owner and Construction Manager from the effects of labor disputes should any arise. For the purposes of this article, every reasonable effort shall include, but not necessarily be limited to: (1) requiring employees, subcontractors, suppliers and others to use reserve gates which may be established for the project, (2) rearranging work schedules for the contractors work or the work of their subcontractors, and (3) including in contractors agreements with their subcontractors the right to fully implement all provisions of this article.

3.4.13 The Contractor and his subcontractors employed upon the work will be required to conform to the Labor Laws and the Various Acts amendatory and supplementary thereto and to all other laws, ordinances, and legal requirements applicable to the construction area.

3.4.14 Employees of the Contractor or subcontractors whose work is unsatisfactory to the Owner, Construction Manager or Architect/Engineer, or considered by them to be unskilled or otherwise objectionable, will be dismissed from the work upon notice from the Owner. Those dismissed employees shall be replaced so as not to delay progress of the work.

3.4.15 The Contractor and his subcontractors shall be responsible for protection of their work, the work of 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.

3.4.16 All work shall be executed in a thorough, substantial, workmanlike manner, in complete accordance with the manufacturer's most recent recommendations unless

otherwise specified or permitted by the Architect. A sufficient force of competent workmen, foremen, and superintendents shall be employed at all times to permit the work to be pursued with diligence until completion.

3.4.17 The Contractor shall provide the labor necessary to install his work within the terms of this Contract.

3.4.18 Substitutions (Equivalent Materials and Equipment): If, within fifteen (15) days after the Notice of Award, and prior to submittal of applicable shop drawings the Contractor desires to submit an alternate product or method in lieu of what has been specified or shown in the Contract Documents (substitution), the Contractor may do so in writing setting forth the following:

3.4.18.1 Full explanation of the proposed substitution and submittal of all supporting data including technical information, catalog cuts, warranties, test results, installation instructions, operating procedures, and other like information necessary for a complete evaluation of the substitution.

3.4.18.2 Reasons the substitution is advantageous and/or necessary, including the benefits to the Owner and Work in the event substitution is acceptable.

3.4.18.3 The adjustment, if any, in the Contract Sum in the event the substitution is acceptable.

3.4.18.4 The adjustment, if any, in the time of completion of the contract and the construction schedule in the event the submission is acceptable.

3.4.18.5 That (1) the proposed substitution conforms and meets all the requirements of the pertinent Specifications and the Drawings; and (2) the Contractor accepts the warranty and correction obligations in connection with the proposed substitution as if originally specified by the Architect. Proposals for substitutions shall be submitted in triplicate to the Architect in sufficient time to allow the Architect no less than ten working days for review.

3.4.18.6 Substitutions and alternates may be rejected without explanation.

3.4.18.7 No substitute material shall be purchased or installed by the Contractor without the Architect's written approval. Material that, in the Architect's opinion, is inferior to that specified or is unsuited for the intended use will be rejected. The Architect's decision regarding acceptance of equals shall be final. The risk of whether a proposed substitution will be accepted is borne by the Contractor. No requests for substitution will be considered unless the Architect determines that such substitution is in the best interest of the Owner under the conditions set forth in the Contract Documents.

3.4.18.8 By making requests for substitutions the Contractor:

- .1** Represents that the Contractor has personally investigated the proposed substitute product and determined that it is equal or superior in all respects to that specified;
- .2** Represents that the Contractor will provide the same warranty for the substitution that the Contractor would provide for the specified product;

- .3 Certifies that the cost data presented is complete and includes all related costs under this Contract except the Architect's redesign costs, and waives all claims for additional costs related to the substitution which subsequently become apparent;
- .4 Will coordinate the installation of the accepted substitution, making such changes as may be required for the Work to be complete in all respects; and,
- .5 Will reimburse Owner for additional costs from claims by other Prime Contractors resulting from incorporation of the requested substitution.

3.4.18.9 Whenever a material, article, device, piece of equipment or type of construction is identified on the Drawings or in the Specifications by reference to manufacturers' or vendors' names, trade names, catalog numbers, or similar specific information, it is so identified for the purpose of establishing a standard of quality, and such identification shall not be construed as limiting competition. Any material, article, device, piece of equipment or type of construction of other manufacturers or vendors that will perform the duties imposed by the general design will be considered equally acceptable provided the material, article, device, piece of equipment or type of construction so proposed is completely described in submittals as set forth herein and is, in the opinion of the Architect, of equal substance, appearance, and function.

3.4.18.10 The burden of proof to show equivalency or equal quality shall be that of the Contractor. Submissions for this purpose shall follow the format for Submittals. Submissions shall be complete, informative & address all data required in the base bid specification in such a manner that the Architect can, without unusual effort or exhaustive research, review and make a judgment as to its equivalency. Excessive or unusual effort required of the Architect by the Contractor to review, research and qualify items proposed as equivalents shall be charged to the Contractor at the current billing rate of the Architect. Where two or more kinds, types, brands, and manufacturers or materials are named in these specifications they are to be regarded as the required standard of quality and presumed to be equal. The contractor may select one of these items or, if the contractor desires to use any kind, type, brand, manufacturer, or materials other than those named in the specifications, the contractor shall indicate in writing, when requested, and prior to the award of contract, what kind, type, brand, manufacturer, or materials included in the base bid for the specified item.

3.4.18.11 Proposed equivalents or substitutions will not be considered unless requested as set forth herein. Mere express or implied indication of equivalents or substitutions will not be considered without full compliance these requirements.

3.4.18.12 The Contractor shall indicate the kind, type, brand or manufacturer that is to be substituted for the specified item. The Contractor will submit information describing in specific detail the differences in quality, performance, cost and time between the substitution and the item that was specified. This information shall include notification of possible changes to the Work or to work of other contracts.

3.4.19 All work shall be executed in complete accordance with the manufacturer's most recent recommendations unless otherwise specified or permitted by the Architect. A sufficient force of competent workmen, foremen, and superintendents shall be employed at all times to permit the work to be pursued with diligence until completion.

3.4.20 The Contractor shall provide the labor necessary to install his work within the terms of this Contract.

3.4.21 The Contractor shall be responsible for the care and protection of all equipment and materials for the Contractor's Work including equipment and material furnished by the Owner.

3.4.22 The Contractor shall take note of all Work in other spaces adjacent to or distant from areas being altered. The Owner's use of facilities cannot be disturbed except by specific approval of the Owner. Such work, as making connections, revisions, additions to existing mechanical and electrical lines or equipment, the cutting of new openings or other work of any sort, must be done at times as directed by the Owner when existing facilities are not in use.

3.4.23 The Contractor, before submitting its bid, shall make a survey of existing conditions and any proposed schedule, and determine the amount of overtime and premium time labor which may be required to do the work, and include the cost of such labor in the Contractor's Base Bid.

3.4.24 Not later than 5 days from the date proposals are received, the Contractor shall provide the Post Bid Information described in the Instructions to Bidders. The list shall be tabulated by, and be complete for each specification section. Where applicable, subcontractors' names shall be included in such list.

3.4.25 The Owner shall be entitled to deduct from the Contract Sum amounts paid to the Architect to evaluate the Contractor's proposed substitutions and to make changes in the Drawings and Specifications made necessary by such substitutions.

3.4.26 All work shall be executed in complete accordance with the manufacturer's most recent recommendations unless otherwise specified or permitted by the Architect. A sufficient force of competent workmen, foremen, and superintendents shall be employed at all times to permit the work to be pursued with diligence until completion.

3.4.27 The Contractor shall provide the labor necessary to install his work within the terms of this Contract.

3.4.28 The Contractor shall be responsible for the care and protection of all equipment and materials for the Contractor's Work including equipment and material furnished by the Owner and installed by the Contractor.

3.5 WARRANTY

3.5 Replace with the following:

3.5 The Contractor shall perform the Work in strict accordance with the Contract Documents and the best industry practices. All materials are to be new, unless specified otherwise. Contractor, at its expense, shall remove and replace materials not meeting specifications or materials failing to perform as represented or warranted by the manufacturer, whether incorporated in the Work or not. Contractor shall promptly replace

or correct any work or materials which Owner or Architect shall reject as failing to conform to the requirements of the Contract Documents.

Add the following subparagraphs:

3.5.2 Contractor shall perform all warranty obligations and responsibilities for the Work under the Contract Documents. Upon completion of the Work, Contractor shall submit to Owner all written warranties and guarantees from Contractor's subcontractors, suppliers and material manufacturers. Any notice given to Contractor by Owner or Architect regarding any deficiency in the Work covered by this Paragraph shall toll any applicable Warranty Period until corrections or remedial actions necessary hereunder have been taken. Contractor shall be responsible for all harm caused by its failure to maintain equipment and materials installed hereunder through the Contractor's completion of the Project.

3.5.3 Contractor shall be responsible for all maintenance of the Work through Substantial Completion or assignment of applicable warranties, whichever is later. The failure of Contractor to provide such maintenance shall not be a defense to any warranty claim.

3.5.4 Contractor shall perform the Work in such manner as to preserve any and all manufacturer's warranties.

3.5.5 The Contractor shall furnish maintenance and twenty four (24) hour call back service for the provided equipment for a period of twelve (12) months after Substantial Completion and acceptance of the Work. This service shall include examinations of the installation by competent and trained personnel.

3.5.6 Neither final payment nor any provision in contract documents nor partial or entire occupancy of premises by owner shall constitute acceptance of work not done in accordance with contract documents or relieve contractor liability in respect to any express warranties or responsibility for faulty material or workmanship.

3.5.7 In emergencies occurring during the guarantee period, the Owner may correct any defect immediately and charge the cost to the Contractor. The Owner shall at once notify the Contractor, who may take over the work and make any corrections remaining after his forces arrive at the work.

3.5.8 The Contractor shall obtain and furnish to the Architect written manufacturer warranties for all major materials, systems, and equipment. The terms of the warranty shall be as individually specified in the contract documents for the item; if no term is specified, the terms shall be minimum of one year, but not less than the standard period of the manufacturer's warranty for the item.

3.6 TAXES

Add the following:

3.6.1 Owner is exempt from payment of sales and compensation use taxes imposed by State of New York or by State of New York or by any county or city within the state on all supplies and materials furnished by Contractor for incorporation into work pursuant to provisions of this Contract. Purchase by Contractor of supplies and materials sold

hereunder will be a purchase or procurement for an exempt project pursuant to applicable provisions of New York State Tax Law and, therefore, not subject to any sales or compensation use taxes.

3.6.2 Contractor's attention is called to fact that materials not actually incorporated into work will not be exempt from payment of a sales tax. This will apply to such things as:

3.6.2.1 Construction machinery and equipment including rentals or repair parts.

3.6.2.2 Contractor's office supplies.

3.6.2.3 Contractor's supplies, tools and miscellaneous equipment including forms, materials and scaffolding (whether purchased or rented).

3.6.2.4 Temporary Heat.

3.6.2.5 Telephone or electric services.

3.6.2.6 Any other items purchased or rented by Contractor for Contractor's use in performing contract and not incorporated into realty.

3.6.3 Contractor shall accept 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, and/or by Government of any city, county or state of United States, which are measured by salaries or other remuneration paid to persons employed by Contractor or any subcontractor for work performed under this contract.

3.6.4 The Owner will furnish a certificate with the Owner's Tax Exemption Number to the Contractor for use in purchasing tangible personal property required for the Project.

3.6.5 The Contractor shall, upon request by the Owner, furnish a bill of sale or other instrument indicating the quantities and types of materials purchased directly by the Contractor or subcontractor for incorporation into the Work. Upon delivery of the materials to the site, the Contractor shall mark or otherwise identify the materials to be incorporated into the Work. This exemption shall apply only to materials so identified and accepted.

3.6.6 Title to all materials shall pass to the Owner upon delivery to the job site. Each of the Contractor's subcontracts and all purchase orders must so provide.

3.7 PERMITS, FEES, NOTICES AND COMPLIANCE WITH LAWS

Add the following:

3.7.1.1 The Owner shall secure a building permit from the New York State Education Department as required for the Project. The Contractor shall secure and pay for all other permits and governmental fees, licenses, and inspections necessary for proper execution of and completion of the Contract that are legally required when bids are received. The mechanical and electrical contractors shall procure their own specialty permits, metering requirements and pay all related fees.

3.7.2 Add the following: "Except where otherwise expressly required by applicable laws and regulations, neither Owner nor Architect shall be responsible for monitoring contractors compliance with any laws and regulations."

3.7.3 Insert the following after the word "knowing": "... ,or where the Contractor reasonably should have known, . . ." Substitute the word "full" for the word "appropriate".

3.7.4 Add the following:

3.7.4.1 Extra Excavation: The following definitions shall be applicable for additional earth excavation and for rock excavation if such excavations are authorized by the Architect.

3.7.4.1.1 Trench Excavation: Any excavation which is more than 18" in depth and less than 4'-0" in width will be classified as trench Excavation.

3.7.4.1.2 Open Excavation: All excavation except as described in **3.7.4.1.1** whether earth or rock, will be classified as Open Excavation.

3.7.4.2 Maximum Measurement Lines: The maximum line for horizontal measurements for trench and open excavation shall be not more than 12" on each side of the work to be installed.

3.7.4.3 Payment for additional earth excavation and for rock excavation, if encountered, will be made on the basis of measurements not exceeding the above.

3.9 SUPERINTENDENT

3.9.1 Add the following sentence to the end of Subparagraph 3.9.1:

The Contractor's Superintendent or a responsible temporary substitute shall attend all job meetings.

3.9.3 Delete the remainder of the sentence after the word "consent".

3.9.4 Add to the following:

3.9.4 The superintendent shall be engaged on a full time basis in a managerial capacity to continuously expedite, direct, supervise and coordinate the Work and shall not normally engage in performing actual Work.

3.10 CONTRACTOR'S CONSTRUCTION SCHEDULES

3.10.1 Delete the word "promptly" and add "within 10 working days."

3.10.1 Continue the last sentence with the following phrase:

" . . . and Project in full cooperation with the other Contractors on the Project."

3.10.3 Delete the word "general".

3.10.4 - 3.10.8 Add the following:

3.10.4 Each Contractor shall fully cooperate and consult with each of the other contractors the Owner's designee during the Project to schedule and execute the Work so as to cause the least delay to the other Contractors and the Project.

3.10.5 Procedure and Schedule of Work:

3.10.5.1 The work on the entire Project shall be progressed continuously without interruption, so that all work can be completed in the time set forth in the Contract Documents.

3.10.5.2 The sequence of operation shall be scheduled with the Owner so as to interfere as little as possible with the Owner's use of existing structures and the Owner's approval shall be obtained prior to the starting of such operations.

3.10.5.3 Time of Completion: All work shall be completed on or before the milestone and completions dates set forth in the Agreement, except as otherwise specified. Time is of the essence to the Owner.

3.10.5.4 Job Meetings: During the course of construction, job meetings will be held with representatives of the Owner, the Architect, Engineers if applicable, and Contractors to discuss the progress of the Project and any problems of construction, timing or procedure, so as to expedite all phases of the Project to completion. The Contractor and the Contractor's Subcontractors are to be represented at such meetings.

3.10.5.5 Dailey Foremen Job Meetings: The Contractors shall meet briefly each work day with the Owner's Representative to coordinate their work and keep the Owner's Representative advised of progress.

3.10.5.6 The representative of the Contractor in attendance at the above meetings shall have authority to make decisions pertaining to his work.

3.10.6 In the event the Owner determines that the performance of the Work is not progressing to the level of completion required by the Construction Documents, the Owner shall have the right to order the Contractor to take corrective measures including, without limitation, work additional shifts or overtime, supplying additional manpower, equipment and facilities as well as other similar measures (herein after referred to collectively as acceleration measures). Such acceleration measures shall continue until the progress of the Work will comply with milestone dates and completions dates set forth in the Contract Documents.

3.10.6.1 The Contractor shall not be entitled to an adjustment in Contract Sum in connection with extraordinary measures required by the Owner or pursuant to paragraph 3.10.6.

3.10.7 The Owner shall have the right to direct a postponement or rescheduling of any date or time for the performance of any part of the Work that may interfere with or disrupt the school operations.

3.10.8 Contractor shall be solely responsible for scheduling and coordinating the work of sub-contractors, suppliers, and other persons and organizations performing or furnishing any of the Work under a direct or indirect contract with Contractor.

3.11 DOCUMENTS AND SAMPLES AT THE SITE

3.11 Insert the following in the first sentence after "construction":

" . . . in sufficient detail to enable preparation of reproducible record drawings of the Project as built, . . . "

3.12 SHOP DRAWINGS, PRODUCT DATA AND SAMPLES:

3.12.2 Delete and replace with the following:

3.12.2 Product Data are illustrations, standard schedules, performance charts, recommended installation procedures and instructions, operating and maintenance procedures, brochures, diagrams and other information furnished by the Contractor to illustrate materials or equipment for some portion of the Work.

3.12.5 Add after "Contract Documents" in the second line: " , or requested by the Architect."

3.12.5.1 Add the following:

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

3.12.10 Delete the following:

" . . . , provided the Owner and Architect have specified to the Contractor all performance and design criteria that such services must satisfy"

3.12.10.1 Add the following:

3.12.10.1 If the Contractor, or his licensed design professional, believes that the Owner and Architect have not provided all performance and design criteria, the Contractor shall request additional criteria in writing before proceeding with the professional services described in **3.12.10**. Proceeding with the professional services shall be evidence that the Contractor and his licensed design professional believes that the Owner and Architect have provided all necessary performance and design criteria.

3.12.11 & 3.12.14 Add the following:

3.12.11 When professional certification of performance criteria of materials, systems or equipment is required by the Contract Documents, the Architect shall be entitled to rely upon the accuracy and completeness of such calculations and certifications.

3.12.12 See **3.4.18** et.seq. regarding substitutions and equivalencies.

3.12.13 All shop drawings for any architectural, civil, structural, mechanical or electrical Work must be submitted to and reviewed by the Architect. The Contractor represents and warrants that all shop drawings shall be prepared by a person and entity possessing expertise and experience in the Trade for which the shop drawings is prepared and, if required by the Contract Documents or applicable law by a licensed Engineer.

3.12.14 The Prime Contractor shall approve all shop drawings, product data, and samples prior to submitting them to the Construction Manager. The Prime Contractor's stamp shall have space for the Prime Contractor to fill in the Submittal Number, Initials of the person who approved the submittal, Date and Contract Number. The stamp shall state, "This submittal has been reviewed and approved in accordance with the General Conditions of the Contract for Construction and complies with the requirements of the Contract Documents."

3.13 USE OF THE SITE

Add the following:

3.13.1 Only materials and equipment which 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.

3.13.2 The Work shall at all times be performed in a manner that affords reasonable access, both vehicular and pedestrian, to the site and all adjacent areas. The Work shall be performed in such a manner that public areas adjacent to the Work area are free from all debris, building materials, and equipment. Without limitation of any other provision of the Contract Documents, 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 Work area or (2) the building in the event of partial occupancy.

3.13.3 The Contractor shall not permit any of its personnel to use any existing facilities at the Project site, including, without limitation, lavatories, toilets, entrances, and parking areas other than those designated by the Owner. The Contractor shall comply with all rules and regulations promulgated by the Owner in connection with the use of occupancy of the Project site and the Building. The Contractor shall immediately notify the Architect, Construction Manager, and Owner in writing if during the performance of the Work, the Contractor finds compliance with any portion of such rules and regulations to be impracticable, setting forth the problems encountered suggesting alternative solutions. The Owner may, in the Owner's sole discretion, adopt such suggestions, develop new alternatives or require compliance with the existing requirements of the rules and regulations.

3.13.4 All Contractors are required to protect their own work, and work areas, pre, during and post construction.

3.14 CUTTING AND PATCHING

Add the following:

3.14.3 The word "new" used herein shall mean work which has been or is to be installed as part of this Project. The word "existing" used herein shall mean existing conditions previous to this Project.

3.14.4 In order to eliminate cutting and patching as much as possible, the Contractor shall, during the progress of the work, provide and set proper sleeves, inserts, etc. as required for the Work and shall give proper and detailed instructions to others where the work of others may be affected by the Contractor's Work, with adequate notice prior to the erection of the Work. Cutting and patching shall be done carefully and neatly with as little damage as possible.

3.14.5 The Contractor is responsible for the cutting, removals and patching required for the proper execution of the Contractor's Work.

3.14.6 Cutting and patching of any work shall be made in such a manner as to not breach any provisions of any guarantee or warranty. Patching of work shall match existing adjacent surfaces and patch work shall be disguised completely to hide any trace of patching.

3.16 ACCESS TO WORK

3.16 Replace with the following:

3.16 The Contractor shall provide the Owner and Architect and their authorized representatives access to the Work at all times for inspection whenever and wherever it is in preparation or progress. The Contractor shall provide facilities for such access.

3.18 INDEMNIFICATION

3.18.1 Replace with the following:

3.18.1 To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, Architect, Architect's consultants, and the agents and employees of any of them from and against claims, damages, losses and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property, caused, in whole or in part, by (i) the culpable acts or omissions of the Contractor, its subcontractors or suppliers, anyone directly or indirectly employed by them or anyone for whose acts they may be liable, or (ii) the breakage or malfunctioning of any tools, supplies, scaffolding or other equipment used by or furnished to Contractor, its subcontractors or suppliers, anyone directly or indirectly employed by them or anyone for whose acts they may be liable. This indemnification shall apply regardless of whether or not such claim, damage, loss or expense is caused in part by a party indemnified hereunder. This provision shall not be construed to require the Contractor to indemnify any indemnitee for the negligence of the indemnitee to the extent such negligence proximately caused the damages complained of. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity which would otherwise exist.

3.18.1.1 Add the following:

3.18.1.1 To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, Architect, Architect's consultants, and the agents and employees of any of them from and against claims, damages, losses and expenses, direct, indirect, economic or consequential, including but not limited to attorneys' fees, arising out of or resulting from the performance of the Work, provided that any such claim, damage, loss or expense is attributable to the failure to timely or properly perform or furnish any of the Work arising under the Agreement. This indemnification shall apply regardless of whether or not such claim, damage, loss or expense is caused in part by a party indemnified hereunder. This provision shall not be construed to require the Contractor to indemnify any indemnitee for the negligence of the indemnitee to the extent such negligence proximately caused the damages complained of. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity which would otherwise exist.

Add the following:

3.19 LOCAL CONDITIONS, EXISTING FEATURES AND UNDERGROUND DATA

3.19.1 The contractor acknowledges he has satisfied himself as to the nature and location of the Work, the general and local conditions, particularly those bearing on transportation, disposal, handling and storage of materials, availability of labor, materials, equipment, utilities, roads, weather, ground water table, character of surface and subsurface materials and conditions, the facilities needed to prosecute the Work, and all other factors which in any way affect the Work or the cost thereof under this Contract. Any failure by the Contractor to acquaint himself with the available information concerning these conditions will not relieve him from the responsibility of successfully performing work. See Section 1.2.2.1.

3.19.2 The location of existing features shown on plans is intended for general information only. The Contractor is solely responsible for accurate determination of the location of all structures, and shall not be entitled to any extra payment due to any unforeseen difficulties or distances encountered in the Work.

3.19.3 The locations, depths and data as to underground conditions have been obtained from records, surface indications and data furnished by others. The information furnished is solely for the convenience of the Contractor without any warranty, expressed or implied as to its accuracy or completeness. To the extent permitted by law, the Contractor shall make no claim against the Owner or Architect with respect to the accuracy or completeness of such information if erroneous, or if the conditions found at the time of construction are different from those as indicated.

3.20 CONSTRUCTION STRESSES

3.20.1 The Contractor shall be solely responsible for the load conditions created during construction. The Contractor shall be responsible for repairing any structure is dislocated, over strained, or damaged during construction.

3.20.2 The Contractor is responsible for restoration and/or repair of utilities, property, buildings, pavement, walkways, roads, etc. damaged by his activities.

3.21 TRAINING AND INSTRUCTIONS

3.21.1 Upon Substantial Completion of the Work, the Contractor shall orient and instruct the Owner's designated personnel in the operation and maintenance of all equipment furnished by the Contractor and shall turn over all pertinent literature and operational manuals relating to the equipment. The format for organizing, binding, and delivering such manuals shall be as described in the Specifications.

ARTICLE 4 ARCHITECT

Add the following:

4.1.4 All changes in the Work must be processed through the Architect. (See **7.2** and **7.4**).

4.2 ADMINISTRATION OF THE CONTRACT

4.2.1 Add the following:

4.2.2.1 The Contractor shall reimburse the Owner for compensation paid to the Architect for additional site visits made necessary by the fault, neglect or request of the Contractor.

4.2.2 Replace **4.2.2** with the following:

4.2.2 The Architect will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, and shall exercise professional care and diligence in an effort (1) to become generally familiar with and to keep the Owner informed about the progress and quality of the portion of the Work completed, (2) to guard the Owner against defects and deficiencies in the Work, and (3) to determine in general if the Work is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. The Architect will not have control over, charge of, or responsibility for, the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents.

4.2.3 Delete the word "known" in the first sentence. Insert the phrase "to the Contractor" after the following phrase at the beginning of the second sentence: "The Architect shall not be responsible . . ."

4.2.4.1 Add the following:

4.2.4.1 All formal communications between the Owner, Contractor, Construction Manager and Architect shall be in writing and delivered to the recipient by hand, by the US Postal Service or by a delivery service.

4.2.5 Insert the phrase "observations and" before the word "evaluations".

4.2.7 Add the following to the end of **4.2.7**:

The review will not be considered complete until an action stamp or other written notice to that effect has been received by the Contractor.

4.2.7.1 Add the following:

4.2.7.1 The Architect's review of the Contractor's submittals shall be limited to an initial submittal and 2 re-submittals. If the Architect is required to review additional submittals because the initial submittal and 2 re-submittals 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.

4.2.10 Delete the first sentence of subparagraph **4.2.10** and substitute as follows:

If the Owner and Architect agree, one or more project representatives may be provided to assist in carrying out the Architect's responsibilities at the site.

4.2.10 Delete the second sentence of **4.2.10**.

4.2.15 Add the following:

4.2.15 The Contractor shall cooperate in coordination of the Contractor's Work with that of the other contractors and of the Owners forces. The Contractor shall participate with the other contractors, the Architect and the Owner in coordinating the work of the Project and in reviewing their construction schedules. The Contractor shall adhere to any revisions to the construction schedule deemed reasonably necessary by the Owner.

ARTICLE 5 SUBCONTRACTORS

5.1 DEFINITIONS

5.1.1 Delete the words "at the site" in the first sentence.

5.1.2 Delete the words "at the site" in the first sentence.

5.2 AWARD OF SUBCONTRACTS AND OTHER CONTRACTS FOR PORTIONS OF THE WORK

5.2.1.1 Add the following

5.2.1.1 Not later than five (5) days after submission of bids, the low three bidders shall furnish in writing to the Owner, through the Architect, the names of persons or entities proposed as subcontractors, sub-subcontractors, and manufacturers for each of the products identified in the Contract Documents including those who are to furnish materials or equipment fabricated to a special design. Awards of contract will not be made until a complete list has been submitted by the Contractor to the Architect.

5.2.1.2 Subcontractors will not be acceptable unless, when requested by the Architect, evidence is furnished that the proposed subcontractor has satisfactorily completed similar subcontracts as contemplated under this prime contract, and has the necessary experience,

personnel, equipment, plant, and financial ability to complete the subcontract in accordance with the intent to the Documents.

5.2.1.3 Submittal of substitutes shall be made within (10) days of notice of such reasonable objection.

5.2.5 Add the following new Section:

5.2.5 The Contractor shall not award work to any one Subcontractor in excess of 50 percent of the Contract Sum, without prior written approval of the Owner.

5.3 SUBCONTRACTUAL RELATIONS

Add the following:

5.3.1 All subcontracts shall be in a form subject to Owner's approval and shall at a minimum (i) expressly state that Owner is an intended beneficiary of the Subcontract; (ii) provide for joinder of parties in the Subcontract (including sub-subcontracts) in any dispute resolution proceeding arising out of the Project, and (iii) be subject to termination upon the consent of Owner and Contractor.

5.4 CONTINGENT ASSIGNMENT OF SUBCONTRACTS

5.4.4 Add the following:

5.4.4 Each subcontract shall specifically provide that the Owner shall only be responsible to the Subcontractor for those obligations of the Contractor that accrue subsequent to the Owner's exercise of any rights under this conditional assignment.

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 Delete the remainder of the next to the last sentence beginning with the phrase: ". . . including those portions related to . . ."

6.1.1 Replace the last sentence with the following:
The Contractor shall manage its work to minimize any interruption or delay on account of the awarding of other work on the Project to other contractors.

6.2 MUTUAL RESPONSIBILITY

6.2.3 Delete the last sentence of **6.2.3**.

6.2.6 Add the following:

6.2.6 Claims and other disputes and matters in question between the Contractor and a separate contractor shall be subject to the provisions of Article 15 provided the separate contractor has reciprocal obligations.

ARTICLE 7 CHANGES IN THE WORK

7.1 GENERAL

Add the following:

7.1.4 To the fullest extent permitted by law, the Contractor hereby waives any claims that the Owner has been unjustly enriched by any alteration or addition to the Work, whether or not there hereafter is any unjust enrichment to the Work, as a basis for an increase in any amounts due the Contractor or a change in any time period provided for in the Contract.

7.1.5 Add the following:

7.1.5 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 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 the Architect has issued an appropriate Change Order. If requested, the Contractor shall submit detailed quotations from 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 in writing.

7.3 CONSTRUCTION CHANGE DIRECTIVES

7.3.3.1 Add the following to the end of Section **7.3.3.1**:

Substantiating data shall include, as appropriate, the documentation for items listed in Section **7.3.7**.

7.3.7 In the first sentence, delete from “including” to the end of the sentence and replace it with the following: “an allowance for overhead and profit in accordance with Section **7.3.11**.”

Replace Sections **7.3.7.2** and **7.3.7.3** with the following:

7.3.7.2 Costs of materials, exclusive of drill bits, saw blades, manual and power hand tools, whether incorporated or consumed;

7.3.7.3 Rental costs of heavy machinery and equipment, exclusive of manual and power hand tools, whether rented from the contractor or others;

7.3.7.5 Delete **7.3.7.5**.

7.3.10 Delete the following phrase: “such agreement shall be effective immediately and”

7.3.11 Add the following:

7.3.11 The allowance 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, mark-up shall not exceed fifteen percent (15%) of the direct cost for materials and labor.
- .2 For the Contractor, for Work performed by the Contractor's Subcontractor, five percent (5%) of the amount due the Subcontractor for Contractor's overhead and profit. The total combined overhead and profit shall be limited to 15% of the direct cost regardless if the work is performed by the Contractor or the Subcontractor.
- .3 For each Subcontractor, or Sub-subcontractor involved, for Work performed by that Subcontractor's or Sub-Subcontractor's own forces, mark-up shall not exceed fifteen percent (15%) of the direct cost for materials and labor for overhead and profit. The total combined overhead and profit shall be limited to 15% of the direct cost regardless if the work is performed by the contractor, subcontractor, or a Sub-contractor.
- .4 Cost to which overhead and profit are to be applied shall be determined in accordance with 7.3.7.
- .5 In order to facilitate checking of quotations for extras or 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 materials shall be itemized in the manner prescribed above. Where major cost items are Subcontracts, they shall be itemized also. In no case will a change involving more than \$1000.00 be approved without such itemization.
6. Overhead and profit includes, but is not limited to, the following:
 - a.) Home Office Expense
 - b.) Field Office Expense
 - c.) Supervision
 - d.) Project Management & Estimation
 - e.) Small Tools & Equipment
 - f.) Payment and Performance Bonds

ARTICLE 8 TIME

8.1 DEFINITIONS

8.1.2 Add the following to the end of 8.1.2:

The Work of this Project shall be commenced upon written notice to proceed.

8.1.5 Add the following:

8.1.5 Work remaining to be completed after substantial completion, shall be limited to items which can ordinarily be completed within the 30 day period (one month) before final payment is made.

8.2 PROGRESS AND COMPLETION

8.2.1.1 Add the following:

8.2.1.1 The Contractor acknowledges that failure by Contractor to complete the work in accordance with the construction schedule may cause significant damages to the Owner including but not limited to the loss of State Aid from the Department of Education.

8.2.2.1 Add the following:

8.2.2.1 Contractor shall not commence work on the site until two certified copies of all insurance policies as indicated in Article 11, attesting that the required coverage is in force, have been received and accepted by the Owner.

8.2.3.1 Add the following:

8.2.3.1 Contractor shall cooperate with the Owner, Architect, Engineer, Construction Manager, Consultants, and other Contractors on the Project, making every reasonable effort to reduce the contract time.

Add the following:

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, or any disputes or disagreements as to the equitable value of the changes.

8.2.5 If the Contractor does not achieve Substantial Completion within the Contract Time established pursuant to the Contract, the Contractor shall be responsible for any resulting additional costs incurred by the Owner for the services of the Owner's Agents including, but not limited the Architect, Engineer, Construction Manager, Owner's Clerks of Works and/or Project Representative's. The Owner will pay the Agents promptly, and the Owner will back charge the Contractor for such additional costs. This Section shall not act to limit any other rights and remedies the Owner may have.

8.2.6 In no case shall the Contractor delay the progress of the Work, or any part thereof, on account of changes in the Work or any disputes as to the value of such changes.

8.2.7 Work remaining to be completed after the substantial completion shall be limited to items which can ordinarily be completed within the thirty (30) day period before final payment is made.

8.2.8 The Work shall be performed during designated working hours, except that in the event of emergency or when necessary to perform the Work in accordance with the requirements of Subparagraph 8.2.3, Work shall be performed at Contractor's cost and expense on overtime, Saturdays, Sundays, and at other times, if written permission to do so has been obtained from the Owner. If Contractor fails to maintain progress by no fault but its own, and requires overtime to complete the Work, Contractor shall make arrangements with the Owner 72 hours in advance. In such a case, Owner shall be entitled to deduct from the Contract Sum amounts paid to Architect or Owner's Agent for any resulting required services.

8.3 DELAYS AND EXTENSIONS OF TIME

8.3.1 Delete the words "... pending mediation and arbitration . . ."

8.3.1 Add the following:

8.3.1.1 Extension of time, if requested by the Contractor, shall only be considered after the Contractor has made reasonable effort to recover the lost time.

8.3.1.2 An extension, or extensions, of time may be granted subject to the provisions of this article, but only after written application therefor by the Contractor in accordance with Section **15.1.5**.

8.3.1.3 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 delays as determined by the Architect.

8.3.1.4 Should Contractor be obstructed or delayed in the commencement, prosecution or completion of the Work, without fault on its part, by reason of failure to act, direction, order, neglect, delay or default of the Owner, Architect, or any other contractor employed on the Project; by changes in the Work; fire, lightning, earthquake, enemy action, act of God or similar catastrophe; by Government restrictions with respect to materials or labor; or by an industry-wide strike beyond Contractor's reasonable control, then Contractor shall be entitled to an extension of time lost by reason of any and all causes listed in this Subparagraph, but no claim for extension of time on account of delay shall be allowed unless a claim in writing therefore is presented to Architect with reasonable diligence but in any event not later than fourteen days after the commencement of such claimed delay.

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

8.3.3 Delete in its entirety.

8.3.3 Add the following clauses:

8.3.3.1 For purposes of the following clauses under **8.3.3**, the Designated Agents are deemed to be the Owner, the Architect, or the agents or employees of any of them, excluding other Prime Contractors, their subcontractors and their respective agents. Prime Contractors are deemed to be those contractors who have executed a contract with the Owner to perform construction pertaining to the Project.

8.3.3.2 Notwithstanding anything elsewhere in the Contract, other than **8.3.3.3** below, to the contrary and to the fullest extent permitted by law: 1) The Contractor agrees to make no claim against the Owner or its Designated Agents, as defined herein, for costs or damages resulting from delay or interference in the performance of the Contract; and, 2) the Contractor expressly waives any rights it may now or hereafter have to recover costs or damages from the Owner or its Designated Agents, for any delay or interference in the performance of the Contract.

8.3.3.3 Nothing in the preceding paragraph shall impair the Contractor's right to make a claim to recover for costs or damages resulting from any of the following: 1) Delays or interference caused by the deliberate, malicious, or grossly negligent conduct of the Owner or its Designated Agents; 2) Delays or interference caused by conduct of the Owner or its Designated Agents so unreasonable that the conduct constitutes an intentional abandonment of the contract by the Owner or its Designated Agents; or 3) Delays resulting from existing subsurface conditions not reasonably foreseeable by a reasonable contractor possessing the skill and experience needed to properly perform the Work as of the time the Contract was bid or, to the extent applicable, when the change order for the affected work was executed.

8.3.3.4 The Contractor understands that the timely prosecution of Contractor's obligations under the Contract is essential to the efficient completion of the Project and may have a direct bearing on the costs incurred by all other Prime Contractors. Some of the Contractor's obligations in this regard include, but are not limited to: 1) Completing the Work in an orderly fashion and in accordance with an agreed upon progress schedule; 2) Timely coordination and cooperation with the Owner, the Architect and the other Prime Contractors to resolve disruptions, interferences or other problems as they arise; 3) Providing sufficient personnel, systems and procedures to insure that required materials, supplies and skilled human resources are available so that the Work is timely understood, anticipated, progressed and communicated where required to others involved with the Project; 4) Maintaining accurate job progress schedules and systems; 5) Timely notifying others working on the site when delays or interferences occur that will affect the Contractor's or other's work pertaining to the Project; 6) Providing a skilled, informed and properly supported superintendent at the Project sites and at all required job meetings to provide meaningful information and commitments to efficiently cooperate in coordinating the work of the various contractors; and 7) Timely reviewing all job minutes, correspondence and other communications and responding to same when required.

8.3.3.5 The Contractor agrees that its failure to timely cooperate and proceed can substantially increase the costs of other Prime Contractors in attempting to timely prosecute their obligations under related contracts. Accordingly, the Contractor recognizes that other Prime Contractors on the site are third-party beneficiaries of the Contractor's obligation to timely coordinate and prosecute its obligations under the Contract Documents. The Contractor hereby waives and shall not raise as a defense the absence of privity of contract between the Contractor and the other Prime Contractors in any claim hereafter asserted by other Prime Contractors to recover costs or damages for delay or interference and shall be responsible to other Prime Contractors on the site for damages caused by Contractor's failure to timely and properly perform its contractual obligations under the Contract Documents..

8.3.3.6 Any extension of the Contract Time shall not be considered as justifying extra compensation to the Contractor for administrative costs or other similar reasons.

8.3.3.7 The intention of the work is to follow a logical sequence; however, the Contractor may be required by the Architect to temporarily omit or leave out any section of his work, or perform his work out of sequence to facilitate the orderly progression of the Project. All such out of sequence work and come back time to these areas shall be performed at no additional cost.

ARTICLE 9 PAYMENTS AND COMPLETION

TULLY CSD – BUS GARAGE BUILDING RENOVATIONS & FUEL TANK REPLACEMENTS

9.2 SCHEDULE OF VALUES

Add the following:

9.2.1 The Schedule of Values and Applications for Payment shall be prepared by the Contractor using the format of AIA forms G-702 and G-703, "Application & Certification for Payment." The Schedule of Values shall be submitted to the Architect for approval a minimum of thirty (30) days before the first application for payment. Profit and overhead shall be included in each item. All Application & Certification of Payment, Change Orders, and other documents involving monetary statements shall be provided per building and have totals rounded off to the whole dollar amount for 0 cents through 50 cents. All items above 50 cents through 99 cents to the next dollar.

9.2.2 The list of items shall include all items included in all Divisions, Sections and subparagraphs of Sections of the specifications and shall be reviewed by the Architect. The Schedule will become the basis of periodic payments through the life of the Contract.

9.2.3 The Schedule of Values shall be broken down by building and by renovation and new work on separate pages with totals for each. The Contingency Allowance shall be on a separate page. The Schedule of Values shall be further separated by specification section.

9.2.4 For each item, the value of labor shall be listed separately from the value of materials and other costs. All items within the schedule shall be of the same order of magnitude. The Schedule of Values shall contain line items in equal amounts allocated to initial project requirements (i.e. 1% bonds, 1% insurance, 1% mobilization, 1% general requirements, etc.) and final project requirements (i.e. 1% for demobilization, 1% punch lists, 1% final cleaning, 1% as built drawings and 1% O&M Manuals). Profit and overhead shall be included in each item. Included with this schedule shall be a cash flow projection upon which the Owner will be entitled to rely for the purpose of making adequate funds available for the Work.

9.2.5 If Trade breakdown and Schedule of Values is initially approved, but later found improper for any reason, sufficient funds may be withheld from future Applications for Payment to ensure an adequate reserve (exclusive of normal retainage) to complete the Work.

9.3 APPLICATIONS FOR PAYMENT

9.3.1 Replace **9.3.1** with the following:

9.3.1 By the 25th of each month, the Contractor shall submit to the Architect an itemized Application for Payment in accordance with the schedule of values, notarized and reflecting retainage as provided elsewhere in the Contract Documents. Applications for payment must include (add and/or deduct) adjustments to the Lump Sum of the Contract 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) up-to-date copies of the Progress Schedule, revised to the end of the application period, and two (2) Owner release of liens and claims/debts form. The Owner or Architect may require supporting data such as copies of requisitions from Subcontractors and material suppliers.

9.3.1.3 Add the following:

9.3.1.3 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. Upon Substantial Completion, in accordance with Section **9.8.3** 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 Paragraph **9.8.2** and the amount required to satisfy any outstanding claims, liens, or judgments.

9.3.1.4 In the event the bonds identified in 11.4 become invalid, the Owner shall pay 90 percent of the amount of each progress payment due the Contractor until valid bonds are obtained or until Substantial Completion in accordance with 9.3.1.3 above, whichever is later. Nothing in this clause shall impair any of the Owners remedies pertaining to invalid bonds.

9.3.2 Add the following:

9.3.2.1 When payment for materials and equipment stored off site is approved by the Owner, copies of Bills of lading and vendor invoices shall accompany contractor's request for payment. Procedures required by Owner shall include, but are not necessarily limited to, submission by the Contractor to the Architect of bills of sale and bills of lading for such materials and equipment, provision of opportunity for 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.

9.3.2.2 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, including maintaining insurance coverage on a replacement cost basis without voluntary deductible.

9.3.2.3 All material stored shall be properly stored and insured against theft, damage and fire for its full value. Each request for payment shall be made out on the Material Requisition form and be accompanied by the proper original (not photocopies) invoices and with insurance verification (if stored off site).

9.3.2.4 Stored material shall be deemed to be those to be first incorporated into the work. The relationship of labor and materials as indicated on the Payment Application shall be the basis for establishing the rate of payment for the transfer of material stored to materials installed.

9.3.2.5 All Contractors are required to submit certified payroll information to the School District in accordance with New York State Law.

9.3.4 Add the following:

9.3.4 Each Application for Payment shall be accompanied by duly executed waivers of liens for any amounts included in the previous month's Application for Payment establishing payment or satisfaction of all obligations of the Contractor to its' Subcontractors, all in form and substance reasonably satisfactory to the Owner and Architect.

9.3.4.1 The Contractor shall submit on the form provided in the Project Manual a duly executed Release and Lien Waiver for each Application for Payment.

9.4 CERTIFICATES FOR PAYMENT

9.4.1 Delete the word "seven" and substitute "ten."

9.5 DECISIONS TO WITHHOLD CERTIFICATION

9.5.4 Notwithstanding anything above to the contrary, the Owner has the right to withhold payment 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 Article **9.5.1**.

9.6 PROGRESS PAYMENTS

9.6.1 Add the following:

9.6.1.1 Certificates for payment shall be issued monthly if work is progressing satisfactorily and if application for payment has been submitted. Certificate shall not exceed 95% of the value of the labor and materials furnished and incorporated into the building. AIA Form G-702, Application for Payment, with the exception of the first, shall be notarized by a duly authorized notary public so licensed in the State of New York.

9.6.1.2 The Owner, in accordance with the terms of the contract, shall pay the requisition, less an amount necessary to satisfy any outstanding claims, liens or judgments and retainage. Similarly, the Owner shall pay, upon requisition, for materials delivered to the site or off-site and suitably stored and secured as required by the Owner. The Owner may limit such payments to materials in short and/or critical supply and materials specifically fabricated for the Project as defined in the Contract.

9.6.2 Add the following:

9.6.2.1 Within fifteen (15) days of receipt of a payment from the Owner, the Contractor shall pay each of his subcontractors and suppliers for work performed and/or 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 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 the subcontractor and/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 his subcontractors and suppliers.

9.6.4 Add the following:

9.6.4.1 The Contractor shall take prompt action with respect to any lien filed or claim made by any of his suppliers, Materialmen, Subcontractors, Sub-subcontractors, or others to whom he is obligated so that any such liens or claims will be removed of record as against the Owner or its property within 20 days after they are filed or made. The Contractor shall be solely responsible for the removal and payment of all such liens and claims, and the Owner shall have no liability with respect to them. If required by the Owner, the Contractor shall submit an Affidavit of Partial and Final Waiver of Liens in such form as the Owner requires.

9.6.8 Add the following:

9.6.8 The Owner shall make no payment to the Contractor after the Contract-scheduled date of Substantial Completion (including authorized adjustments) until the actual date of Substantial Completion.

9.7 FAILURE OF PAYMENT

9.7 Change to read as follows:

9.7 If the Architect does not issue any Certificate for Payment, through no fault of the Contractor, within fourteen (14) days after receipt of the Contractor's written Application for Payment, or if the Owner does not pay the Contractor within twenty-one (21) days after the date established in the Contract Documents and receipt by the Owner of an amount certified by the Architect or awarded by judgment, then the Contractor may, upon fifteen (15) additional days written notice to the Owner and the Architect, stop the Work until payment of the amount owing has been received.

9.8 SUBSTANTIAL COMPLETION

9.8.1 Replace this paragraph with the following:

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 Drawings and Specifications so the Owner can occupy and utilize the Project or designated portion thereof for the use which it is intended. Substantial completion shall not be deemed to exist until the Owner receives a Certificate of Occupancy for the Project. 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. This date shall be established by a Certificate of Substantial Completion issued by the Architect, signed by the Owner and Contractor and shall state their respective responsibilities for security, maintenance, heat, utilities, damage to the work, and insurance. This certificate may also include a list of items to be completed or corrected together with a price for each item and a time for their completion and correction.

9.8.3 Add the following:

9.8.3.1 Except with the consent of the Owner, the Architect will perform no more than one inspection to determine whether a designated portion of the Work has attained Substantial Completion in accordance with the Contract Documents. The Owner shall be entitled to deduct from the Contract Sum amounts paid to the Architect for any additional inspections.

9.8.5 Add the following:

9.8.5.1 In conformance with General Municipal Law Section 106-b, "Payment on Public Work Projects", upon proper execution of Certificate of substantial completion of work or designated portion thereof, Contractor shall submit a requisition for payment of remaining amount of contract balance. Upon certification of payment by Architect, Owner will approve and promptly pay remaining amount of contract balance less two (2) times the value of any remaining items to be completed and/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 it shall not constitute waiver of claims.

9.8.5.2 Neither the requisition for payment stipulated in clause 9.8.5.1 nor any portion of retained percentage shall become due until Contractor submits to Architect (1) an affidavit that all payrolls, bills for materials and equipment, and other indebtedness connected with the work for which Owner or Owner's property might in any way be responsible, have been paid or otherwise satisfied; (2) consent of surety, if any, to such payment; (3) if required by Owner, other data establishing payment or satisfaction of all such obligations, such as receipts, releases and waivers of liens arising out of contract to extent and in such form as may be designated by Owner and, (4) the Release and Waiver of Lien Form referenced at **9.3.4.1** above.

9.8.6 - 9.8.8 Add the following:

9.8.6 Where project includes Heating and/or Air Conditioning 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 retained amount shall approximate 5 percent 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.

9.8.7 No partial payments will be made after the time fixed for the completion of the work or the time to which completion may be extended under the terms of the Contract, until the full and final completion and acceptance of all work herein agreed upon.

9.8.8 Except on projects where there is no Performance Bond required, the Contractor's requests for reduction or discontinuance of retainages shall be accompanied by a properly executed copy of the "Consent of Surety to Reduction in or Partial Release of Retainage" AIA form.

9.8.9 The Contractor shall cooperate with the Architect, Owner and Surety in establishing the correctness of his requests. Such requests shall be made in ample time as all necessary approvals must be secured before requests can be honored.

9.9 PARTIAL OCCUPANCY OR USE

9.9 Delete the following: “. . . , provided such occupancy or use is consented to by the insurer as required under section 11.3.1.5 . . .”

9.10 FINAL COMPLETION AND FINAL PAYMENT

9.10.1 Add the following:

9.10.1.1 If the Work is not accepted by the Owner after final inspection and additional time is required to complete items identified during the final inspection, the date starting the one-year correction period described in Article 12 shall be set by the Architect at his discretion, but not later than the date of the final Certificate for Payment.

9.10.1.2 If the Architect or, if applicable a Construction Manager or Clerk of the Works, is required to perform additional final inspections because the Work fails to comply with the certifications of the Contractor identified in the General Conditions, Supplemental Conditions or Division 1, the amount of compensation paid to the Architect, Construction Manager or Clerk of the Works by the Owner for additional services shall be deducted from the final payment to the Contractor.

9.10.1.3 When requesting final inspection, Contractor shall submit written certification that:

- .1** Contract Documents have been reviewed;
- .2** Work has been completed in accordance with Contract Documents;
- .3** Contractor has inspected Project for compliance with Contract Documents;
- .4** Equipment and systems have been tested in presence of Owner's representative and are operational; and
- .5** Project is completed and ready for final inspection.

9.10.2 Delete the following phrase from Item (5): “. . . if required by the Owner,”

9.10.2 Add the following:

9.10.2.1 In addition to the submittals required in Section 9.10.2, the Contractor shall submit separate releases and waivers of lien for each subcontractor, material supplier or others with lien rights against the property of the Owner, and shall submit a list of such parties.

9.10.2.2 Unless otherwise specified, the form of affidavit that indebtedness has been satisfied shall be a notarized AIA Document G706, Contractor's Affidavit of Payment of Debts and Claims, supported by AIA Document G706A, Contractor's Affidavit of Release of Liens, along with Contractor's Release or Waiver of Liens and Separate Releases or Waivers of Liens from Subcontractors, and AIA Document G707, Consent of Surety Company to Final Payment. Contractor shall submit a duly executed Release and Lien Waiver in the form referenced at **9.3.4.1** above.

9.10.2.3 Final certificates for payment will not be issued until: (1) Labor, material, equipment commissioning, manuals, warranties and other close out documentation required under the Contract have been furnished and completed. (2) All accounts for work modifications, materials, equipment, and allowances for omissions having been rendered, audited, agreed to

and incorporated in such Certificate. (3) The District's form of final Contractors Affidavit of Release of Liens, have been completed and approved by the Architect and Owner.

Delete **9.10.4** in its entirety.

Add the following:

9.10.6 The Contractor shall achieve Final Completion, including completion of all items on the list accompanying the Certificate of Substantial Completion and submission of all required documentation, not later than 30 days following the Contract-scheduled date of Substantial Completion. The Contract-scheduled date of Substantial Completion is the date listed in Paragraph **3.3** of the Standard Form of Agreement Between Owner and Contractor, AIA Document A101-2007. The Owner shall be entitled to deduct from the Contract Sum amounts paid to the Architect for providing services after thirty (30) days following the Contract-scheduled date of Substantial Completion.

9.10.5 Within ten (10) days after any lien is filed against the project funds or property related to the Work, the Contractor shall discharge of said lien, through bonding or otherwise.

ARTICLE 10: PROTECTION OF PERSONS AND PROPERTY

10.3 Add the following subparagraph:

10.3.7 The Contractor shall be responsible for certifying that materials furnished contain no asbestos.

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

10.2 SAFETY OF PERSONS AND PROPERTY

10.2.2 Add the following:

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 the 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.

10.2.2.2 To the fullest extent permitted by law, 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 a 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 fees, in recovering such defense costs from the Contractor.

10.2.4 Add the following:

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10.2.4.1 Storage of Hazardous Materials: Use and storage of propane gas, refrigerants and other dangerous materials shall be subject to the latest codes and regulations of the State and local municipalities and of OSHA. When use or storage of explosives or other hazardous materials or equipment or unusual methods are necessary, the Contractor shall give the Owner reasonable advance notice in writing.

10.2.9 - 10.2.19 Add the following:

10.2.9 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. Contractors and subcontractors shall cooperate in maintaining this condition.

10.2.10 Roadways, paths, walks and other areas, shall remain unobstructed and shall be maintained in a safe and satisfactory condition, for all persons using the building and premises.

10.2.11 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 nor with access to and egress from adjacent properties and use of the building.

10.2.12 The Contractor shall provide and maintain such temporary work as may be required for the protection of his finished work.

10.2.13 The Contractor will be responsible for all of his 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 and shall make good any such damage or loss without expense to the Owner.

10.2.14 The Prime Contractor shall not permit unnecessary hazards to be created or permit them to continue if they are discovered.

10.2.15 Restoration: If during the construction, public or private property is damaged or destroyed, during the course of his work, the Contractor responsible shall, at his own expense, restore such property to a condition equal to that existing before such damage or injury was done, by repairing, rebuilding or replacing it, or otherwise making good such damage or destruction in an acceptable manner.

10.2.16 O.S.H.A.: In addition to all requirements set forth herein all Contractors and subcontractors who perform any work under this Contract will fully comply with the provisions of the Federal Occupational Safety and Health Act and with any rules and regulations pursuant to the Act. This requirement shall apply continuously and not be limited to normal working hours. The duty of the Architect and Engineer to conduct construction review of the Contractor's or his subcontractor's performance is not intended to include review of the adequacy of the Contractor's or his subcontractor's safety measures in, on or near the construction site or buildings.

10.2.17 Welding:

10.2.17.1 Welding shall be done in accordance with the American Welding Society Code for Arc Welding Society, certified for current year.

10.2.17.2 When cutting or welding is to be done, the Owner MUST be notified prior to start. In addition, the Contractor for the Work, shall provide a fire guard with proper fire extinguisher for duration of cutting and welding work.

10.2.17.3 A welding curtain is to be installed around area where welding or cutting is to be done. No welding machines will be tied into electric panels without express permission from the Owner. Portable gasoline driven generators may not be used without the expressed permission of the Owner.

10.2.17.4 Obtain Owner's permission for each location in existing building where welding is required.

10.2.18 Open Burning: Open burning on the site is prohibited except as specifically specified otherwise. All precautions shall be taken to prevent fires.

10.2.19 The Contractor shall take appropriate precautions to provide for the safety of school children and building occupants and to prevent school children and building occupants from entering the construction site or an area where materials are stored.

10.3 HAZARDOUS MATERIALS

10.3.1.1 Add the following:

10.3.1.1 In the event Contractor encounters material reasonably believed to be or assumed to be lead-based paint, Contractor shall immediately stop Work in that area and notify Owner and Architect in writing. Contractor shall then follow "Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing," known as the "HUD Guidelines" and EPA requirements, including the Lead Report for the Project.

10.3.2 Delete the following from the end of the paragraph:

"... 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 Delete **10.3.3**.

10.3.4 Replace with the following:

10.3.4 The Owner shall not be responsible for materials and substances brought to the site by the Contractor.

10.5 Add the following:

10.5 HAZARD COMMUNICATION

10.5.1 The Contractor shall comply with all federal, state and local safety and health statutes related to the protection of employees and property of the Owner.

10.5.2 The Contractor shall maintain and make available upon request, Material Safety Data Sheets for all hazardous chemicals, substances or products to be brought on the job site, prior to the commencement of the work.

ARTICLE 11 INSURANCE AND BONDS

11.1 CONTRACTOR'S LIABILITY INSURANCE

11.1.1.1 Remove the semicolon and add the following to the end of **11.1.1.1**:

“, private entities performing Work at the site and exempt from such coverage on account of number of employees or occupation, shall maintain voluntary compensation coverage at the same limits specified for mandatory coverage for the duration of the Project;”

11.1.1.2 Remove the semicolon and add the following to the end of **11.1.1.2**:

“, or those persons or entities excluded by statute from the requirements of **11.1.1.1** for which the Contractor is required to provide the insurance required by that Clause;”

11.1.1.8 Add the following:

11.1.1.8 claims for bodily injury or property damage arising out of completed operations;

11.1.1.9 Add the following:

11.1.1.9 Liability insurance shall include all major divisions of coverage and be on comprehensive basis including:

- .1** Premises Operations (including X, C, and U coverage as applicable).
- .2** Independent Contractor's Protective.
- .3** Products and Completed Operations.
- .4** Personal Injury Liability with Employment Exclusion deleted.
- .5** Contractual, including specified provisions for Contractor's obligation under Paragraph 3.18.
- .6** Owned, non-owned and hired motor vehicle.
- .7** Broad Form Property Damage including Completed Operations.
- .8** Umbrella Excess Liability.

11.1.2.1 Add the following clauses:

11.1.2.1 The insurance required by 11.1.1 shall be written for not less than the following limits, or greater if required by law. Notwithstanding anything else to the contrary, coverages shall be written on an occurrence basis, and shall be maintained without interruption from the date of commencement of the Work until at least the expiration of the warranty period or such later date applicable to coverage required to be maintained after final payment. **All coverage shall be provided by insurers admitted to write insurance in New York State (Owner may waive this requirement if an alternative acceptable to Owner is provided) and “Best Rated” as A- or higher, Size Category “X” or greater.**

- .1 Workers' Compensation:
 - .1 State: Statutory
 - .2 Employer's Liability:
 - \$100,000 per Accident
 - \$500,000 Disease, Policy Limit
 - \$100,000 Disease, Each Employee
 - .3 If self funded or group self insured, provide Employer's Liability excess coverage of \$1,000,000.

- .2 Commercial General Liability (including Premises-Operations; Independent Contractors' Protective; Products and Completed Operations; Broad Form Property Damage and Contractual):
 - .1 Combined Single Limit:
 - \$2,000,000 General Aggregate
 - \$2,000,000 Products and Complete Operations
 - \$1,000,000 Each Occurrence
 - \$1,000,000 Personal Injury and Adv. Injury
 - \$300,000 Fire Damage legal liability.
 - \$5,000 Medical Payments
 - .2 Products and Complete Operations to be maintained for five (5) years after final payment
 - .3 Property Damage Liability Insurance shall provide X, C and U coverage.
 - .4 Property Damage Liability Insurance shall not contain any exclusion that deletes coverage for damage to the building or its contents as a result of influx of rain, snow or hail during the Work.
 - .5 Broad Form Property Damage Coverage shall include Completed Operations.
 - .6 Contractual Liability shall include Indemnifications set forth in the Contract Documents.
 - .7 **Aggregate limit shall be on a per project basis and duly noted on the certificate of insurance.**
 - .8 Personal Injury coverage shall be with Employment Exclusion Deleted.

- .3 Business Auto Liability (including owned, non-owned and hired vehicles):
 - .1 Combined Single Limit: \$1,000,000

- .4 If the General Liability coverages are provided by a Commercial Liability policy, the:
 - .1 General Aggregate shall be not less than \$2,000,000 and it shall apply, in total, to this Project only.
 - .2 Fire Damage Limit shall be not less than \$50,000 on any one Fire.
 - .3 Medical Expense Limit shall be not less than \$5,000 on any one person.

- .5 Umbrella Excess Liability:

\$5,000,000 over primary insurance
\$10,000 retention for self-insured hazards each occurrence. Umbrella coverage shall also be excess over fire damage legal liability limit.

.6 The above policies, with the exception of Workers' Compensation shall name the Owner, Architect and Architect's consultants as additional insureds and shall contain a provision that this policy will be the primary coverage for any claim arising out of this project with the following clause added:

"The insurance afforded to the additional insured is primary insurance. If the additional insured has other insurance which is applicable to the loss on an excess or contingent basis, that insurance will be excess over this insurance, and not coinsurance, and the amount of the company's liability under this policy shall not be reduced by the existence of such other insurance."

- .7 In addition to the insurance required above, the Contractor shall purchase and maintain *Owner's Protective Liability Insurance* issued to the Owner in the Owner's name and covering the Owner's contingent liability for damages imposed by law and claims which may arise from all operations under the Contract by the Contractor or Contractor's agents, including omissions and supervisory acts by the Owner provided by the same insurer that is providing CGL coverage for the Contractor. Limits of liability for this coverage shall be: \$2,000,000 General Aggregate; \$1,000,000 Each Occurrence. The Contractor shall file the original copy of this **policy** with the Owner through the Architect.
- .8 Any deductible, if applicable to loss covered by insurance provided by the Contractor, shall be borne by the Contractor.
- .9 The Commercial General Liability policy shall utilize form CG 2010 (Form B) - Additional Insured - Owners, Lessees or Contractors, or its equivalent and will show evidence of endorsement on the face of the certificate of insurance.
- .10 The Commercial General Liability policy (General Aggregate) shall be endorsed to include CG 25 03 - Aggregate Limits of Insurance (Per Project), or its equivalent.

11.1.3.1 Add the following:

11.1.3.1 A Certificate of Insurance substantiating that the Contractor has obtained all required insurance coverages shall be filed in duplicate with the Architect within ten (10) days of issue date of Notice of Award of Contract. The Certificate shall indicate on the face that Owner and Architect are additional insureds. No work shall be performed by the Contractor until such certificates have been provided. Approval of these Certificates of Insurance by the Owner or Architect shall not relieve or decrease the liability of the Contractor hereunder. The Contractor shall not allow any Subcontractor to commence work on his Subcontract until all the insurance required by the Subcontractor has been obtained.

11.1.5-8 Add the following:

11.1.5 The Contractor shall submit to the Owner three (3) executed copies of Certificates of Insurance on ACCORD Form 25S accompanied by fully executed AIA Form G715 Supplemental Affidavit. In addition, the Contractor shall provide the Owner copies of any endorsements subsequently issued amending coverage or limits. The Contractor shall, upon request of the Owner, submit true copies of all policies specified.

11.1.5.1 In addition to certificates submitted to Owner, submit one (1) copy of each certificate to Architect for their files.

11.1.6 If any of the insurance terminates or is reduced before the Contract is completed or during the period of completed operations coverage, and the Contractor fails to maintain continuance of such insurance, the Owner is entitled to provide the protection for itself, to pay the premiums, and to charge the cost to the Contractor.

11.1.7 The insurance requirements set out in this Exhibit are independent from all other obligations of Contractor under this Agreement and apply whether or not required by any other provision of this Agreement.

11.1.8 Neither the Owner, Construction Manager or Architect shall have any duty to Contractor or to any of its insurers or their insurance agents to review any certificates or copies of insurance furnished by Contractor or to determine whether the terms of each certificate or policy of insurance comply with the insurance-related provisions of the Agreement. A failure to detect that Contractor has not submitted certificates, or proper certificates, or is otherwise not in compliance with the insurance-related provisions of the Agreement shall not be considered a waiver or other impairment of any of the Owner's rights under such insurance-related provisions.

11.2 Delete 11.2 in its entirety.

11.3 PROPERTY INSURANCE

11.3.1 Delete the following: “. . . and cost of materials supplied or installed by others, comprising total value . . .”

11.3.1.1 Delete the word "theft" from the "all risk" insurance items included in this clause

11.3.1.1. Replace the phrase “all risk” with the following: “special form property coverage”.

(NOTE: The Owner will not provide insurance for theft. The Contractor is responsible for all tools, equipment, materials, Work, etc., until Substantial Completion and possession by the Owner. The Contractor shall provide insurance for theft as he may require for himself, his subcontractors, and his employees' protection.)

11.3.1.4 Replace with the following:

11.3.1.4 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 at full replacement cost basis without voluntary deductible.

11.3.5: Delete **11.3.5**.

11.3.6 Replace with the following:

11.3.6 An “Evidence of Property Insurance Form” reasonably acceptable to the Contractor shall be filed with the Contractor prior to commencement of the Work.

11.3.7 and 11.3.8: Delete the phrase “as fiduciary” where it appears in **11.3.7** and **11.3.8**.

11.3.9 Delete the phrase “as fiduciary” in the two locations that it appears. Replace the second sentence with the following: “The Owner shall deposit in a separate account proceeds so received, which the Owner shall distribute in accordance with each party's interest.”

11.3.10 Replace with the following:

11.3.10 The Owner shall have the power to adjust and settle a loss with insurers.

11.4 PERFORMANCE BOND AND PAYMENT BOND

11.4.1 Replace with the following:

The Contractor shall furnish, in triplicate bonds covering faithful performance of the Contract and payment of obligations arising thereunder. Bonds shall be obtained from a surety satisfactory to the Owner rated "A-" or better by Best's rating service or an equivalent rating as certified by the Superintendent of Insurance, licensed to do business in New York State, and listed in the latest issue of the U.S. Treasury Circular 570. The amount of each bond shall be equal to 100 percent of the Contract Sum. The value of each bond shall be adjusted during the Project construction period to reflect changes in the Contract Sum. The cost of the required bonds shall be included in the Contract Sum. Each bond shall be maintained throughout the duration of the Project.

11.4.1.1 The Contractor shall deliver the required bonds to the Architect prior to beginning construction activity at the site, but no later than 7 days after execution of the Contract, on AIA Document A312, December 1984 edition, Performance Bond and Labor and Material Payment Bond.

11.4.1.2 The Contractor shall require the attorney-in-fact who executes the required bonds on behalf of the surety to affix thereto a certified and current copy of the power of attorney.

11.5 Add the following:

11.5 ASBESTOS ABATEMENT INSURANCE

11.5.1 The contractors responsible for Asbestos Abatement shall provide Asbestos Abatement Liability Insurance for the limits specified above for General Liability. The contractors responsible for Asbestos Abatement expressly agree to name the Owner and Architect and Architect's consultants as additional insureds on the Asbestos Abatement Liability Insurance policy. The policy shall be issued on an occurrence basis.

11.5.2 If asbestos liability insurance is not available from a company licensed to sell insurance in the State of New York, immediately notify the Owner in order that other appropriate insurance can be written.

11.5.3 Such insurance shall contain an endorsement providing coverage for the asbestos removal/treatment/abatement activities which are the subject of this work.

11.5.4 For the asbestos removal work only, the Umbrella Excess Liability coverage shall be \$1 million for each occurrence and for aggregate. The Excess Liability remains at \$5 million for all other Work.

11.5.5 In addition, the contractors responsible for Asbestos Abatement shall carry pollution coverage in the amount of \$1,000,000 each occurrence.

12.2 CORRECTION OF WORK

12.2.2.1 Replace with the following:

12.2.2.1 In addition to the Contractor's obligations under Paragraph **3.5**, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Subparagraph **9.9.1**, or by terms of an 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 written notice from the Owner to do so. This period of one year 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 the Work. This obligation under this Section **12.2.2.1** shall survive acceptance of the Work under the Contract and termination of the Contract. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Paragraph 2.4.

12.2.2.1 Add the following:

This obligation under this Subparagraph 12.2.2.2 shall survive acceptance of the Work under the Contract and termination of the Contract.

12.2.2.3 Replace with the following:

12.2.2.3 Any replacement made under any guarantee required by or included in the Contract Documents, or within one (1) year after the date of substantial completion of the Contract, shall likewise be guaranteed as stipulated above from the date such replacement is accepted by the Owner.

ARTICLE 13: MISCELLANEOUS PROVISIONS

13.1 GOVERNING LAW

13.1 Replace with the following:

13.1 All claims, disputes and other matters arising out of or relating to the Contract Documents or the breach thereof, shall be decided by a court having appropriate subject matter jurisdiction located within the county where the Project is located. The Contract shall be governed by the laws of the State of New York regardless of its conflict of laws provisions.

Add the following:

13.1.2 Add the following:

13.1.2 Codes, Laws & Standards:

13.1.2.1 Except as otherwise specified, comply with all applicable laws, codes, regulations, and specification standards where applicable, including, but not limited to, the current editions of applicable requirements of the following agencies. In the case of conflicting requirements, the most stringent shall apply.

New York State Department of Education (NYSED)

American Society for Testing and Materials (A.S.T.M.)

American National Standards Institute (ANSI)

National Electric Code

American Insurance Association

National Fire Protection Association (NFPA)

The Occupational Safety and Health Administrations of the U.S. Department of Labor, and all regulations of the New York State Labor Law pertaining to hazardous conditions that may develop in connection with the work of this Contract.

All applicable Federal, State, County and local Building, Health, Plumbing and Electrical Codes, laws, ordinances and regulations.

Local utility company regulations.

Any covered product or material used shall comply with combustion/toxicity test as found in New York State Building Code and be listed by the Department of State Building Materials and Finishes Data File.

13.2.1 Delete “neither party to the Contract shall” from the second sentence and insert “Contractor shall not”.

13.6 INTEREST

13.6 Replace with the following:

13.6 Payments due and unpaid under the Contract Document shall bear interest from the date payment is due at the legal rate of Four (4) percent per annum.

13.7 COMMENCEMENT OF STATUTORY LIMITATION PERIOD

13.7 Delete in its entirety.

13.8 - 13.9 Add the following:

13.8 LABELED MATERIAL AND EQUIPMENT

TULLY CSD – BUS GARAGE BUILDING RENOVATIONS & FUEL TANK REPLACEMENTS

13.11.1 The term "Labeled" shall apply to materials or equipment to which has been attached a Label of a nationally recognized testing laboratory that maintains periodic inspection of materials or equipment and by whose labeling, compliance with nationally recognized standards or the conduct of tests to determine suitable usage in a specified manner, is assured. Unless otherwise specified, the Underwriters Laboratories, Inc., is the recognized agency for required labeling.

13.9 SEPARATION OF METALS

13.12.1 The Prime Contractor shall separate all dissimilar metals with vinyl gaskets or a heavy coat of bituminous paint (except where bitumen may react with caulking or other materials) to prevent corrosive or electrolytic action. Where there is a conflict as to which Contractor or subcontractor provides the separation materials, the Contractor or subcontractor whose work is installed after Work is installed that requires separation from his Work, shall provide the separation materials.

ARTICLE 14: TERMINATION OR SUSPENSION OF THE CONTRACT

14.1 TERMINATION BY THE CONTRACTOR

14.1.1 Change 30 days to 60 days.

14.1.1.4 Delete this paragraph in its entirety.

14.1.2 Replace with the following:

14.1.2 If one of the reasons described in 14.1.1 exists, the Contractor may, upon seven additional days written notice to the Owner, Construction Manager and Architect, and upon failure of the Owner or Architect to cure such reason, terminate the Contract and recover from the Owner payment for Work executed prior to date of termination and for proven loss with respect to materials, equipment, tools, and construction equipment and machinery, including reasonable overhead and profit to the date of termination.

14.2 TERMINATION BY THE OWNER FOR CAUSE

14.2.1 Replace with the following:

14.2.1 If, in the opinion of Owner or Architect, Contractor at any time shall refuse or fail to provide sufficient skilled workers or proper materials, fail in any respect to timely prosecute the Work, fail to comply with any provisions of the Contract Documents, make a general assignment for the benefit of its creditors or if a receiver should be appointed on account of Contractor's insolvency, then, upon two business days written notice, unless the conditions specified in such notice shall have been eliminated within the two business days, Owner may without prejudice to any other remedies: (i) take reasonable steps to overcome the condition in which case Contractor shall be liable to Owner for the direct and indirect costs of such action; or (ii) terminate the Contractor for default. In either of such events Owner may enter the premises, take possession of all materials and equipment of Contractor, accept the assignment of any or all subcontracts or purchase orders involving the Project, and complete the Work by itself, through others, or by whatever method or methods Owner deems

expedient. In case of termination for default, Contractor shall not be entitled to receive any further payment until the Work shall be fully completed and accepted by Owner. At such time, if the unpaid balance of the Contract sum shall exceed the costs incurred by Owner in completing the Work, such excess shall be paid by Owner to Contractor. If the amount paid by Owner for completing the work shall exceed the unpaid balance of the Contract Sum, then Contractor shall pay Owner the difference within five business days following demand by Owner. Contractor shall pay all reasonable costs of collection, including reasonable attorney's fees, if any. These obligations survive the termination of the Contract.

14.2.2 - 14.2.4 Delete **14.2.2** through **14.2.4**.

14.2.2 Add the following:

14.2.2 If an attempt by the Owner to terminate this Agreement for cause fails to comply with the requirements of this Agreement, such termination shall be deemed to be a termination for Owner's convenience pursuant to **14.4** below.

14.4 Add the following:

14.4 OWNER'S TERMINATION FOR CONVENIENCE

14.4.1 The Owner may at any time and without cause terminate the Contract in whole or in part for the Owner's convenience. Termination by the Owner under this Paragraph shall be by a notice of termination delivered to the Contractor specifying the extent of termination and the effective date.

14.4.2 Upon receipt of a notice of termination for convenience, the Contractor shall immediately, in accordance with instructions from the Owner, proceed with the performance of the following duties regardless of delay in determining or adjusting amounts due under this Paragraph:

14.4.2.1 Cease operation as specified in the notice;

14.4.2.2 Place no further orders and enter into no further subcontracts for materials, labor, services or facilities except as necessary to complete continued portions of the Contract;

14.4.2.3 Terminate all subcontracts and orders to the extent they relate to the Work terminated;

14.4.2.4 Proceed to complete the performance of Work not terminated; and

14.4.2.5 Take actions that may be necessary, or that the Owner may direct, for the protection and preservation of the terminated Work.

14.4.3 Upon such termination the Contractor shall recover as its sole remedy payment for Work properly performed in connection with the terminated portion of the Work prior to the effective date of termination and for items properly and timely fabricated off the Project site, delivered and stored in accordance with the Owner's instructions. The Contractor hereby waives and forfeits all other claims for payment and damages, including without limitation, anticipated profits for Work not completed.

14.4.4 The Owner shall be credited for (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; and (3) the value of the materials, supplies, equipment or other items that are to be disposed of by the Contractor that are part of the Contract Sum.

15. CLAIMS AND DISPUTES

15.1.2 Change 21 days to 15 days in both locations. Replace the following phrase, “. . . or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later” with the following:

“. . . or within 15 days after the claimant recognized or should have, with due diligence, recognized the condition giving rise to the Claim, whichever is later”

15.1.2 Add the following to the end of **15.1.2**:

Any written notice of Claims shall include the heading: “NOTICE OF CLAIM” at the top of the notice. Any Notice of Claim shall be sufficiently detailed and descriptive to allow for meaningful review and resolution.

15.1.2.1 Add the following:

15.1.2.1 IMPORTANT NOTICE REGARDING CLAIM PROCEDURES: The Contractor’s obligation to strictly follow the requirements of Section **15.1.2** in its entirety including the giving of timely and complete notice of a claim is a condition precedent to recovering under any claim. Failure of the Contractor to strictly follow these requirements shall constitute waiver of the claim. An additional Claim made after the initial Claim has been made shall not be considered unless also submitted in accordance with Section **15.1.2** and in a timely manner.

15.1.2.2 Add the following:

15.1.2.2 See also **10.2.8**.

Delete the late sentence of **15.1.5.1**.

15.1.5 Add the following:

15.1.5.3 Any Claim for an increase in the Contract time, must be preceded by written notice detailing the cause of each such delay which notice must be given in writing to the Owner and the Architect and Construction Manager if applicable within 72 hours of the occurrence causing the delay. Such notice must specify each such occurrence, describe how the occurrence is causing delay, include an estimate of those costs being incurred as a result of the delay, and set forth the probable effect of the delay on the progress of the Work.

15.1.5.4 Failure to strictly comply with these requirements may, at the discretion of the Owner, be deemed sufficient cause to deny any extension of time.

15.1.5.5 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.

15.1.5.6 Claims for increase in the Contract Time shall 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 may require including, where appropriate, a revised construction schedule indicating all the activities affected by the circumstances forming the basis of the Claim.

15.1.5.6 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 Delete **15.1.6** in its entirety.

15.2 INITIAL DECISION

15.2.2 Insert at the end of **the 1st sentence** the following: "or (6) submit a schedule to the parties indicating when the Architect expects to take action".

15.2.6 and **15.2.6.1** Delete **15.2.6** and **15.2.6.1**.

15.2 Add the following:

15.2.6 When a written decision of the Architect states that (1) the decision is final but subject to dispute resolution and (2) litigation of a Claim covered by such decision must be commenced within Six (6) months after the date on which the party making the demand receives the final written decision, then failure to commence litigation within said Six (6) month period shall result in the Architect's decision becoming final and binding upon the Contractor. If the Architect renders a decision after proceedings have been initiated, such decision may be entered as evidence, but shall not supersede such proceedings unless the decision is acceptable to all parties concerned.

15.2.7 All written claims for damages or extra work shall include time of occurrence, location and other identifying factors and shall be supported if so required by the Architect, by letters, journals, or diaries, instructions, vouchers, or other pertinent or applicable records.

15.2.8 Owner shall not be liable to any Contractor or Subcontractor for damages caused by any breach of contract, delay in performance or other act of neglect by other Contractors or Subcontractors having contracts for performance of any portion of the Project.

15.3 MEDIATION – Delete **15.3.1** and **15.3.2** in their entirety.

15.4 ARBITRATION

15.4.1 – 15.4.4.3 Delete 15.4.1 through 15.4.4.3 in their entirety.

15.4 Add New **Article 15.4 DISPUTE RESOLUTION** including the following:

15.4.1 At the election of the Owner, the Owner and Contractor will attempt in good faith to resolve any controversy or claim arising out of or relating to the Contract, its breach, termination or validity through non-binding mediation and otherwise as set forth in this Section. Unless otherwise agreed, any mediation shall take place at the location of the Project

15.4.2 Should the Contractor seek to pursue any claim subject to this Section **15.6** the Contractor shall make a written demand to the Owner requesting that the Owner elect whether or not mediation is required. The written demand shall expressly reference and include a copy of this Section **15.4** and be addressed via Certified Mail, Return Receipt Requested, to the Superintendent of Schools for the Owner. The Owner shall respond in writing. If a writing is not post marked to, or otherwise received by, the Contractor within fifteen business days of receipt by the Owner of such demand relating to mediation, the Owner shall be deemed to have elected to forgo mediation.

15.4.3 If the controversy or claim has not been resolved pursuant to the mediation procedure within 120 days of the commencement of such procedure, or if the Owner elects not to participate in mediation, any further proceedings shall be via one of the following methods which shall be as elected by the Owner:

- (i) Arbitration at the location of the Project in accordance with the Construction Industry Rules of the American Arbitration Association; or
- (ii) If Owner, in its sole discretion, rejects arbitration, then by resort to litigation proceedings in New York State Supreme Court in the county where the Owner maintains its principal place of business, which court shall have exclusive jurisdiction.

15.4.4 After satisfying the requirements pertaining to mediation, should the Contractor seek to further pursue any claim subject to this Section **15.6**, the Contractor shall proceed via Arbitration or Litigation as elected by the Owner. If the Owner has not sooner elected, the Contractor shall make an additional written demand to the Owner requesting that the Owner express its election whether or not further claims shall proceed through Arbitration or Litigation. The written demand shall expressly reference and include a copy of this Section **15.4** and be addressed via Certified Mail, Return Receipt Requested, to the Superintendent of Schools for the Owner. The Owner shall respond in writing. If a writing is not post marked to, or otherwise received by, the Contractor within twenty eight (28) business days of receipt by the Owner of such demand, the Owner shall be deemed to have elected to proceed via litigation.

15.4.5 Wherever reference is made to arbitration in the Contract Documents, such reference shall be changed to refer to litigation or such other dispute resolution proceeding as is established by the Owner pursuant to the terms of the Contract.

15.4.6 Should the Owner elect arbitration, the agreement to arbitrate shall be specifically enforceable in accordance with applicable law by any court having jurisdiction. This agreement to arbitrate is to be construed as broadly as possible in order to encompass every dispute, claim or controversy which may arise between the Parties.

15.4.7 Contractor shall carry on the Work and maintain its schedule during any proceeding under this article

15.4.8 The laws of the State of New York without reference to its conflicts of the law principles shall govern the Contract.

15.4.9 When litigation or arbitration may be commenced. Commencement of litigation or arbitration of any Claim may not be made until the earlier of (1) the date on which the Architect has rendered a final written decision on the Claim; (2) the thirtieth day after the parties have presented evidence to the Architect or have been given a reasonable opportunity to do so, if the Architect has not rendered a final written decision by that date; or (3) any of the events described in section **15.2**.

15.4.10 In no event may a demand for arbitration be made after the date when institution of legal or equitable proceedings based on such claim, dispute or other matter in question would be barred by the applicable statutes of limitations.

15.4.11 The Contractor shall carry on the Work and maintain the progress schedule during any proceeding under this Section.

Article 16 Add new Article 16 as follows:

ARTICLE 16 PROVISIONS REQUIRED BY LAW

16.1 PROVISIONS REQUIRED BY LAW

16.1 Each and every provision required by law to be made a part of this Contract shall be deemed to be inserted herein and the Contract shall be read and enforced as though all such provisions were included herein. Upon request of either party, this Contract shall be physically amended to properly show each such provision found not inserted or found incorrectly inserted.

16.1.1 Contract Deemed Executory: This Contract is executory to the extent of the monies available. No liability shall be incurred by the Owner beyond the monies available therefor.

16.2 HOURS AND WAGES

16.2.1 Contractor shall comply with the Prevailing Wage Rates as issued by the State of New York Department of Labor for the location and duration of this Project and with all applicable Laws and Regulations.

16.2.2 No laborer, workman, or mechanic in the employ of a Contractor, subcontractor or other person doing or contracting to do the whole or any part of the work contemplated by the Contract shall be permitted or required to work more than eight (8) hours in any one (1) calendar day or more than five (5) days in any one (1) week except in case of extraordinary emergency set forth in the Labor Law.

16.2.3 The wages (including supplements) paid for a legal days work shall not be less than the prevailing rate of wages (including supplements) as defined by law.

16.3 MINIMUM RATE OF WAGE AND SUPPLEMENT

16.3.1 The minimum hourly wage rates and supplements to be paid shall not be less than those listed in the current Prevailing Rate Schedule for the locality where the work is performed. Any redetermination of the prevailing rate of wages after the Contract is approved shall be deemed to be incorporated herein by reference as of the effective date of redetermination and shall form a part of these Contract Documents.

16.3.2 Supplements shall be as defined in Section 220 of the Labor Law, as amended.

16.3.3 Prevailing Wage Rate Schedule shall be submitted by Addendum to all Contractors, unless included.

16.4 APPRENTICES

16.4.1 Apprentices must be registered, individually, under a bona fide program registered with the New York State Department of Labor. The allowable ratio of apprentices to journeymen in any craft classification shall not be greater than the ratio permitted to the contractor as to his work force on any job under the registered program. Any employee who is not registered as above, shall be paid the prevailing wage rate and supplements for the classification of work he actually performed. The contractor or subcontractor will be required to furnish written evidence of the registration of his program and apprentices as well as of the appropriate ratios and wage rates for the area of construction, prior to using any apprentices on the contract work. (See New York Labor Law §220.3-e).

16.5 NON-DISCRIMINATION IN EMPLOYMENT

16.5.1 The (Each) Prime Contractor agrees, in accordance with the applicable provisions of the Labor Law of the State of New York, to the following:

16.5.2 That in the hiring of employees for the performance of work under this contract or any subcontract hereunder no contractor, subcontractor nor any person acting on behalf such Contractor or subcontractor, shall by reason of race, creed, color, disability, sex 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. See NYS Labor Law § 220-e (a).

16.5.3 That no Contractor, subcontractor, nor any person on his behalf shall, in any manner, discriminate against or intimidate any employee hired for the performance of work under this Contract on account of age, race, creed, color, national origin, sex, disability or marital status.

16.5.4 That there may be deducted from the amount payable to a Contractor by the Owner under this Contract, a penalty of fifty dollars (\$50.00) for each calendar day during which such person was discriminated against or intimidated in violation of the provisions of the Contract.

16.5.5 That this Contract may be cancelled or terminated by the Owner and all monies due or to become due hereunder may be forfeited, for a second or any subsequent violations of the terms of conditions of this Section of the Contract.

16.6 DUST HAZARDS

16.6.1 If in the construction of the work covered by the Contract, a harmful dust hazard be created for which appliances or method for the elimination of harmful dust hazards have been approved by the Board of Standards and Appeals, such appliances or methods shall be installed and maintained and effectively operated by the Contractor.

16.7 ASSIGNMENT OF PUBLIC CONTRACTS

16.7.1 As provided in Section 109 of the General Municipal Law, the Contractor is prohibited from assigning, transferring, conveying, subletting or otherwise disposing of the Contract, or of Contractors right title, or interest therein, or his power to execute such contract to any other person or corporation without the previous consent in writing of the officer, board or agency awarding the contract.

16.7.2 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 herein, 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 from 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.

16.8 Modification and Waiver. No modification or waiver of any provisions of this Agreement shall be valid unless in writing and signed by the party against whom the modification or waiver is sought to be enforced. No delay on the part of any party in exercising any of its rights or remedies hereunder shall operate as a waiver hereof nor shall any waiver on the part of a party hereunder preclude any other or further exercise thereof or any right or remedy hereunder.

16.9 Entire Agreement. This Agreement constitutes the entire understanding between the parties with respect to the subject matter hereof and supersedes all prior agreements or understandings whether oral or written.

END OF SUPPLEMENTARY CONDITIONS

RELEASE and LIEN WAIVER

WHEREAS, _____, hereafter called the "Undersigned," having entered into a written contract or purchase order with the **Tully Central School District**, (hereinafter the "OWNER") for the supplying of materials and/or the furnishing of labor and materials for the project known as **TULLY CSD – Building Renovations and Fuel Tank Replacement**

WHEREAS, Undersigned has requisitioned a PARTIAL/FINAL payment from the Owner, pursuant to such contract or purchase order.

NOW, THEREFORE, for good and valuable consideration including the PARTIAL/FINAL payment of \$_____ provided for herein, Undersigned agrees as follows:

- 1) Upon receiving payment from the Owner, the payment to which this instrument refers, Undersigned agrees not in any way to claim or file a mechanic's lien or other lien against said project, premises or any part thereof, or on the monies or other consideration due to become due for the Owner for any of the materials heretofore furnished or work or labor performed or furnished by the Undersigned hereby formally and irrevocably releases and waives in writing every and any lien, charges or claim of any nature whatsoever that it has, or as to which it may at any time have been entitled, up to and including the date hereof in connection with the said project, except for any unpaid retained monies unless the payment herein is payment of retainage, which lien waiver shall be for the benefit of the owner of the Project and the Owner if different.
- 2) Undersigned further says that all monies due for this work which includes all labor, material, fuel, transportation and equipment, fringe benefits, pension funds, apprentice training programs, employee vacations, welfare funds, and similar funds and payments as well as all applicable sales and used taxes, royalties, commissions, permits, bonds, guarantees, insurances, licenses, or patent fees have been paid in full except as noted below. (If none write "NONE").

And that there are no persons in a position to have or file a lien against the above mentioned work and/or the premises on which the same is located on account of any labor or materials furnished to Undersigned or any of the Undersigned's subcontractors or suppliers.

- 3) Undersigned agrees that the lien waiver appearing in Paragraph "1" hereof shall be deemed to be in compliance with the Lien Law of the State of New York.
 - 4) Undersigned agrees that any of its subcontractors or suppliers being entitled to any of the proceeds of the within payments have been paid except as noted below. (If none write "NONE").
- _____

- 5) Furthermore, Undersigned hereby formally and irrevocably releases and waives any rights to make a claim upon any labor and material payment bond issued to the Owner, for this project on account of the labor, services, materials, fixtures or supplies heretofore furnished to this date by the Undersigned for the said project.
 - 6) Furthermore, Undersigned hereby formally and irrevocably releases the Owner, from all claims of liability to the Undersigned except as noted otherwise herein for anything furnished or performed in connection with, relating to or arising out of the contract or out of the work covered by said contract, including, but not limited to, all claims for extra work, labor or materials, delays or increased costs due to changed conditions, loss of efficiency or productivity, nonsequential work operations, delays, acceleration, suspension of work, and for any prior act, neglect or default on the part of the Owner, or any of its officers, agents or employees in connection therewith, up to and including the date of this waiver, except for any unpaid retained monies.
 - 7) The Undersigned further acknowledges that neither the aforesaid payment nor acceptances by the Owner, of the work covered by the aforementioned contract and/or purchase order shall in any way or manner operate as, or constitute a release of waiver of the Undersigned's obligations, undertaking or liabilities under said contract or purchase order or in any way affect or limit the same.

This Agreement shall run to the benefit of the Owner, **Tully Central School District**, its successors and assigns; signed and dated this ____ day of _____, 2024.

AMOUNT OF THIS PARTIAL/FINAL PAYMENT:

\$ _____

Office/Authorized Signature

Printed Name and Title

Sworn to before me this _____ day of _____, 2024.

Notary Public

00 901 – STATEMENT OF SPECIAL INSPECTIONS & TESTS
PAGE 1

- 1.01 The following "Statement of Special Inspections and Tests" NYSED Form FP-SSI is a part of the Bid Documents. Where any part of the General Conditions of the Contract is modified or voided in these project documents, the unaltered provisions of that part shall remain in effect.

**** END OF SECTION ****

COVER SHEET

BUS GARAGE

SITE

LD100 SITE PLAN - DEMOLITION
L100 SITE PLAN – NEW AND DETAILS
L101 UNDERGROUND STORAGE TANKS) - PLAN, ELEVATION, SECTION AND DETAILS
L102 FUEL PUMP CANOPY – PLANS, ELEVATION, SECTIONS & DETAILS
L102A FUEL PUMP CANOPY - CEILING/DRAINAGE PLAN

ARCHITECTURAL

A100 FLOOR PLANS – DEMOLITION & NEW, AND DETAILS
A101 ALTERNATE BID DETAILS

HVAC

HV100 HEATING AND VENTILATION PLANS, DETAILS AND SCHEDULES

ELECTRIC SCHEMATIC DIAGRAMS

E100 SITE ELECTRIC CONDUITS
E101 ELECTRIC POWER WIRING DIAGRAMS

TANK MONITORING

TM100 FUEL TANK MONITORING SYSTEM DIAGRAM

**00 920 – WAGE RATES
PAGE 1**

PART 1 – GENERAL

- A. The NYS prevailing wage rates and labor laws are a part of the project documents and are binding to the contract agreement.
- B. Each Contractor shall pay all occupations employed on the site of work and as scheduled in the current wage rate schedule.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

- A. In accordance with Article 8, Section 220 (3-a) of the New York State Labor Law, the following link represents the most current prevailing wage rate schedules at the time of bidding, issued by the New York State Department of Labor specifically requested for this project:

<https://apps.labor.ny.gov/wpp/publicViewProject.do?method=showIt&id=1554856>

PRC# 2023009811

Contractor is to obtain the prevailing wage rates generated for this project at the New York State Department of Labor website.

- Assembly Bill Number 1839
- Notices regarding wage rate updates
- Wage rate schedule
- List of employers ineligible to bid on or be awarded public work

**** END OF SECTION ****

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Project; Work Covered by Contract Documents
- B. Contracts
- C. Administrative and Procedural Sections Applicable to all Contracts
- D. Temporary Facilities and Services Sections Applicable to all Contracts
- E. Work of the Separate Contracts
- F. Owner Furnished Items
- G. Statutory Requirements
- H. Contractor Use of Premises
- I. Work Sequence
- J. Building Permits, Fees, and Inspections
- K. Environmental Concerns including asbestos and VOC off-gassing.
- L. Lead Based Paint Worker Protection
- M. Work Schedule for all Work Contracts

1.02 RELATED SECTIONS

- A. Document 00701 - General Conditions: Duties and responsibilities of Architect and other parties.
- B. Section 00801 – Supplementary General Conditions
- C. Section 01 3100 - Project Coordination: Owner provided coordination of Work of separate contracts.

1.03 PROJECT INFORMATION

- A. Project Identification: Tully Central School District, Bus Garage Building Renovations & Fuel Tank Replacements

1. Project Location:

- a. District Bus Garage SED#: 42-19-02-04-4-004-009

- B. Owner: Tully Central School District, 20 State Street; Tully NY; 13159

1. Owner's Representative(s):

- a. Dr. Darcy Woodcock - Superintendent
- b. Mr. Kevin Sommer - Director of Business and Finance
- c. Mr. Jerry Bishop - Director of Facilities

01 1100 – SUMMARY OF PROJECT
PAGE 2

- C. Architect: Robertson, Strong & Apgar - 1054 James Street; Syracuse New York; 13203
 - 1. Architects Representative(s):
 - a. Lawrence C. Apgar, AIA, Project Architect

1.04 PROJECT - WORK COVERED BY CONTRACT DOCUMENTS

- A. Work for the renovations to the Bus Garage Building Renovations and Fuel Tank Replacements shown on the contract documents and as specified herein.
- B. Type of Contract
 - The Contract includes:
 - a. General Construction Work
 - b. Heating and Ventilation Work

1.05 CONTRACTS

- A. Perform Work of Contract under a stipulated sum contract with the Owner.
- B. Work of Contract is identified in the following Articles and on the Drawings.

1.06 ADMINISTRATIVE AND PROCEDURAL SECTIONS APPLICABLE TO ALL CONTRACTS

- Section 00 100 through 00 920
- A. Section 01 1100 - Summary of Project
- B. Section 01 2100 - Allowances.
- C. Section 01 2200 - Unit Price Items.
- D. Section 01 2300 - Alternates.
- E. Section 01 2600 - Change Order Procedures.
- F. Section 01 2900 - Applications for Payment.
- G. Section 01 3100 - Project Coordination.
- H. Section 01 3300 - Submittals.
- I. Section 01 3520 - Project Meetings.
- J. Section 01 4213 - Abbreviations.
- K. Section 01 4219 - Reference Standards.
- L. Section 01 4310 - Special Inspections and Structural Testing
- M. Section 01 4500 - Quality Control
- N. Section 01 5400 - Cutting and Patching.

- O. Section 01 6000 - Materials and Equipment.
- P. Section 01 7123 - Field Engineering
- Q. Section 01 7300 - Operation and Maintenance Data
- R. Section 01 7400 - Warranties and Bonds
- S. Section 01 7500 - Starting of Systems
- T. Section 01 7700 - Closeout Procedures
- U. Section 01 7800 - Closeout Submittals
- V. Section 01 9000 - Selective Demolition for Alteration Work

**1.07 TEMPORARY FACILITIES AND SERVICES SECTIONS APPLICABLE TO ALL
CONTRACTS**

- A. Section 01 5000 - Temporary Facilities.
- B. Section 01 5600 – Enclosures and Controls.
- C. Section 01 5719 – Environmental Controls
- D. Section 01 7600 - Protection of Installed Work, Existing Building, and Existing Site Features.

1.08 CONTRACT FOR FUEL SYSTEMS WORK CONSTRUCTION

- A. Division 0 - Procurement and Contracting Requirements.
- B. Division 1 - General Requirements:
 - 1. Administrative and procedural sections listed above.
 - 2. Temporary Facilities and Services sections listed above.
 - 3. Coordinate with work of separate contracts for HVAC, Electrical, Plumbing, and Theatrical Work.
- C. Work specified in Division 2 through Division 33.
- D. All Drawings.
- E. Furnish and install all labor, material, supervision, equipment, scaffolding, layout, engineering, deliveries, trucking, hoisting, rigging, shop drawings, submittals, and all other items related and required to complete all Work in accordance with the Contract Documents and all applicable codes having jurisdiction.
- F. The Contractor represents they have expertise in the performance of Work for this trade and assures all items to be complete, functional and installed in accordance with the best practices consistent with premium quality material and workmanship.

1.09 OWNER ITEMS

- A. The Owner shall remove and retain possession of existing items of furniture, equipment, supplies, materials, and other building furnishings to clear areas of work for the Contractors.

1.10 STATUTORY REQUIREMENTS OF REGULATORY AGENCIES

- A. This Contract also subject to provisions of Section 103-a of General Municipal Law of New York, may be subject to cancellation if Contractor, when called before a Grand Jury, refuses to testify concerning any transaction with State or any political subdivision thereof.
- B. General Municipal Law S101, re: separate contracts.
General Municipal Law S103, re: advertisement for contract.
General Municipal Law S103, re: equivalency (or equal) clause.
General Municipal Law S103, re: basis for award of contract.
General Municipal Law S103-3, re: non-collusion.
General Municipal Law S106-b, re: payment on public works contracts.
General Municipal Law S108, re: Workman's Compensation insurance.
General Municipal Law 109, re: non-assignment of public contracts.
- C. Labor Law S220, Subd. 2, re: 8-hour day, 40-hour week.
Labor Law S220, Subd. 3, and S220-d, re: minimum wage rates.
Labor Law S220-3, re: anti-discrimination.
Labor Law S222-a, re: elimination of dust hazard.
- D. Compliance with Section Nineteen Hundred Eighteen (1918) of Penal Law of State of New York; fill in all required forms, etc.

1.11 ACCESS AND USE OF SITE

- A. General: Contractor shall have limited use of Project site for construction operations as indicated on Drawings by the Contract limits and as indicated by requirements of this Section.
- B. Comply with all requirements of "Codes, Rules and Regulations of the State of New York, Title 8 Education Department, Chapter 11, Subchapter J, Part 155.5 – Uniform Safety Standards for School Construction and Maintenance Projects Specification Section 016000.
- C. Use of Site: Limit use of Project site to areas within the Contract limits indicated. Do not disturb portions of Project site beyond areas in which the Work is indicated.
 - 1. Limits:
 - a. Arrange use of site and premises to allow:
 - 1) Owner Occupancy
 - 2) Work by others.
 - 3) Use of site and premises by the public.
 - b. Emergency Building Exits During Construction:
 - 1) Keep all exits required by code open during construction period; provide temporary exit signs if exit routes are temporarily altered.
 - 2) All exit and escape windows shall be maintained at all times.
 - 3) Do not obstruct roadways, sidewalks, or other public rights-of-way without a permit.

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- 4) Do not use driveways, sidewalks or designated entrances for parking or storage of materials.
 - c. Keep temporary driveways and entrances serving the premises clear and available to the Owner, Architect, Construction manager and emergency vehicles at all times.
- 2. Driveways, Walkways and Entrances: Keep driveways and entrances serving premises clear and available to Owner, Owner's employees, and emergency vehicles at all times. Do not use these areas for parking or for storage of materials.
 - a. Schedule deliveries to minimize use of driveways and entrances by construction operations.
 - b. Schedule deliveries to minimize space and time requirements for storage of materials and equipment on-site.
 - c. Limit deliveries to times other than 45 minutes before school begins to 15 minutes after school begins and from 15 minutes before lets out to 45 minutes after school lets out.
- D. Condition of Existing Grounds: Maintain portions of existing grounds, landscaping, and hardscaping affected by construction operations throughout construction period. Repair damage caused by construction operations.
- E. Conditions of Existing Building: Maintain portions of the existing building affected by construction operations in a weather tight condition throughout the construction period. Repair damage caused by construction operation.
- F. Construction Staging Area:
 - 1. Contractors will be instructed to use designated staging/parking areas before start of construction.
 - 2. All staging of equipment, trailers, storage containers, etc. to be coordinated through the Construction Manager and cannot interfere with any other Contractor's work.
 - 3. Activity in the staging area shall be conducted in a manner that causes minimal disruption of the Owner's activities.
- G. Snow Removal: The Owner will be responsible for snow removal at parking lot and sidewalk areas outside the construction/staging area. The General Contractor (GC) shall be responsible for snow plowing and removal within the designated staging and construction areas. All other areas with fencing by a Prime Contractor other than the GC for staging, storage and construction shall have snow removal provided by that specific Prime Contractor.

1.12 CONTRACTOR USE OF PREMISES

- A. Coordinate use of premises through Owner's Representative per Section 01 5000 and all Sections relating to temporary facilities.
 - 1. **All workers of the Contractor who will be on the project and school property during any shift, are required to be fingerprinted and background checked by a third-party company recognized by the school district and NYSED. All costs associated with worker verification, background checks, and fingerprinting shall be borne by the Contractor. Only workers who have passed all required background checks and verification systems will be allowed on the project.**

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2. All workers shall be required to wear photo identification badges provided by their employer at all times for identification. Provide name, contractor, and photo. Badges will be spot be checked daily. If a worker is found without a badge he/she will be removed from the site.
- B. There shall be no smoking allowed at any time anywhere on the site, this includes E-cigarettes and chewing tobacco.
- C. The work of the project is broken into phases with starting and completion dates that allow the school to function while construction is underway. Any proposed changes to this schedule must be thoroughly reviewed with the District, Owner's Representative, and the Architect in a timely manner so as not to delay the proposed work sequence.
- D. The General Contractor shall erect fencing with gates around each of their work zones not already enclosed in a fence and keep them in place until all their and other primes work is complete.
- E. The Contractors shall erect barriers for safety inside and outside the buildings, and dust/contaminant control barriers including grills, vents, etc. as necessary within the buildings between Owner used areas and construction areas. All trash and scrap materials shall be removed daily from existing building and site work areas. There shall be no movement of contractors or debris through corridors of occupied space during school hours.
- F. Any use of newly renovated interior spaces for Contractor storage, office or production areas shall be coordinated through the Owner's Representative. See other sections of this specification for use of exiting utilities and facilities.
- G. As sections of the project are brought to completion, Contractors shall be responsible to leave the premises, existing and new construction, in a secure manner at the end of each workday. All doors, windows and openings, existing and new, shall be locked or temporarily secured each day. Total building security shall be coordinated with the Owner's Representative and school staff.
- H. At work of renovations to existing buildings, specific exiting points for the building through that portion of the building under rehabilitation must be maintained. Entrances for use by the contractor's workmen and delivery of materials shall be as mutually agreed to by the contractors and the School. Provide plywood or poly to protect existing floors, walls and door jambs from damage during movement of materials. Surfaces damaged shall be repaired or replaced at no cost to the Owner.
- I. Safety shall be the sole responsibility of the Contractors. Contractors shall erect fencing, temporary tunnels, barriers, tape, walls, railings, lights, and other means to prevent students, faculty, staff and visitors from accidentally coming in contact with the work or falling into excavations. Barriers shall be provided similarly for vehicular traffic. Excavations should not be left open overnight. Contractors shall verify that VOC containing materials have "off-gassed" prior to occupancy of any space.
- J. Areas for Contractor parking, storage, trailers, staging and offices on the sites shall be coordinated with the Owner's Representative. Access for vehicles, delivery of materials, etc shall be coordinated thru the Owner's Representative. Vehicles, traffic and parking shall respect the normal operations of the Schools and related bus traffic. Designated parking areas for workmen and truck unloading areas shall be established. Do not block fire lanes or access ways for fire vehicles.

- K. All required exits, exit ways and emergency window exits necessary for the safe operation of the school building shall be maintained clear and unobstructed at all time by the contractors and contractor's materials. Temporary "tunnels" thru work areas or corridor barriers will be required to provide safe exiting of buildings while interior renovations are constructed.
- L. Contractors shall schedule noisy and dusty construction operations at a time least detrimental to the normal operations of the school building. No operations generating 60 dbcls or more shall take place in the occupied portion of the building when adjacent spaces are occupied. Loud talking, shouting, obscene gestures, and use of profanity shall be prohibited anywhere on school grounds. These will be no bare chests allowed while school is in session. Minimum dress requirements shall be long pants, work boots, shirt with minimum 4" sleeve, and hard hat.
- M. Utility outages and shutdowns to be planned in advance by the Contractors with ample warning given the Owner. Contractors shall coordinate such outages and shutdown with the Owner's Representative and the Owner's major activities to establish a mutually agreeable time frame and duration.
- N. Contractors shall exercise caution where work is adjacent to windows of occupied spaces. Provide fencing or other barriers to safely protect occupants from glass breakage, noise, dust and other debris resulting from the work. Proper exiting from occupied spaces and the building in general must be maintained.
- O. **Uniform Safety Standards For School Construction and Maintenance Projects.**
See the *Regulations of the Commissioner of Education, Part 155, Section 155.5.*
 - 1. "The occupied portion of any school building shall always comply with the minimum requirements necessary to maintain a certificate of occupancy."
 - 2. "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."
 - 3. "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.

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- 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.”
4. “Maintaining exiting and ventilation during school construction projects.
- a) A plan detailing how exiting required by the applicable building code will be maintained. Paragraph 3.10 of Section 01 5000, and Paragraph 3.02 F of Section 01 7600 for 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.” All doors scheduled to be replaced shall have work completed when there is no student occupancy of the buildings. All temporary barriers and exits proposed by the Contractor shall be approved by the Architect.
 - b) A plan detailing how adequate ventilation will be maintained during construction. Refer to Specification Section 01 5000, Paragraph 3.07 and follow all requirements. 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.” All temporary ventilation methods proposed by the Contractor shall be approved by the Architect’s engineering consultant.
5. “Fire and hazard prevention. Areas of buildings under construction that are to remain occupied shall maintain a certificate of occupancy. In addition, the following shall be strictly enforced:
- a) No smoking is allowed on public school property, including construction areas.
 - b) 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.
 - c) Proper operation of fire extinguishers, fire alarm, and smoke/fire detection shall be maintained throughout the project.”
6. “Noise abatement during construction and maintenance activities. 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.”
7. “Control of chemical fumes, gases, and other contaminants during construction and maintenance projects.”

- a) The Contractor shall be responsible for the control of chemical fume, gases, and other contaminants produced by welding, gasoline or diesel engines, roofing, paving, painting, etc. to ensure they do not enter occupied portions of the building or air intakes.
 - b) The Contractor shall 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.
 - c) The Contractor shall maintain Manufacturer's material safety data sheets (MSDS) on the job 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.
8. It is anticipated lead containing materials will be disturbed by other work of the project. The following requirements will apply: Surfaces that will be disturbed by reconstruction must have a determination made as to the presence of lead. Projects which disturb surfaces that contain lead shall have in the specifications a plan prepared by a certified Lead Risk Assessor or Supervisor which details provisions for occupant protection, worksite preparation, work methods, cleaning and clearance testing which are in general accordance with the HUD Guidelines.
9. 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.
10. “Post construction inspection. 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.”

1.13 WORK SEQUENCE

- A. In general, it is intended that the work of this project be undertaken as detailed in the schedule listed in paragraph 1.21 below.
- B. As time is of the essence to begin the work of this project, it is intended that the Contractors for this project submit shop drawings, place material orders and receive delivery of all materials in a timely manner that respects the starting and completion dates of the construction schedule.
- C. Contractor understands that time is of the essence and will adequately man the job to successfully complete the Contract Work in accordance within the dates provided in the contract documents and in accordance with the phasing schedule. The Contractor shall base his bids on the requirements and time frames provided in the contract documents and shall arrive on site when the schedule so directs ready to work so as to meet the end dates of each phase. Manpower projection to meet this aggressive schedule must be met. The option to work extended hours, 2nd shift, and weekends at the Contractor's expense may be performed to meet the intended dates. No overtime costs will be considered if contractor is behind. The Contractor must complete as scheduled.
 - a. For exterior and interior locations when school is in session, the Contractor will work 3pm to 11pm (second shift) maintaining isolation barriers to student occupied

- areas during work hours and coordinate the daily work activities with the Owner and Owner's Project Representative.
 - b. For exterior and interior locations when school is not in session, the Contractor will work 6am to 3pm (first shift) and coordinate the daily work activities with the Owner and Owner's Project Representative.
 - c. All work areas to be occupied by students shall be cleaned up before school is occupied and all exit ways re-established as required to meet code.
- D. The phasing dates of commencement and completion of work have been coordinated with the Owners educational program. Milestone dates for each phase must be met and are not negotiable.
- E. All work shall be coordinated with the Owner's schedule through the Owner's Representative.
- F. Local custom and trade union jurisdictional settlements do not control the scope of the work of each contract. When a potential jurisdiction dispute or similar interruption of work is first identified or threatened, affected contractors shall negotiate a reasonable settlement to avoid or minimize interruption and delays.
- G. All Work performed after school hours as required to meet the schedule or complete the project shall be performed without overtime costs. All scheduling shall be coordinated with the Owner's Representative. All occupied spaces shall be returned to original condition the following day. Classrooms shall be cleaned at the end of each work shift.

1.14 ABATEMENT COMPLETION TIMES – N/A

1.15 BUILDING PERMITS, FEES AND INSPECTIONS

- A. The building permit shall be obtained by the School District and issued by the State Education Department. The Contractor will not be required to obtain a local building permit.
- B. The Contractor shall secure and pay for the project related permits, the health and environmental impact related fees.
- B. The Contractor shall, make all arrangements, secure and pay for all other permits and governmental fees, licenses and inspections necessary for proper execution and completion of their contract which are legally required.

1.16 ENVIRONMENTAL CONCERNS

- A. Some children and adults suffer from chemical sensitivities or allergies stimulated by certain construction materials and equipment. Contractors shall not knowingly install materials, insulations, adhesives, products containing toxic solvents, products producing long-life off-gassing or other potentially hazardous materials in this building. Contractors shall not install building products that have been identified by governmental agencies as hazardous or declared illegal to be used in building construction. No product assembly shall be brought into the building while occupied unless it has first completed off-gassing. See Section 01 5719.

1.17 ASBESTOS MATERIALS

- A. No new asbestos containing materials (ACBM) shall be used in this project.

1.18 ASBESTOS REMOVAL

- A. Removal of asbestos containing materials is part of the General Construction Contract. See abatement drawings and specifications for requirements. All work to be done in accordance with Industrial Code rule 56.

1.19 LEAD PAINT

- A. It is anticipated that existing lead painted surfaces will be demolished, altered, or cut as part of this project. The Contractors must be alert to the possibility of lead paint and take all precautions as required for inhabitant and worker safety. See specification section 02 8313. Lead paint certification of contractors who come in contact with lead will be required on this project.

1.20 MISCELLANEOUS PROVISIONS

- A. Work Sequence:

1. Work will be conducted in a number of continuous phases to provide the least possible interference to the activities of the Owner's personnel and to permit the facilities to be partially utilized during implementation of the work. The Contractor is expressly forewarned that impacts to the construction schedule during any phase or portion of the project will not be permitted.
2. Should overtime work be required by a Prime Contractor to ensure the completion within the specified (phased) schedule, all costs for this work is the responsibility of the Contractor. The architect shall have the authority to direct the contractors and subcontractors to work overtime including weekends to maintain the schedule at no additional cost to the Owner. Contractors warrant that the work shall be physically complete, including punch list, startup, and commissioning, within the early start and late finish schedule milestones.
3. Contractor shall provide multiple crews to maintain project schedule. Each crew is to be furnished with its own supervision, cranes, scaffold and other means necessary to maintain the Project Schedule.
4. Each Contractor is responsible for supervision of their Sub-Contractors at all times.

- B. Requirements of Contracts

1. Extent of Contract: Unless the Contract Documents contain a more specific description of the Work, names and terminology on Drawings and in Specification Sections determine which contract includes a specific element of Project.
 - a. Unless otherwise indicated, the Work described in this section for each contract shall be complete systems and assemblies, including products, components, accessories, and installation required by the Contract Documents.
 - b. Local custom and trade-union jurisdictional settlements do not control the scope of the Work of each contract. When a potential jurisdictional dispute or similar interruption of work is first identified or threatened, affected contractors shall negotiate a reasonable settlement to avoid or minimize interruption and delays.

- c. Trenches for the Work of each contract shall be provided by each contractor for its own Work unless noted otherwise.
- d. Cutting and patching for the Work of each contract shall be provided by each contractor for its own Work unless noted otherwise. Patching shall mean restoring surfaces to match adjacent or ready to accept new finishes as scheduled.
- e. Firestopping for the Work of each contract shall be provided by each contractor by an employee certified for use of firestopping product.
- f. Within ten (10) working days after preliminary horizontal bar-chart-type construction schedule submittal has been received from General Construction Contractor, submit a matching preliminary horizontal bar-chart schedule showing construction operations sequenced and coordinated with overall construction.
- g. Dewatering is the responsibility of each contractor requiring it.
- h. All contractors will be responsible to maintain and update a master red-line set of as-built drawings, on a monthly basis as a condition of payment. The master redline set will be kept in the construction manager's site office. Just prior to the payment application being sent, each contractor will have their site representative update the drawings with any and all changes made during the month including; posting all change order work, field directives, sketches issued, Requests for Information (RFI) answers received, etc.
- i. All contractors are to maintain one dedicated employee as a fire watch during all torch cutting and welding activities on this project. The fire watch person shall remain on watch for no less than two (2) hours after the activity is completed. The worker shall not perform any other work other than firewatcher during this time. Comply with all requirements of Chapter 26 of the Fire Code of New York State.
- j. Painting of exposed piping; conduit in occupiable spaces shall be by installing contractor unless otherwise noted..
- k. All Contractors performing sub grade work shall request utility underground location stakeout well in advance of excavation beginning. Contractor performing sub grade work shall also employ the services of an Underground Utility Locating Contractor to locate the District's private underground utilities. Contractors will be responsible for maintaining all stakeout location throughout construction, as well as noting utility locations and depths on the master red-line as-built drawing set in the site office.
- l. Cutting, removal and patching of concrete slabs is the responsibility of the Contractor requiring the slab removals, unless otherwise noted on the Contract Documents. This includes both partial and/or total slab removals that are required for the work of the Contract.
- m. The contractor making the penetration through existing partitions, walls or load bearing walls unless noted otherwise in the documents shall provide loose lintels. At minimum penetrations through walls with an opening larger than 12" horizontally will require a lintel unless noted otherwise in the documents.
- n. Structural reinforcing shall be provided by GC2 General Construction Contractor coordinated with the Prime making penetration through the floor slab, roof deck, wall, partition or load bearing wall unless noted otherwise in the documents. All openings larger than 10" x 10" shall be structurally reinforced.

C. Specific Requirements of the Contracts

- 1. The Contractors shall furnish all material, labor, equipment, subcontractors, supervision, management, and administration required for the total performance of the

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work of this contract as listed in the following specification sections and shown on the following drawings including, but not limited to:

- a. All specification sections and drawings contained in the project set.
 - b. Contractor shall thoroughly review **ALL** Drawings and Specifications for Work specifically noted to be provided by their contract which shall be included as part of the base bid.
2. Furnish and install all labor, material, supervision, equipment, scaffolding, layout, engineering, deliveries, trucking, hoisting, rigging, shop drawings, submittals, and all other items related and required to complete all Work in accordance with the Contract Documents and all applicable codes having jurisdiction.

The Contractor submitting a proposal represents they have expertise in the performance of Work for his trade and assures all items to be complete, functional and installed in accordance with the best practices consistent with premium quality material and workmanship.

3. Contractor shall have a decision-making representative with knowledge of the Project at the Bi-weekly Project Coordination Meetings. On occasion the owner may request the presence of a subcontractor at these meetings for coordination purposes. There will be two (2) excused absences allowed. **Failure to attend after two excused absences will result in a two hundred-dollar (\$200) back charge per meeting.**
4. Cleaning operations are required daily for each contractor.

1.21 WORK SCHEDULE

- | | |
|------------------------|-----------------|
| A. Award of Contracts: | April 2024 |
| B. Construction Start: | July 1, 2024 |
| C. Canopy work Start: | July 1, 2024 |
| D. Tank work Start: | July 1, 2024 |
| E. All work Complete: | October 1, 2025 |

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

NOT USED

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

A. Commissioner's Regulations Part 155 Section 155.5 - Uniform Safety Standards For School Construction and Maintenance Projects.

1. The occupied portion of any school building shall always comply with the minimum requirements necessary to maintain a certificate of occupancy.
2. "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."
3. "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."
4. "Maintaining exiting and ventilation during school construction projects.
 - a. 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." All doors scheduled to be replaced shall have work completed when there is no student occupancy of the buildings. All temporary barriers and exits proposed by the Contractor shall be approved by the Architect.
 - b. 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

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PAGE 2

to occupied spaces affected by construction will be maintained during the project.”

All temporary ventilation methods proposed by the Contractor shall be approved by the Architect’s engineering consultant.

5. “Fire and hazard prevention. Areas of buildings under construction that are to remain occupied shall maintain a certificate of occupancy. In addition, the following shall be strictly enforced:
 - a. No smoking is allowed on public school property, including construction areas.
 - b. 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.
 - c. Proper operation of fire extinguishers, fire alarm, and smoke/fire detection shall be maintained throughout the project.”
6. “Noise abatement during construction and maintenance activities. 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.”
7. “Control of chemical fumes, gases, and other contaminants during construction and maintenance projects.”
 - a. The Contractor shall be responsible for the control of chemical fume, gases, and other contaminants produced by welding, gasoline or diesel engines, roofing, paving, painting, etc. to ensure they do not enter occupied portions of the building or air intakes.
 - b. The Contractor shall 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.
 - c. The Contractor shall maintain Manufacturer’s material safety data sheets (MSDS) on the job 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.
8. “Asbestos abatement protocols. All asbestos abatement projects shall comply with all applicable Federal and State laws including but not limited to the New York State Department of Labor industrial code rule 56 (12 NYCRR 56), and the Federal Asbestos Hazard Emergency Response Act (AHERA), 40 CFR part 763 (Code of Federal Regulations, 1998 Edition, Superintendent of Public Documents, U.S. Government Printing Office, Washington, DC 20402; 1998; available at the Office of Facilities Planning, Education Building Annex, Room 1060, State Education Department, Albany, NY 12234).
 - a. Large and small asbestos abatement projects as defined by 12NYCRR56 shall not be performed while the building is occupied.” Note, it is NYSED’s 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.
 - b. If suspect asbestos containing material is found anywhere within any buildings of this project, stop work and bring to Architect’s attention immediately for testing.
9. It is anticipated lead containing materials will be disturbed by other work of the project. The following requirements will apply: Surfaces that will be disturbed by reconstruction must have a determination made as to the presence of lead. Projects which disturb surfaces that contain lead shall have in the specifications a plan prepared by a certified Lead Risk Assessor or Supervisor which details provisions for occupant protection, worksite

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PAGE 3

preparation, work methods, cleaning and clearance testing which are in general accordance with the HUD Guidelines.

10. 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.
11. Areas of the building under construction that are to remain occupied shall maintain a certificate of occupancy.
12. No smoking is allowed on public school property, including construction areas.
13. Proper operation of fire extinguishers, fire alarm, and smoke/fire detection shall be maintained throughout the project.

**** END OF SECTION ****

SECTION 01 1300 – CONSTRUCTION PROGRESS SCHEDULE
PAGE 1

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 schedules and reports required for proper performance of the Work, including:
 - 1. Guideline Schedule
 - 2. Construction schedule.
 - 3. Recovery Schedules
 - 4. Schedule Compilation Meetings
 - 5. Submittal schedule.
 - 6. Reports.
 - 7. Schedule Maintenance and Distribution.
- B. Related Sections include the following:
 - 1. Division 1 Section "Submittals" for submitting schedules and reports.
 - 2. Section 1 Section "Special Inspections" for submitting a schedule of tests and inspections.
 - 3. Division 1 Section "Project Closeout" for submitting Project Record Documents at project closeout.
 - 4. Division 1 Section "Summary" for Milestone Completion Dates, Substantial Completion and Final Completion.
- C. Prime Contractors shall provide a CPM Construction Schedule that assists managing the timely completion of work.
- D. Prime Contractors' schedule shall be generated and maintained in Critical Path format utilizing the newest version of Microsoft Project or a scheduling program that is compatible with Microsoft Project.
- E. Prime Contractors shall prepare a Construction Schedule to:
 - 1. Assure adequate Contractor planning, procurement, and execution of the Work of all trades so that the Work will be completed within the time allotted by the Contract.
 - 2. Anticipate adequate time for all construction and construction related activities. These activities include but are not limited to the following permit approvals, shop drawing submittals, coordination drawing preparation, weather, shipping times, code inspections, utility work, utility connections, punch listing and correction of the Work; Architect, Mechanical, Electrical and Code Official review of the Work, and an expeditious closeout. Work

SECTION 01 1300 – CONSTRUCTION PROGRESS SCHEDULE
PAGE 2

activities of General Contractor and all subcontractors by trade shall be represented on the schedule. All Contractors shall insure staffing, hours worked and materials are furnished in adequate quantities and at appropriate intervals to insure timely completion of the Work.

3. Obtain input from all subcontractors regarding their portion of the Work; obtain manning requirements, work durations, materials and equipment delivery lead times, delivery time and installation times.

F. Intent: The intent of the Construction Schedule requirement for this Work is:

1. The Contractor to provide the Master Schedule in accordance with the following guidelines.
2. To provide for a logical sequencing of the Work with adequate time allotted for all trades to complete their portion of the Work, so that the entire Project is completed within the time allotted by the Contract.
3. To provide a logical sequence for ordering and procuring materials for incorporation into the Work, so that the entire Project is completed within the time allotted by the Contract. To prevent interruptions in the flow of the Work.

G. Schedule Format:

1. Tabular Activity Listing: Listing shall be in chronological order according to the early start date for each activity.
2. CPM Bar Chart Sheet Size: 36" x 48". Tabular Activity Listing format is 8-1/2" x 11" sheets bound in three-ring loose-leaf binders. Scale and Spacing: To allow for notations and revisions. The activities shown on schedule are to include:
 - a. Activity identification number.
 - b. Site and Building Area
 - c. Description of the Work.
 - d. Duration in workdays.
3. Tasks: Included with activity tasks defined above include tasks for mobilizing, de-mobilization, monitoring and testing, equipment turnover, punch list deficiency lists, substantial completion, final completion and contract closeout.

1.3 CONSTRUCTION SCHEDULES

- A. Within twenty (20) days after receipt of a Contract Award, each Contractor is to assemble all necessary information and dates concerning his activities and those of his Subcontractors and Suppliers and submit such information in the format required.
- B. A list of all activities contained in the Contractor's Scope of Work. This list shall include activity descriptions and durations for all activities in work days (as opposed to calendar day) for shop drawings, fabrication, delivery and installation of products, materials, and equipment.

SECTION 01 1300 – CONSTRUCTION PROGRESS SCHEDULE
PAGE 3

- C. In collaboration with the various Contractors associated with the Work, the General Contractor, under direction of the Architect, will compile all Contractor information and develop a Project Master Construction Schedule, which integrates activities of Owner, Architect, Contractors, Subcontractors, and Suppliers and meets the time requirements. This schedule will become the project plan for construction.
- D. Contractors' schedule activities may be re-sequenced, and the schedule adjusted provided all Work is completed within the stated milestone dates and if the Architect and affected Contractors are notified of the change within 5 calendar days of receipt of the schedule; otherwise, the Project Master Construction Schedule shall be deemed accepted by all parties and becomes a contractual requirement for each Contractor.
- E. The Master Baseline Construction Schedule developed will be consistent with the guide- line schedule and utilize the Contractors' input as much as possible.
 - 1. Contractors shall provide the Architect with information and data to prepare a working day construction schedule and sequence of events for each work activity included in his bid category within seven days after the Preconstruction Meeting. The Contractor shall cooperate with the Architect in establishing a final overall project schedule, which meets the specified completion date.
 - 2. After the Project Schedule has been established, the Contractors shall work overtime, nights and weekends, if necessary, to maintain their portions of the schedule. Time is of the essence. Overtime, night and weekend work will be at no additional cost to the Owner.
Failure of any Contractor to maintain his portion of the schedule will be grounds for the Owner to withhold all or part of any payments, which may become due the Contractor.
 - 3. The Contractor is responsible to expedite all approvals and deliveries of material so as not to delay job progress. The Contractor shall coordinate the release and shipping of materials and equipment with suppliers in conjunction with the guideline/milestone schedule. Costs associated with partial shipments and expeditious deliveries shall be anticipated and included as part of the base bid.
- F. Contractor's work shall be executed at such a rate as to ensure meeting the specified milestone and dates for Substantial Completion. By execution of the Contract, a Contractor represents he has analyzed the Work, the materials and methods involved, the systems of the building, availability of qualified mechanics and skilled labor, restrictions of the site, constraints imposed, his own work load and capacity to perform the Work and agrees that the specified dates are reasonable considering the existing conditions prevailing in the locality of the Work, including weather conditions, and other factors with reasonable allowance for variations from average or ideal conditions.
- G. There will be periodic progress meetings at the job site. Field supervisors from each Contractor working on the site are to attend all such meetings. Each Contractor is to provide services of responsible personnel to provide necessary scheduling and manpower information. Each Contractor shall be responsible to be familiar with the schedule, how it will affect or modify his operations including his coordination with the activities of other Contractors. Contractors shall prepare a short interval schedule generally covering a 2-week period to coordinate the detailed activities of subcontractors and suppliers.

SECTION 01 1300 – CONSTRUCTION PROGRESS SCHEDULE
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- H. Whenever it becomes apparent that any activity completion date may not be met, the responsible Contractor(s) are to take some or all the following actions at no additional cost to the Owner: Increase construction workforce to put the project back on schedule. Increase the number of working hours per shift, shifts per working day, working days per week, amount of construction equipment, or any combination, which will place the project back on schedule.

1.4 RECOVERY SCHEDULES

- A. Recovery Schedule: A recovery schedule shall be prepared by the Contractor with input from all trades to accelerate progress, if a milestone is missed, a single duration work activity is incomplete for ten (10) work days, or overall work progress is deemed insufficient by the Architect.
Upon notification a recovery schedule shall be initiated by the Prime Contractor at fault, revisions shall be received in three working days from the Prime Contractors / subcontractors and a new recovery schedule submitted ten (10) working days after one of the above conditions occur.
- B. Recovery Schedule: Submit revised diagram and Tabular Activity Listing approved by all Prime Contractors / subcontractors (submitting same number of copies as original schedule). Each Prime Contractor is to provide a two (2) week look ahead schedule every Monday morning. Including work performed during the previous week. Contractor at fault shall add staff and/or work overtime as necessary to bring the Project back on schedule using the recovery schedule. Accelerated Work and additional overhead necessary to keep the Project on schedule is included in the Contract. Prime Contractor at fault will be responsible for all costs from other Prime Contractors to maintain the recovery schedule.

1.5 SUBMITTAL SCHEDULE

- A. ALL submittals are to be received and approved within two (2) months of the contract award in accordance with a detailed Schedule of Submittals approved by the Architect.
- B. Contractor shall prepare a complete Schedule of Submittals. Submit the Schedule of Submittals within fifteen (15) days of the Notice of Award.
1. Coordinate Submittal Schedule with the list of subcontracts, Schedule of Values, and the list of products as well as the Construction Schedule.
 2. Prepare the schedule in chronological order. Provide the following information:
 - a. Scheduled date for the first submittal.
 - b. Related Section number.
 - c. Submittal category (Shop Drawings, Product Data, or Samples).
 - d. Name of the Subcontractor.
 - e. Description of the part of the Work covered.
 - f. Scheduled date for re-submittal.
 - g. Scheduled date for the Architect's final release or approval.
- C. Distribution: Following response to the initial submittal schedule, print and distribute

SECTION 01 1300 – CONSTRUCTION PROGRESS SCHEDULE
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copies to the Architect, Owner, subcontractors, and other parties required to comply with submittal dates indicated. Any revisions to the Submittal Schedule must be approved by the Architect. In no case will the submittal period be extended past the four (4) month limit unless an approved supplier ceases business.

- D. It shall be the responsibility of the Contractor to submit to the Architect: "Equipment/Long Lead Item Procurement Report" two (2) weeks after receipt of Notice of Award. The Contractor shall list all equipment and other long lead items that are being purchased, drawing submittals, samples, etc., for a complete composite report.

PART 2 - PRODUCTS

2.1 CONSTRUCTION SCHEDULE

- A. The Contractor shall convert the Master Base Line Schedule to PDF format for distribution.

PART 3 - EXECUTION

3.1 CONSTRUCTION SCHEDULE PREPARATION

- A. Graphically show all activities necessary to complete the Work, and the sequence in which each such activity is planned to be accomplished, as planned by the General Contractor and the project field superintendent. This shall be done coordinating data with all the Contractors and is necessary to complete the Project, which shall be shown on the diagram.
- B. Preliminary schedule shall be a Preliminary Bar Chart Diagram.
- C. Content: Include, but do not necessarily limit indicated activities as follows:
1. Project mobilization.
 2. Identify work of separate stages, separate floors, and other logically grouped activities. Submittal and review of Shop Drawings. (Prime Contractor shall include adequate basic time for the review and approval of all submittals and additional time in schedule for their review). Indicate dates reviewed submittals are needed back from the A/E.
 3. Procurement of equipment and material.
 4. Site work, site utilities, footings, structural steel, decking, utilities, finishes, systems and equipment installation.
 5. Fabrication of special equipment and material, its installation and testing.
 6. Partial occupancy of site areas and building spaces by Owner during construction.
 7. Final cleanup.
 8. Building System Equipment commissioning (start-up) and testing.
 9. Punch list and corrective activities.

SECTION 01 1300 – CONSTRUCTION PROGRESS SCHEDULE
PAGE 6

- 10. Substantial Completion with specification requirements.
- 11. Project Completion with specification requirements.
- D. Show information in such detail that duration times of activities (only one trade per activity) will range normally from one (1) to fifteen (15) calendar days, maximum. The selection and number of activities shall be adjusted as necessary.
- E. Show on the chart, as a minimum for each activity, preceding and following event numbers, and description of each activity, and activity duration in calendar days.
- F. Legend shall identify all graphics on diagrams.

3.2 UPDATING SCHEDULE

- A. The General Contractor maintains schedules to record actual start and finish dates of completed activities monthly.
- B. Each schedule update shall indicate the construction progress of each activity up to the date of the schedule revision and include the projected completion date of each activity.
- C. Update bar charts to graphically depict current status of Work.
- D. The Contractor shall identify activities modified since previous submittal, major changes in Work, and other identifiable changes.
- E. Indicate changes required to maintain date of Substantial Completion.

3.3 DISTRIBUTION OF SCHEDULE

- A. The Project Architect shall distribute copies of (updated) schedule to Owner and General Contractors who shall be responsible for distributing copies to subcontractors and suppliers with a “need to know”,

**** END OF SECTION ****

PART 1 - GENERAL

1.01 SUMMARY

A. Section Includes

1. This section is subject to applicable requirements of the contract documents.
2. Funds will be drawn from the Allowance only by letter issued by Architect with Owner's approval.
3. All contractors shall include in their base bid and contract the allowances as listed below.
4. The work to be included in the allowances will be additional work to the project above and beyond the scope of work shown and specified.

1.02 ALLOWANCES FOR PRODUCTS

A. The amount of each allowance includes:

1. The cost of the Product to the Contractor or Subcontractor
2. Delivery to the site
3. Applicable taxes
4. Handling at the site; including unloading, uncrating and storage
5. Protection from the elements and from damage
6. Labor for installation and finishing
7. Other expenses required to complete the installation
8. Contractor's overhead and profit

B. Contractor's and Subcontractor's overhead and profit is included in the allowance which is part of the base bid. **No additional overhead and profit will be included in the amounts approved for each item charged against the allowance.** Allowance credits will have O & P for contractor and subcontractor added to them.

B. Allowances for individual contracts:

1. Allowance for General Construction Contract: Twenty-Five Thousand dollars (\$25,000) to be used for contaminated soil removal and a contingency allowance of Ten Thousand (\$10,000) to be used as directed by the Architect with approval from the Owner.
2. Allowance for Heating and Ventilation Construction Contract: Eighty-Five Hundred dollar (\$8,500) contingency allowance to be used as directed by Architect with approval from the Owner.

1.03 SELECTION OF PRODUCTS UNDER ALLOWANCE

A. Architect's Duties:

1. Consult with the Contractor in consideration of Products, work necessary and suppliers or installation details.
2. Make determination in consultation with the Owner's representative. Obtain Owner's written decision, designating:
 - a. All additional work
 - b. Product, model and finish.
 - c. Accessories and attachments.
 - d. Installation details.
 - e. Cost to Contractor, delivered to the site or installed, as applicable.

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f. Manufacturer's Warranties.

B. Contractor's Duties:

1. Assist Architect and Owner in determining qualified suppliers or installers.
2. Obtain proposals from suppliers and installers when requested by Architect.
3. Make appropriate recommendations for consideration of the Architect.
4. Notify Architect promptly of:
 - a. Any reasonable objections Contractor may have against any supplier, or party under consideration for installation.
 - b. Any effect on the Construction Schedule anticipated by selections under consideration of the Architect.
5. The Contractor shall not order products, purchase products, install products or otherwise proceed with any portion of Work under this Section until authorized in writing by Owner.

1.04 CONTRACTOR RESPONSIBILITY FOR PURCHASE, DELIVERY AND INSTALLATION

- A. On notification of selection, execute purchase agreement with designated supplier.
- B. Arrange for and process Shop Drawings, Product Data and Samples, as required.
- C. Make all arrangements for delivery.
- D. Upon delivery, promptly inspect products for damage or defects.
- E. Submit claims for transportation damage.
- F. Install and finish product.

1.05 ADJUSTMENT OF CONTRACT

- A. Work provided under allowances will be acknowledged in the Architect's letter to the Contractor and will be based on the Owner's approval of the scope and cost of the additional work.
- B. At closeout of Contract, funds remaining in the Allowance will be credited to Owner by AIA G701 Change Order.

PART 2 - PRODUCTS **NOT USED**

PART 3 - EXECUTION **NOT USED**

**** END OF SECTION ****

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Identification of unit price items as set forth in the Bid Forms.
- B. Brief outline of work involved in each item, and listing of work components in the item.
- C. Criteria to be applied for measurement of number of completed units, for payment purposes.

1.02 RELATED REQUIREMENTS

- A. General Conditions and Supplementary Conditions: Unit Price Work
- B. Bid Form and Owner-Contractor Agreement: Schedule of Unit Prices

1.03 UNIT PRICES

- A. A unit price is an amount proposed by Bidders and stated on the Bid Form as a price per unit of measurement for installed materials or services performed that will be added to or deducted from the Contract Sum by Change Order in the event the estimated quantities of Work required by the Contract Documents are increased or decreased.
- B. Unit prices shall include all overhead and profit, delivery, handling costs, installation and applicable taxes and start up costs for the item supplied.
- C. The Owner reserves the right to reject the Contractor's measurement of work-in-place that involves use of established unit prices, and to have this Work measured by an independent surveyor acceptable to the Contractor at the Owner's expense.

1.04 UNIT PRICE ITEM DESCRIPTIONS

- A. General Construction Contract Items:
 - 1. Unit Price GC-1: Additional paving replacement:
 - a. Description: Removal and replacement of existing heavy duty asphalt paving.
 - b. Per specification Section 32 1216
 - c. Unit of Measurement: Per sq. yard \$_____ / SY
 - 2. Unit Price GC-2: Additional contaminated soil removal and disposal:
 - a. Description: Removal and disposal of contaminated soil.
 - b. Per all codes and NYS DEC requirements.
 - c. Unit of Measurement: Per cubic yard. \$_____ / CY

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

NOT USED

**** END OF SECTION ****

**01 2300 – ALTERNATES
PAGE 1**

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Submission procedures
- B. Documentation of changes to Contract Sum and Contract Time.

1.02 RELATED SECTIONS

- A. Document 00501 – Agreement Form: Incorporating monetary values of accepted Alternates.
- B. Document 00201 – Instructions to Bidders and 00400 – Forms of Proposal: Requirements for Alternates
- C. Section 01 3300 – Submittals and Progress Schedules: Work schedule affected by Alternates.
- D. Technical Sections as listed under the respective alternates.

1.03 REQUIREMENTS

- A. Submit Alternates following the description of the proposed Alternate including any effects the work may have on adjacent or related components.
- B. Alternates quoted on Bid Forms will be reviewed and accepted or rejected at Owner's option. Accepted Alternates will be identified in the Owner-Contractor Agreement.
- C. Coordinate related work and modify surrounding work to integrate the work of each Alternate.
- D. Alternate prices shall include all labor, materials, equipment, overhead, insurance, applicable taxes, profit and delivery costs.

1.04 SELECTION AND AWARD OF ALTERNATIVES

- A. Indicate variation of Bid Price for Alternates described below and list in Bid Form Document or any supplement to it, which requests a "difference" in Bid Price by adding to or deducting from the base bid price.
- B. Award of Contract shall be based upon a combination of the lowest responsible Base Bid and a chosen mix of Alternates accepted by the Owner. Alternates are not listed in priority order.

1.05 ALTERNATES

- A. General Construction contract alternates:

ALTERNATE GC-01: (Canopy - replace concrete foundation) The Bidder shall state the amount to be **added** to the base bid to add the replacement of the concrete foundation for the canopy and associated site work including: concrete slab replacement, removal of slabs and existing concrete foundation, bollard removal and replacement, dispensing equipment removal and reinstalling, island removal and replacement with curbs as indicated on drawings and in the

01 2300 – ALTERNATES
PAGE 2

specifications or as required to complete the work. All excavation and backfill, also paving repair as necessary. Removing the dispensers, fuel master and reinstalling them is to be included. New stainless-steel curbs and new concrete islands is to be included. A NY state lic. Engineer is to design the foundations and provide stamped drawings.

ALTERNATE GC-02: (Steel column repair) The Bidder shall state the amount to be **added** to the base bid to add steel column repair, as indicated on drawings and in the specifications. All work to meet standards of AISC and NYS Building Codes.

ALTERNATE GC-03: (Replace man door and frame) The Bidder shall state the amount to be **added** to the base bid to add replacing two (2) man doors at the bus garage with FRP doors and frames, as indicated or necessary work for complete installation. Doors and frames to be mfg. SpecialLite or equal of heavy grade fiberglass reinforced polymer materials

ALTERNATE GC-04: (Provide Urethane Resin Coated Steel in lieu of Fiberglass tank) The Bidder shall state the amount to be **deducted** from the base bid for not installing a split, dual walled fiberglass tank, but instead install a urethane resin coated tank in kind.

B. Heating and Ventilating construction contract alternates:

ALTERNATE HV-01: (Move gas meter to exterior) The Bidder shall state the amount to be **added** to the base bid to move the gas meter to the exterior of the Bus Garage as indicated on drawings and in the specifications or as required to complete this work. All associated patching of surfaces and finishes is to be included. All work to be coordinated with and per requirements of National Grid.

ALTERNATE HV-02: [Replace existing furnace in Bus Garage bay area.] The Bidder shall state the amount to be **added** to the base bid to replace the pier footings for the canopy columns if required as indicated in the contract documents.

Add _____ Dollars (\$_____)

ALTERNATE HV-03: [Replace existing furnace in Bus Garage office/service area.] The Bidder shall state the amount to be **added** to the base bid to replace the pier footings for the canopy columns if required as indicated in the contract documents.

Add _____ Dollars (\$_____)

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

NOT USED

**** END OF SECTION ****

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Submittals.
- B. Documentation of change in Contract Sum and Contract Time.
- C. Change procedures.
- D. Construction Change Authorization.
- E. Stipulated Sum change order.
- F. Unit price change order.
- G. Time and material change order.
- H. Execution of change orders.
- I. Correlation of Contractor submittals.

1.02 RELATED SECTIONS

- A. Section 00501 – AIA Document A101 - Agreement Forms: Monetary values of established Unit Prices.
- B. Section 00701 – AIA Document A201 - General Conditions: Governing requirements for changes in the Work, in Contract Sum, and Contract Time.
- C. Section 00801 - Supplementary Conditions: Percentage allowances for Contractor's overhead and profit.
- D. Section 01 2200 - Unit Prices: Scope of Unit Prices.
- E. Section 01 2900 - Applications for Payment.
- F. Section 01 3300 - Submittals - Progress Schedules.
- G. Section 01 3300 - Submittals - Schedule of Values.
- H. Section 01 6000 - Material and Equipment: Product options and substitutions.
- I. Section 01 7700 - Contract Closeout: Project Record Documents.

1.03 SUBMITTALS

- A. Submit name of the individual authorized to accept changes, and to be responsible for informing others in Contractor's employ of changes in the Work.
- B. Change Order Procedure Forms
 - 1. Change Order Form - AIA Document G701.

1.04 DOCUMENTATION OF CHANGE IN CONTRACT SUM AND CONTRACT TIME

- A. Maintain detailed records of work done on a time and material basis. Provide full information required for evaluation of proposed changes, and to substantiate costs of changes in the Work.
- B. Document each quotation for a change in cost or time with sufficient data to allow evaluation of the quotation.
- C. On request, provide additional data to support computations:
 - 1. Quantities of products, labor, and equipment.
 - 2. Taxes, insurance and bonds.
 - 3. Overhead and profit.
 - 4. Justification for any change in Contract Time.
 - 5. Credit for deletions from Contract, similarly documented.
- D. Support each claim for additional costs, and for work done on a time and material basis, with additional information:
 - 1. Origin and date of claim.
 - 2. Dates and times work was performed, and by whom reviewed and approved by Project Representative.
 - 3. Time records and wage rates paid.
 - 4. Invoices and receipts for products, equipment, and subcontracts, similarly documented.

1.05 CHANGE PROCEDURES

- A. The Architect will advise of minor changes in the Work not involving an adjustment to Contract Sum or Contract Time by issuing supplemental instructions on AIA Form G710.
- B. The Architect may issue a Proposal Request which includes a detailed description of a proposed change with supplementary or revised Drawings and specifications, a change in Contract Time for executing the change work required and the period of time during which the requested price will be considered valid. Contractor will prepare and submit an estimate within ten days.
- C. The Contractor may propose a change by submitting a request for change to the Architect, describing the proposed change and its full effect on the Work, with a statement describing the reason for the change, and the effect on the Contract Sum and Contract Time with full documentation and a statement describing the effect on Work by separate or other contractors. Document any requested substitutions in accordance with Section 01 6000.

1.06 CONSTRUCTION CHANGE AUTHORIZATION

- A. Architect may issue a document, signed by the Owner, instructing the Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order.
- B. The document will describe changes in the Work, and will designate method of determining any change in Contract Sum or Contract Time.
- C. Promptly execute the change in Work.

1.07 STIPULATED SUM CHANGE ORDER

01 2600 – CHANGE ORDER PROCEDURES
PAGE 3

- A. Based on Proposal Request and Contractor's fixed price quotation or Contractor's request for a Change Order as approved by Architect.

1.08 UNIT PRICE CHANGE ORDER

- A. For pre-determined unit prices and quantities, the Change Order will be executed on a fixed unit price basis.
- B. For unit costs or quantities of units of work which are not pre-determined, execute Work under a Construction Change Authorization.
- C. Changes in Contract Sum or Contract Time will be computed as specified for Time and Material Change Order.

1.09 TIME AND MATERIAL CHANGE ORDER

- A. Submit itemized account and supporting data after completion of change, within time limits in Conditions of the Contract.
- B. Architect will determine the change allowable in Contract Sum and Contract Time as provided in Conditions of the Contract.
- C. Maintain detailed records of work done on Time and Material basis.
- D. Submit records with Project Representatives confirmation written on submittal form.

1.10 EXECUTION OF CHANGE ORDERS

- A. Architect will issue Change Orders for signatures of parties as provided in the Conditions of the Contract.

1.11 CORRELATION OF CONTRACTOR SUBMITTALS

- A. Promptly revise Schedule of Values and Application for Payment forms to record each authorized Change Order as a separate line item and adjust the Contract Sum as shown on Change Order.
- B. Promptly revise progress schedules to reflect any change in Contract Time, revise sub-schedules to adjust time for other items of work affected by the change, and resubmit.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

NOT USED

**** END OF SECTION ****

**01 2900 – APPLICATION FOR PAYMENT
PAGE 1**

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Procedures for preparation and submittal of Applications for Payment.

1.02 RELATED SECTIONS

- A. Section 00501 – AIA Document A101 - Agreement: Contract Sum and unit prices amounts of Progress Payments and Retainages.
- B. Section 00701 – AIA Document A201 - General Conditions: Progress Payments and Final Payment.
- C. Section 01 2600 - Change Order Procedures: Procedures for changes to the Work.
- D. Section 01 3300 - Submittals: Submittal procedures.
- E. Section 01 7700 - Contract Closeout: Final Payment.

1.03 FORMAT

- A. AIA G702 and G703 - Application and Certificate for Payment including continuation sheets following format of G702 - 1992 edition.

1.04 SCHEDULE OF VALUES (SOV)

- A. Coordination: The 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 forms and schedules, including the following:
 - a. Application for Payment forms with Continuation Sheets.
 - b. Submittals Schedule
 - c. List of Subcontractors
 - 2. Submit the Schedule of Values to Architect at earliest possible date but no later than seven days before the date scheduled for submittal of initial Applications for Payment.
 - 3. Sub schedules: Where the Work is separated into phases requiring separately phased payments, provide sub schedules showing values correlated with each phase of payment.
 - 4. The schedule of values will be separated by school / building (SED#) and include an overall summary page.
- B. Format and Content: Use the Project Manual table of contents as a guide to establish line items for the Schedule of Values. Provide at least one 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 Architect
 - c. Contractor's name and address
 - d. Date of submittal
 - e. SED project number

**01 2900 – APPLICATION FOR PAYMENT
PAGE 2**

2. Arrange the Schedule of Values in tabular form with separate columns to indicate the following for each item listed:
 - a. Description of the Work.
 - b. Name of subcontractor
 - c. Name of manufacturer or fabricator
 - d. Name of supplier
 - e. Change Orders (numbers) that affect value
 - f. Dollar Value
3. Provide a breakdown of the Contract Sum in enough detail to facilitate continued evaluation of Applications for Payment and progress reports. Coordinate with the Project Manual table of contents. Provide several line items for principal subcontract amounts, where appropriate.
4. Round amounts to nearest whole dollar; total shall equal the Contract Sum.
5. The building will have its own SED identification number.
6. 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. The Architect will work with the Contractor to assist in setting up the Schedule of Values/Application for Payment form.
 - b. Differentiate between items stored on-site and items stored off-site. Include evidence of insurance or bonded warehousing if required.
7. Provide separate line items in the Schedule of Values for initial cost of materials, for each subsequent stage of completion, and for total installed value of that part of the Work.
8. Each item in the Schedule of Values and Applications for Payment shall be complete. Include total cost and proportionate share of general overhead and profit 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 Contractor's option.
9. Schedule Updating: Update and resubmit the Schedule of Values before the next Applications for Payment when Change Orders or Construction Change Directives result in a change in the Contract Sum.

1.05 PREPARATION OF APPLICATIONS

- A. Present required information in typewritten form or on electronic media printout.
- B. Execute certification by signature of authorized officer.
- C. Use data from approved Schedule of Values. Provide dollar value in each column for each line item for portion of work performed and for stored products.
- D. List each authorized Change Order as an extension on continuation sheet, listing Change Order number and dollar amount as for an original item of Work.
- E. Prepare Application for Final Payment as specified in Section 01 7700.

1.06 SUBMITTAL PROCEDURES

**01 2900 – APPLICATION FOR PAYMENT
PAGE 3**

- A. Submit schedule of dates and anticipated amounts of requisitions after project schedule is established.
- B. Payment Period: Submit monthly, until the 25th day of each month, on schedule developed with Owner.
- C. Submit a pencil copy to the Architect for review and approval.
- D. When approved, submit five copies (one original, four copies) with signatures and notarized of each Application for Payment to the Architect. Schedule for monthly Application will be developed with the Architect.
- E. Waivers of Mechanics Lien: With each Application for Payment after the first, 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. 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.
- F. When Architect finds the Application properly completed and correct, the Contractor will transmit a final certificate for payment to the Architect.

1.07 SUBSTANTIATING DATA

- A. When Architect requires substantiating information, submit data justifying dollar amounts in question.
- B. Provide one copy of data with cover letter for each copy of submittal. Show Application number and date, and line item by number and description.

PART 2 – PRODUCTS

NOT USED

PART 3 – EXECUTION

NOT USED

**** END OF SECTION ****

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Construction Mobilization
- B. Schedules
- C. Submittals to Architect
- D. Coordination Drawings
- E. Coordination and Project Conditions
- F. Coordination Meetings
- G. Closeout Procedures

1.02 RELATED SECTIONS

- A. Section 00701 – AIA Document A201 - General Conditions: Duties of Contractor
- B. Section 01 1100 - Summary of Project
- C. Section 01 3520 - Project Meetings
- D. Section 01 7700 - Contract Closeout: Closeout procedures
- E. Section 02 8213 - Asbestos Abatement

1.03 CONSTRUCTION MOBILIZATION

- A. Cooperate with the Owner's Representative in allocation of mobilization areas of site; for field offices and sheds, for material storage, access, traffic, and parking facilities.
- B. During construction, coordinate use of site and facilities through the Owner's Representative.
- C. Comply with procedures for intra-project communications; submittals, reports and records, schedules, coordination drawings, and recommendations; and resolution of ambiguities and conflicts. Each contractor shall coordinate their work with the other contractors. Work shall progress in an orderly manner with each Contractor supplementing the others.
- D. Coordinate field engineering and layout.
- E. Workers of all trades shall be required to wear photo identification badges at all times for security purposes.
- F. Staff Names: Within Ten (10) days of starting construction operations, submit a list of principal staff assignments, including Project Manager and Superintendent. Identify individuals and their duties and responsibilities; list telephone numbers, including home and site telephone numbers. Provide names and telephone numbers of individuals

01 3100 – PROJECT COORDINATION
PAGE 2

assigned as standbys in the absence of individuals assigned to Project. Post copies of list in Project meeting room, in temporary field office, and by each temporary telephone.

- G. In addition to Project superintendent, provide other administrative and supervisory personnel as required for proper performance of the Work.
 - 1. Include special personnel required for coordination of operations with other contractors.
 - 2. Contractor shall provide a project superintendent in an administrative role to coordinate daily activities, procure materials, coordinate the work of various subcontractors, coordinate his forces with the other prime contractors, and the Owner's program.

1.06 COORDINATION DRAWINGS

- A. Provide information required for preparation of coordination drawings.
- B. Review drawings with Owner's Representative to ensure proper coordination with the Work of other Contracts after preparation and prior to initiation of the work involved.

1.07 COORDINATION AND PROJECT CONDITIONS

- A. Coordinate scheduling, submittals, and Work of the various sections of the Project manual to ensure efficient and orderly sequence of installation of interdependent construction elements, with provisions for accommodating items installed later.
- B. Verify utility requirements and characteristics of operating equipment are compatible with building utilities. Coordinate work of various sections having interdependent responsibilities for installing, connecting to, and placing in service, such equipment.
- C. Coordinate space requirements, supports, and installation of mechanical and electrical work which are indicated diagrammatically on Drawings. Follow routing shown for pipes, ducts, and conduit, as closely as practicable; place runs parallel with lines of building. Utilize spaces efficiently to maximize accessibility for other installations, for maintenance, and for repairs.
- D. In finished areas, except as otherwise indicated, conceal pipes, ducts, and wiring within the construction. Coordinate locations of fixtures and outlets with finish elements.
- E. Coordinate completion and clean-up of Work of separate sections in preparation for phased Substantial Completion, and for portions of work designated for owner's occupancy.
- F. After Owner occupancy of a portion of the premises, coordinate access to site for correction of defective work and work not in accordance with Contract Documents, to minimize disruption of owner's activities.

1.08 COORDINATION MEETINGS

- A. Coordination Meetings: The Owner's Representative will conduct coordination meetings bi-weekly. Project coordination meetings are in addition to specific meetings held for other purposes, such as progress meetings and pre-installation conferences.
- B. Attendees: In addition to representatives of Owner, each contractor, subcontractor, supplier, and other entity concerned with current progress or involved in planning, coordination, or performance of future activities shall be represented at these meetings.

01 3100 – PROJECT COORDINATION
PAGE 3

All participants at the conference shall be familiar with Project and authorized to conclude matters relating to the Work.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

NOT USED

**** END OF SECTION ****

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Electronic submittal procedures.
- B. Construction progress schedules.
- C. Weekly construction reports.
- D. Proposed products list.
- E. Shop drawings.
- F. Product data.
- G. Physical Samples.
- H. Manufacturers' instructions.
- I. Manufacturers' certificates.
- J. Field samples and Mock-ups.

1.02 RELATED SECTIONS

- A. Document 00701 - General Conditions: Construction Schedule, Schedule of Values, Shop Drawings, Product Data, and Samples.
- B. Document 00801 – Supplementary Conditions: Construction Schedule, Schedule of Values, Shop Drawings, Product Data, Samples.
- C. Section 01 4500 - Quality Control: Manufacturers' field services and reports.
- D. Section 01 7700 - Contract Closeout: Contract warranty and manufacturer's certificates closeout submittals.

1.03 ELECTRONIC SUBMITTAL PROCEDURES

- A. Transmit each submittal to the Architect. Take into account standard reasonable review time of approximately **14 working days** from receipt of submittal.
- B. Sequentially number (1,2,3,4...) the transmittal forms. Re-submittals to have original number with an alphabetic suffix (1A 1B, 1C...).
- C. Identify Project, Contractor, Subcontractor or supplier; pertinent Drawing sheet and detail number(s), and specification Section number, as appropriate.
- D. Apply Contractor's stamp, signed or initialed certifying that review, verification of products required, field dimensions, adjacent construction Work, and coordination of information, is in accordance with the requirements of the Work and Contract Documents.
- E. Schedule submittals to expedite the Project and coordinate submission of related items.

01 3300 – SUBMITTALS
PAGE 2

- F. Identify variations from Contract Documents and Product or system limitations which may be detrimental to successful performance of the completed Work.
- G. Provide space for Contractor and Architect review stamps.
- H. Revise and resubmit submittals as required, identify all changes made since previous submittal.
- I. Distribute copies of reviewed submittals to concerned parties. Instruct parties to promptly report any inability to comply with provisions.
- J. Submittals will be rejected without review, and returned to the Contractor if:
 - 1. **A substitution for a component is shown for the first time on the shop drawing without previously following the approval procedures for substitutions and equivalents.**
 - 2. The Contractor has not stamped and signed the shop drawings certifying his review.
 - 3. The submittal fails to show compliance with specified Standards or Test Methods.
 - 4. The submittals indicate insufficient data or are incomplete.
 - 5. The Architect is required to transfer data to other opaque copies of the submittal.
 - 6. Shop drawings are not drawn to scale. Rough sketches not acceptable.
 - 7. Marketing data and general advertising material is submitted in lieu of technical data required.
- K. Shop Drawings Required: Contractors shall submit only the shop drawings called for in the separate specification sections. Other submittals shall be returned and not reviewed.
- L. Shop Drawing Format: Where possible and practical submit shop drawings on 8-1/2" x 11", 11" x 17" format, or their respective full size digitally.
- M. Transmit submittals to Owner's Architect's office for review by Architect / Engineer.
Send to: lcasamento@rsa-architect.com .
- N. Any section which requires engineered drawings to be provided, must be stamped by a design professional licensed in New York State

1.04 CONSTRUCTION PROGRESS SCHEDULES

- A. Each Prime Contractor to submit an initial progress schedule in duplicate within 10 calendar days after date established in Notice to Proceed for Architect and each other Prime Contractor to review. Provide phasing plan to meet the schedule as noted in Section 01 1100. Within seven (7) working days of this submittal the other Prime Contractors must provide the Architect and each prime a matching schedule coordinating with the General Contractor's schedule. A coordination meeting with the Owner and Architect will be held within five (5) days of receipt to negotiate adjustments acceptable to all Prime Contractors. The General Contractor shall within five (5) days after the coordination meeting, submit the combined approved master schedule.
- B. Submit revised schedules with each Application for Payment, identifying changes since previous version.
- C. Submit a digital spreadsheet or horizontal bar chart with separate line for each section of Work, identifying first work day of each week.
- D. Show complete sequence of construction by activity, identifying Work of separate stages and other logically grouped activities. Indicate the early and late start, early and late finish, float dates, and duration, seasonal variations, limitations due to Owner occupancy, site restrictions. Also factor in "off-gassing" times for spaces and show them in the schedule.

- E. Indicate estimated percentage of completion for each item of Work at each submission.
- F. Show submittal dates required for shop drawings, product data, samples, mockups, testing and product delivery dates and how they affect the schedule, including those furnished by Owner and under Allowances.
- G. Show how each work areas schedule is required.
- I. All Prime Contractors shall continue to coordinate their schedules with the General Construction Contractor's schedule during the life of the project.

1.05 WEEKLY CONSTRUCTION REPORTS

- A. Prepare a weekly construction report recording the following information concerning events at the site. Submit duplicate copies to the Owner's Representative at weekly coordination meetings.
 - 1. List of subcontractors at the site.
 - 2. List of separate contractors at the site.
 - 3. Approximate count of personnel at the site.
 - 4. High and low temperatures, general weather conditions.
 - 5. Accidents.
 - 6. Meetings and significant decisions.
 - 7. Unusual events (refer to special reports).
 - 8. Stoppages, delays, shortages, and losses.
 - 9. Meter readings and similar recordings.
 - 10. Emergency procedures.
 - 11. Orders and request of governing authorities.
 - 12. Change Orders received, implemented.
 - 13. Services connected, disconnected.
 - 14. Equipment or system tests and startups.
 - 15. Partial Completions, occupancies.
 - 16. Substantial Completions authorized.

1.06 PROPOSED PROJECTS LISTS

- A. Within ten (10) days after date proposals are received and prior to contract award, submit complete list of major products proposed for use, with name of manufacturer, trade name, and model number of each product. If equivalent is proposed include required back-up data enumerated in Instructions to Bidders.
- B. For products specified only by reference standards, give manufacturer, trade name, model or catalog designation, and reference standards.
- C. For substitutions requested after award of contract provide all data enumerated in the Supplementary General Conditions.

1.07 SHOP DRAWINGS

- A. Each prime shall submit a schedule of shop drawings and other submittals required for the work of the project with in ten (10) days of a final project schedule.
- B. Submit all shop drawings digitally. If required, Contractor may produce hard copies for the Architect's review and Owner's record.

- C. After review, reproduce and distribute in accordance with Article on Procedures above and for Record Documents described in Section 01 7700 - Contract Closeout.
- D. Keep copies of all shop drawings on site for use by the trades.

1.08 PRODUCT DATA

- A. Submit all 8.5"x11" product data digitally to architect's office; lcasamento@rsa-architect.com.
- B. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information unique to this Project.
- C. After review, distribute in accordance with Article on Procedures above and provide copies for Record Documents described in Section 01 7700 - Contract Closeout.

1.09 PHYSICAL SAMPLES

- A. FedEx to Architect's office physical samples to illustrate functional and aesthetic characteristics of the Product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work.
- B. FedEx to Architect's office physical samples of finishes from the full range of manufacturers' standard colors, textures, and patterns for Architect's selection. Printed color charts will not be accepted.
- C. Include identification on each sample, with full Project information.
- D. Submit the number or samples specified in individual specification Sections; one of which will be retained by Architect.
- E. Reviewed samples which may be used in the Work are indicated in individual specification Sections.

1.10 MANUFACTURER'S INSTRUCTIONS

- A. When specified in individual specification Sections, submit manufacturers' printed instructions for delivery, storage, assembly, installation, start-up, adjusting, and finishing, in quantities specified for Product Data.
- B. Identify conflicts between manufacturers' instructions and Contract Documents.

1.11 MANUFACTURER'S CERTIFICATES

- A. When specified in individual specification Sections, submit manufacturers' certificate to Architect for review, in quantities specified for Product Data.
- B. Indicate material or product conforms to or exceeds specified requirements. Submit supporting reference data, affidavits, and certifications as appropriate.
- C. Certificates may be recent or previous test results on material or Product, but must be acceptable to Architect.
- D. MSDS Information: Contractors shall submit Material Safety Data Sheets (MSDS) for all products or materials to be used in the project that have such documentation. Keep a book of all MSDS sheets at the job site.

1.12 FIELD SAMPLES AND MOCK-UPS

- A. Provide field samples of finishes at Project as required by individual Specifications section. Install sample complete and finished. Acceptable samples in place may be retained in completed Work.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

NOT USED

**** END OF SECTION ****

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Pre-construction conference.
- B. Progress meetings.
- C. Pre-installation conferences.

1.02 RELATED SECTIONS

- A. Section 01 3100 - Project Coordination.
- B. Section 01 5400 - Cutting and Patching.

1.03 PRE-CONSTRUCTION CONFERENCE

- A. Architect will schedule a conference after Notice of Award.
- B. Attendance Required: Owner, Architect, Prime Contractors and Contractor Superintendents, major subcontractors. All participants to be familiar with the project and authorized to act for the various parties.
- C. Agenda:
 - 1. Submission of list of Subcontractors, list of products, Schedule of Values, and progress schedule.
 - 2. Designation of personnel representing the parties in Contract, Project Representative, the Engineers and the Architect.
 - 3. Procedures and processing of field decisions, submittals, substitutions, applications for payments, proposal request, Change Orders and Contract closeout procedures.
 - 4. Discuss General Contractor's proposed schedule: sequencing of work, starting with mobilization, phasing.
 - 5. Use of premises by Owner and Contractor and worker identification badges.
 - 6. Owner's requirements
 - 7. Security and housekeeping procedures: temporary facilities, parking, barriers
 - 8. Contractor's Office, work, and storage areas
 - 9. Equipment deliveries
 - 10. Cleaning
 - 11. Working hours
 - 12. Procedures for testing
 - 13. Procedures for maintaining record documents
 - 14. Requirements for start-up of equipment
 - 15. Inspection and acceptance of equipment put into service during construction period.
- D. Location: Owner to provide location in one of the buildings on site.

1.05 PROGRESS MEETINGS

01 3520 – PROJECT MEETINGS
PAGE 2

- A. Architect shall schedule and administer meetings throughout progress of the Work at maximum every other week intervals.
- B. Architect shall make arrangements for meetings, prepare agenda with copies for participants, preside at meetings, record minutes, and distribute copies within ten (10) days to participants, and those affected by decisions made.
- C. Attendance Required: Contractor's job superintendents, major Subcontractors and suppliers, Architect and Engineer representatives, as appropriate to agenda topics for each meeting. Attendance at these meetings is mandatory for each prime contractor.
- D. Agenda:
 - 1. Review minutes of previous meetings.
 - 2. Review of Work progress and sequencing of operations.
 - 3. Field observations, problems, and decisions.
 - 4. Identification of problems which impede planned progress.
 - 5. Review of submittals schedule and status of submittals.
 - 6. Review of off-site fabrication and delivery schedules.
 - 7. Maintenance of progress schedule.
 - 8. Corrective measures to regain projected schedules. Contractors to revise schedule after each meeting and distribute at next meeting.
 - 9. Planned progress during succeeding work period.
 - 10. Coordination of projected progress.
 - 11. Maintenance of quality and work standards.
 - 12. Temporary facilities
 - 13. Work hours
 - 14. Cleaning
 - 15. Effect of proposed changes and change orders on progress schedule and coordination.
 - 16. Other business relating to Work.
- E. Location: Owner to provide location on construction site.

1.06 COORDINATION MEETINGS

- A. As specified in section 01 3100 Project Coordination.

1.07 PRE-INSTALLATION CONFERENCES

- A. When required by individual specification Section, Architect will convene a pre-installation conference at work site prior to commencing work of the Section.
- B. Require attendance of parties directly affecting, or affected by, work of the specific Section.
- C. Notify parties required to attend seven days in advance of meeting date.
- D. Prepare agenda, preside at conference, record minutes, and distribute copies within seven days after conference to participants.
- E. Review conditions of installation, preparation and installation procedures, and coordination with related work.
- F. Location: On site.

PART 2 - PRODUCTS
NOT USED

PART 3 - EXECUTION
NOT USED

** END OF SECTION **

**01 4213 – ABBREVIATIONS
PAGE 1**

PART 1 - GENERAL

1.01 ARCHITECTURAL ABBREVIATIONS

- A. The following general construction abbreviations have been used in the Documents and details and in notes to simplify and condense wordage that would otherwise be required.

A.I.A.	American Institute of Architects
Allow.	Allowance
Alum.	Aluminum
Approx.	Approximately
Ave.	Average
AC.T	Acoustic Tile
AFF.	Above Finished Floor
Alt.	Alternate
Bet.	Between
Bitum.	Bituminous
Bldg.	Building
Blk.	Block
Blkg.	Blocking
Brk.	Brick
B.O.F.	Bottom of Footing
Bot.	Bottom
CB	Chalkboard
C.Blk.	Concrete Block
Comp.	Composition
Contr.	Contractor
Clg.	Ceiling
Cabt.	Cabinet
Cem.	Cement
C.F.	Cubic Feet
C.J.	Control Joint
C.Y.	Cubic Yard
C.M.U.	Concrete Masonry Unit
Conc.	Concrete
Col.	Column
Cont.	Continuous
Corr.	Corrugated or Corridor
Carp.	Carpet or Carpentry
Cu.Ft.	Cubic Foot
Diag.	Diagonal
Diam.	Diameter
Do.	Ditto
Det.	Detail
Dn.	Down
Dwg.	Drawing
D.F.	Drinking Fountains
E.P.	Electric Panel
Ea.	Each
Elev.	Elevation

**01 4213 – ABBREVIATIONS
PAGE 2**

E.J. or Exp.Jt.	Expansion Joint
EWC	Electric Water Cooler
Ext.	Exterior
Equip.	Equipment
Exp.Str.	Exposed Structural
F.D.	Floor Drain
F.E.C.	Fire Extinguisher Cabinet
Fin.Flr.	Finished Floor
Fin.	Finish
Fixt.	Fixture
Fldg.	Folding
Flr.	Floor
Fdn.	Foundation
Ft.	Foot
Ftg.	Footing
F.V.	Field Verify
Glaz.	Glazing
Ga.	Gauge
Gal.	Gallon
Galv.	Galvanized
Gen.	General
G.P.	Glazed Partition
Gr.	Grade
Grnd.	Ground
GWB or Gyp.Bd.	Gypsum Wall Board
H.C. or H'cap	Handicap
Hdwr.	Hardware
Horiz.	Horizontal
Ht. or Hgt.	Height
Htg.	Heating
H&V or HVAC	Heating, Ventilating & Air Conditioning
Hol. Met.	Hollow Metal
HCP	Hollow Core Plank
I.D.	Inside Diameter
In.	Inch
Incl.	Included, Including
Inter.	Interior
Insul.	Insulation
Jt.	Joint
Kind.	Kindergarten
Lav.	Lavatory
lb.	Pound
L.F.	Linear Foot
Lam.	Laminate
LLV	Long Leg Vertical
Mech.	Mechanical
Min.	Minimum
Max.	Maximum
M.O.	Masonry Opening

**01 4213 – ABBREVIATIONS
PAGE 3**

Mat.	Material
Mfgr.	Manufacturer
Misc.	Miscellaneous
Met.	Metal
MCJ	Masonry Control Joint
Nat.	Natural
NA	Not Applicable
No. or #	Number
N.I.C.	Not in Contract
N.T.S.	Not in Scale
O.C.	On Center
O.D.	Outside Diameter
Opng. or Op'g.	Opening
Oz.	Ounce
Plumb.	Plumber
Plas.	Plaster
Plast.	Plastic
Perf.	Perforated
PRE	Power Roof Exhauster
psf	Pounds per Square Foot
psi	Pounds per Square Inch
P.	Paint
Plywd. or Ply.	Plywood
Pl.	Plate
Prefab.	Prefabricated
Prefin.	Prefinished
Pnl.	Panel
Q.T.	Quarry Tile
Quan.	Quantity
R.	Riser
Rad.	Radius
Rect.	Rectangular
Reg.	Regular
Req'd	Required
Reinf.	Reinforced
Rev.	Reversed
R.O.W.	Right of Way
Rub.	Rubber
R.O.	Rough Opening
Rm.	Room
R.D.	Roof Drain
SED	State Education Department – Facilities Planning
Sim.	Similar
S.F.	Square Foot
Sq.	Square
Stl.	Steel
Str. or Strcl.	Structural
Sp. Gl.	Spray Glaze
Stn. Stl. S.S.	Stainless Steel
Spec.	Specifications

**01 4213 – ABBREVIATIONS
PAGE 4**

Std.	Standard
SGFT	Structural Glazed Facing Tile
Stl.T.	Steel Trowel
S.C.Blk.	Scored Concrete Block
Sht.	Sheet
Surf.	Surface
S.Y.	Square Yard
T.B.	Tackboard
TCP	Thin Coat Plaster
T&G	Tongue & Groove
Th. or Thk.	Thick
Tot.	Total
TV	Television
Ter. or Terr.	Terrazzo
T.O.S.	Top of Steel
Typ.	Typical
U.L.	Underwriters Laboratory
Vert.	Vertical
VCT	Vinyl Composition Tile
Vin. Fab.	Vinyl Fabric
W/	With
WC	Water Closet (Toilet)
WF	Wide Flange
Wt.	Weight
W/O	Without
Wd.	Wood
WWM	Welded Wire Mesh
W.R.	Water Resistant

**** END OF SECTION ****

SECTION 01 4310 – SPECIAL INSPECTIONS AND STRUCTURAL TESTING

PART 1 GENERAL

1.01 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.
- B. Related documents attached to this specification:
 - 1. Statement of Special Inspections
 - 2. Quality Assurance Plan
 - 3. Schedule of Special Inspection Services
 - 4. Final Report of Special Inspections

1.02 GENERAL REQUIREMENTS

- A. Special Inspections and Structural Testing shall be in accordance with the Building Code of New York State, based on the ICC International Building, latest edition.
- B. The program of Special Inspection and Structural Testing is a Quality Assurance program intended to ensure that the work is performed in accordance with the Contract Documents.

1.03 SCHEDULE OF INSPECTIONS AND TESTS

- A. Required inspections and tests are described in the attached Schedule of Special Inspection Services and in the individual specification sections for the items to be inspected or tested.

1.04 QUALIFICATIONS

- A. The Special Inspector shall be a licensed Professional Engineer and/or an individual certified in a particular area of expertise per Section 1.04-D who is approved by the Contracting Officer.
- B. The Testing Laboratory and individual Special Inspectors shall be approved by the Contracting Officer.
- C. The testing laboratory shall maintain a full time licensed Professional Engineer in the State of New York who shall certify all test reports. The Engineer shall be responsible for the training of the testing technicians and shall be in responsible charge of the field and laboratory testing operations.
- D. Special Inspections shall be performed by qualified personnel as outlined in Chapter 17 of the Building Code of New York State and with the appropriate training and certifications as indicated below:

E. SPECIAL INSPECTOR QUALIFICATIONS

AGENT NO.	CATEGORY	CODE REFERENCE	MINIMUM QUALIFICATIONS
1	Reinforced Concrete	1705.3	1. Current ICC Reinforced Concrete Special Inspector or ACI Concrete Construction Inspector 2. Concrete field testing can be by an ACI Concrete Field Testing Technician with Grade I Certification. 3. Engineer-in-Training (EIT) with relevant experience. 4. NYS Licensed Professional Engineer (P.E.) with relevant experience.
2	Welding	1705.3.1	1. Current AWS Certified Welding Inspector 2. Current ICC Structural Steel and Welding certificate plus one year of relevant experience. 3. Current Level II certification from the American Society for Nondestructive Testing (NDT). 4. Current NDT Level III provided previously certified as NDT Level II.
3	High-Strength Bolting & Steel Frame Inspection	1705.2	1. Current ICC Structural Steel and Welding certificate and one year of relevant experience. 2. EIT with relevant experience. 3. P.E. with relevant experience.
4	Excavation & Filling; Verification of Soils; Piling & Drilled Piers; Modular Retaining Walls; Caissons	1705.6	1. Current Level II certificate in geotechnical engineering technology/construction from the National Institute for Certification in Engineering Technologies (NICET). 2. EIT with relevant experience 3. P.E. with relevant experience
5	Inspection of Fabricators	1704.2.5	1. Structural Steel: See welding requirements.
6	Seismic Resistance	1705.12	1. Per the applicable categories.

1.05 SUBMITTALS

- A. The Special Inspector and Testing Laboratory shall submit for review to the Structural Engineer of Record, Architect, and Owner a copy of their qualifications which shall include the names and qualifications of each of the individual inspectors and technicians who will be performing inspections or tests.
- B. The Special Inspector and Testing Laboratory shall disclose any past or present business relationship or potential conflict of interest with the contractor or any of the Subcontractors whose work will be inspected or tested.

1.06 PAYMENT

- A. The Owner shall engage and pay for the services of the Special Inspector, Agents of the Special Inspector, and Testing Laboratory.
- B. The Contractor shall be responsible for the cost of any re-testing or re-inspection of work which fails to comply with the requirements of the Contract Documents.

1.07 CONTRACTOR RESPONSIBILITIES

- A. The Contractor shall cooperate with the Special Inspector and his agents so that the Special Inspections and testing may be performed without hindrance.
- B. The Owner's Representative shall review the *Statement of Special Inspections* and shall be responsible for coordinating and scheduling inspections and tests. The Contractor will meet with the Owner's Representative for a schedule of testing before any work requiring testing begins. The Owner's Representative shall notify the Owner's Special Inspector or Testing Laboratory at least 24 hours in advance of a required inspection or test. Uninspected work that required inspection may be rejected solely on that basis.
- C. The Contractor shall provide incidental labor and facilities to provide access to the work to be inspected or tested, to obtain and handle samples at the site or at source of products to be tested, to facilitate tests and inspections, storage and curing of test samples.
- D. The Contractor shall keep at the project site the latest set of construction drawings, field sketches, approved shop drawings and specifications for use by the inspectors and testing technicians.
- E. The Special Inspection program shall in no way relieve the Contractor of his obligation to perform work in accordance with the requirements of the Contract Documents or from implementing an effective Quality Control program. All work that is to be subjected to Special Inspections shall first be reviewed by the Contractor's quality control personnel.
- F. The Contractor shall be solely responsible for construction site safety.

1.08 LIMITS OF AUTHORITY

- A. The Special Inspector or Testing Laboratory may not release, revoke, alter, or enlarge on the requirements of the Contract Documents.
- B. The Special Inspector or Testing Laboratory will not have control nor responsibility over the Contractor's means and methods of construction.
- C. The Special Inspector or Testing Laboratory shall not be responsible for construction site safety. The Special Inspector or Testing Laboratory has no authority to stop the work.

1.10 RECORDS AND REPORTS

- A. Detailed daily reports shall be prepared of each inspection or test submitted to the Special Inspector. Reports shall include:
 - 1. Date of test or inspection
 - 2. Name of inspector or technician
 - 3. Location of specific areas tested or inspected
 - 4. Description of test or inspection and results
 - 5. Applicable ASTM standard

- 6. Weather conditions
- 7. Engineer's seal and signature

- B. The Special Inspector shall submit interim reports to the Architect and Owner's Representative at the end of each week which includes all inspections and test reports received that week.

- C. Any discrepancies from the Contract documents found during a Special Inspection shall be immediately reported to the Contractor by the Owner's Representative. If the discrepancies are not corrected, the Owner's Representative shall notify the Architect. Reports shall document all discrepancies identified and the corrective action taken.

- D. The Testing Laboratory shall immediately notify the Special Inspector and the Owner's Representative by telephone or fax of any test results which fail to comply with the requirements of the Contract Documents.

- E. Reports shall be submitted to the Special Inspector within 7 days of the inspection or test. Hand written reports may be submitted if final typed copies are not available.

- F. At the completion of the work requiring Special Inspections, each inspection agency and testing laboratory shall provide a statement to the Special Inspector that all work was completed in substantial conformance with the Contract documents and that all appropriate inspections and tests were performed.

1.11 FINAL REPORT OF SPECIAL INSPECTIONS

- A. The Final Report of Special Inspections shall be made by the Special Inspector and submitted to the Architect prior to the issuance of final payment to the Contractor. The Final Report of Special Inspections will certify that all required inspections have been performed and will itemize any discrepancies that were not corrected or resolved.

**** END OF SECTION ****

PART 1 - GENERAL

1.01 SUMMARY

- A. Section Includes
 - 1. Quality assurance and control of installation.
 - 2. References.
 - 3. Field samples and Mock-ups.
 - 4. Inspection and testing laboratory services.
 - 5. Manufacturers' field services and reports
- B. Related Work Specified Elsewhere
 - 1. Section 01 4219 - Reference Standards.
 - 2. Section 01 3300 - Submittals: Submission of Manufacturers' Instructions and Certificates.
 - 3. Special Structural Inspections by the Owner.

1.02 QUALITY ASSURANCE / CONTROL OF INSTALLATION

- A. Monitor quality control over suppliers, manufacturers, Products, services, site conditions, and workmanship, to produce Work of specified quality.
- B. Comply fully with manufacturers' instructions, including each step in sequence.
- C. Should the manufacturers' instructions conflict with Contract Documents, request clarification from Architect before proceeding.
- D. Comply with specified standards as a minimum quality for the Work except when more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Perform work by persons qualified to produce workmanship of specified quality.
- F. Verify that field measurements are as indicated on shop drawings or as instructed by the manufacturer.
- G. Secure Products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion or disfigurement.

1.03 REFERENCES

- A. Conform to reference standard by date of issue current on date of Contract Documents.
- B. Obtain copies of standards when required by Contract Documents.
- C. Should specified reference standards conflict with Contract Documents, request clarification from Architect before proceeding.
- D. Neither the contractual relationships, duties, or responsibilities of the parties in Contract nor those of the Architect/Engineer shall be altered from the Contract Documents by mention or inference otherwise in any reference document.

1.04 FIELD SAMPLES AND MOCK-UPS

- A. Install field samples and finishes at the site as required by individual specifications Sections for review.
- B. Acceptable samples and finishes represent a quality level for the Work and shall be a comparison standard for the remaining work.
- C. Where field sample is specified in individual Sections to be removed, clear area when directed to do so by Architect.

1.05 INSPECTION AND TESTING LABORATORY SERVICES

- A. The Contractor shall employ and pay for services any independent testing laboratory acceptable to the Owner to perform inspections, tests and other services required by their individual Specification Sections and not a part of the Owner's special inspections.
- B. The General Contractor shall hire an independent testing lab acceptable to the Owner to perform inspections, tests and other services not covered by the Owner's special inspections. See 'H' below.
- C. Services will be performed in accordance with the requirements of governing authorities and with specified standards.
- D. Reports will be submitted to Architect by the testing laboratory in duplicate giving observations and results of tests, indicating compliance or non-compliance with specified standards and with Contract Documents.
- E. Contractor shall cooperate with testing laboratory personnel; furnish tools, samples of materials, design mix, equipment, storage and assistance as requested.
 - 1. Notify Architect and testing laboratory 48 hours prior to expected time for operations requiring testing services.
 - 2. Make arrangements with the testing laboratory and pay for additional samples and tests for Contractor's convenience.
- F. Testing and employment of testing agency or laboratory shall not relieve the Contractor of obligation to perform work in accordance with requirements of Contract Documents.
- G. Retesting required because of non-conformance to specified requirements shall be performed by the same independent firm on instructions by the Architect. Payment for retesting will be by the Contractor.
- H. The Owner will engage the services of a qualified Special Inspector for this Project. The Special Inspector will provide and/or coordinate inspection and testing requirements as necessary, in accordance with the provisions of the Building Code of New York State, and the Statement of Special Inspections included in the specifications.

1.06 MANUFACTURERS' FIELD SERVICES AND REPORTS

- A. Submit qualifications of observer to Architect 30 days in advance of required observations. Observer subject to approval of Architect.
- B. When specified in individual specification Sections, require material or Product suppliers or manufacturers to provide qualified staff personnel to observe site conditions, conditions of

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PAGE 3**

surfaces and installation, quality of workmanship, start-up of equipment, test, adjust, and balance of equipment and as applicable, and to initiate instructions when necessary.

- C. Individuals to report observations and site decisions or instructions given to applicators or installers that are supplemental or contrary to manufacturers' written instructions.
- D. Submit report in duplicate within 15 days of observation to Architect for review.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

NOT USED

****END OF SECTION****

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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 specifies requirements for temporary services and facilities, including utilities, construction and support facilities, security and protection.
- B. This Section applies to the Prime Contractor and his subcontractors. Prime Contractor shall provide whatever temporary facilities that may be required to complete his Contract Work as indicated.
- C. Temporary utilities required include but are not limited to:
 - 1. Water service and distribution.
 - 2. Temporary electric power and light.
 - 3. Telephone service.
 - 4. Storm and sanitary sewer.
- D. Temporary construction and support facilities required include but are not limited to:
 - 1. Field offices and storage.
 - 2. Temporary roads and paving.
 - 3. Sanitary facilities, including drinking water.
 - 4. Dewatering facilities and drains.
 - 5. Weather protection.
 - 6. Temporary Project identification signs and bulletin boards.
 - 7. Cleanup and waste disposal services.
 - 8. Construction aids and miscellaneous services and facilities.
- E. Security and protection facilities required include but are not limited to:
 - 1. Storm water control.
 - 2. Tree and plant protection.
 - 3. Pest control.
 - 4. Security enclosure and lockup.
 - 5. Barricades, warning signs, lights.

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- 6. Environmental protection.
- 7. Temporary fence.
- F. Related Sections include the following:
 - 1. Division 01 Section "Submittals" for procedures for submitting copies of implementation and termination schedule and utility reports.

1.3 USE CHARGES

- A. General: Cost or use charges for temporary facilities are not chargeable to Owner or Architect and shall be included in the Contract Sum. Allow other entities to use temporary services and facilities without cost, including, but not limited to, the following:
 - 1. Owner
 - 2. Occupants of Project.
 - 3. Architect.
 - 4. Testing agencies.
 - 5. Personnel of 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 Service: Electric power from Owner's existing system is available for use without metering and without payment of use charges. Provide connections and extensions of services as required for construction operations.

1.4 SUBMITTALS

- A. Site Plan: Show temporary facilities, utility hookups, staging areas, and parking areas for construction personnel.
- B. Temporary Utilities: Submit reports of tests, inspections, meter readings and similar procedures performed on temporary utilities.

1.5 QUALITY ASSURANCE

- A. Regulations: Comply with industry standards and applicable laws and regulations of all Federal, State, and local governing authorities having jurisdiction, including but not limited to:
 - 1. OSHA regulations.
 - 2. Building Code requirements.
 - 3. Health and safety regulations.
 - 4. Utility company regulations.
 - 5. Police, Fire Department and Rescue Squad rules.

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6. Environmental protection regulations and NYS DEC.
- B. Standards: Comply with NFPA 241, "Standard for Safeguarding Construction, Alterations, and Demolition Operations", ANSI-A10 Series standards for "Safety Requirements for Construction and Demolition", and NECA Electrical Design Library "Temporary Electrical Facilities."
 1. Trade Jurisdictions: Assigned responsibilities for installation and operation of temporary utilities are not intended to interfere with trade regulations and union jurisdictions.
 2. Electrical Service: Comply with NEMA, NECA and UL standards and regulations for temporary electric service. Install service in compliance with National Electric Code (NFPA 70).
- C. Inspections: Arrange for authorities having jurisdiction to inspect and test each temporary utility before use. Obtain required certifications and permits.

1.6 PROJECT CONDITIONS

Temporary Utilities: At the earliest feasible time, when acceptable to the Architect, change over from use of temporary service to use of the permanent service. Retain this subparagraph below to impose responsibility for maintenance and protection of permanent services and facilities used to provide temporary service and facility.

Temporary Use of Permanent Facilities: Installer of each permanent service shall assume responsibility for operation, maintenance, and protection of each permanent service during its use as a construction facility before Owner's acceptance, regardless of previously assigned responsibilities.

- A. Conditions of Use: Keep temporary services and facilities clean and neat in appearance. Operate in a safe and efficient manner and repair any damages without delay. Take necessary fire prevention measures. Do not overload facilities, or permit them to interfere with progress. Do not allow hazardous dangerous or unsanitary conditions, or public nuisances to develop or persist on the site. Relocate temporary services and facilities as required by progress of the Work.
- B. Damages: Prime Contractor shall provide for repair of damages caused by use of his temporary facilities. Walks, pavements, curbs, interior finishes, and any other existing surfaces that are broken, damaged, settled or otherwise defective, as a result of receiving, handling or storage of materials or the performance of work for this project shall be fully restored at the expense of the Prime Contractor whose operations or employees caused the damage.
- C. Use of Site: Prime Contractor shall limit use of the site for access, parking and storage of materials to those areas approved by the Architect. Materials shall be brought into the building only by routes approved by Architect.

1.7 STAGING AREAS AND BUILDING ACCESS

- A. A temporary staging area will be provided adjacent to the Bus Garage as indicated on site plan. Other areas will be considered based on prior approval of the Architect.
- B. All access to the buildings must be through the staging area and passageways, stairways, elevator, etc. as assigned by the Owner.

PART 2 - PRODUCTS

1.8 MATERIALS

- A. General: Provide new materials; if acceptable to the Architect, undamaged previously used materials in serviceable condition may be used. Provide materials suitable for the use intended.
- B. Pavement: Comply with Division 32 Section "Asphalt Paving."
- C. Chain-Link Fencing: Minimum 2-inch (50-mm), 0.148-inch- (3.76-mm-) thick, galvanized steel, chain-link fabric fencing; minimum 8 feet (2.4 m) high with galvanized steel pipe posts; minimum 2-3/8-inch- (60-mm-) OD line posts and 2-7/8-inch- (73-mm-) OD corner and pull posts, with 1-5/8-inch- (42-mm-) OD top rails.
- D. Portable Chain-Link Fencing: Minimum 2-inch (50-mm), 9-gage, galvanized steel, chain-link fabric fencing; minimum 6 feet (1.8 m) high with galvanized steel pipe posts; minimum 2-3/8-inch- (60-mm-) OD line posts and 2-7/8-inch- (73-mm-) OD corner and pull posts, with 1-5/8-inch- (42-mm-) OD top and bottom rails. Provide galvanized steel bases for supporting posts.
- E. Wood Enclosure Fence: Plywood, 8 feet (2.4 m) high, framed with four 2-by-4-inch (50-by-100-mm) rails, with preservative-treated wood posts spaced not more than 8 feet (2.4 m) apart.
- F. 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.
- G. Tarpaulins: Provide waterproof, fire-resistant, UL labeled tarpaulins with flame-spread rating of 15 or less. For temporary enclosures provide translucent nylon reinforced laminated polyethylene or polyvinyl chloride fire retardant tarpaulins.
- H. Water: Provide potable water approved by local health authorities.

1.9 EQUIPMENT

- A. General: Provide new equipment; if acceptable to the Architect, undamaged, previously used equipment in serviceable condition may be used. Provide equipment suitable for use intended.
- B. Water Hoses: Provide 3/4" heavy-duty, abrasion-resistant, flexible rubber hoses 100 ft. long, with pressure rating greater than the maximum pressure of the water distribution system; provide adjustable shut-off nozzles at hose discharge.
- C. Electrical Outlets: Provide properly configured NEMA polarized outlets to prevent insertion of 110-120 volt plugs into higher voltage outlets. Provide receptacle outlets equipped with ground-fault circuit interrupters, reset button and pilot light, for connection of power tools and equipment.
- D. Electrical Power Cords: Provide grounded extension cords; use "hard-service" cords where exposed to abrasion and traffic. Provide waterproof connectors to connect separate lengths of electric cords, if single lengths will not reach areas where construction activities are in progress. Do not exceed safe length-voltage ratio.

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- E. Lamps and Light Fixtures: Provide general service incandescent lamps of wattage required for adequate illumination. Provide guard cages or tempered glass enclosures, where exposed to breakage. Provide exterior fixtures where exposed to moisture.
- F. Heating Units: When permanent systems cannot be used for temporary heat, provide a system of gas fired temporary heating units that have been tested and labeled by UL, and are A.G.A. certified. Gas fired heaters may be radiant type, natural convection type, or forced recirculation type, but all shall be UL rated and A.G.A. approved for non-vent use.
 - 1. Use of electric heaters, gasoline-burning space heaters, open-flame heaters, or salamander-type heating units is prohibited.
 - 2. Gas heaters shall be ducted if heater is approved for ducted use.
 - 3. If bottled gas type units are used, storage tanks shall be located outside the building.
- G. Temporary Toilet Units: Provide self-contained single-occupant toilet units of the chemical, aerated recirculation, or combustion type, properly vented and fully enclosed with a glass fiber reinforced polyester shell or similar nonabsorbent material.
- H. First Aid Supplies: Comply with governing regulations.

Fire Extinguishers: Provide hand-carried, portable UL-rated, class "A" fire extinguishers for temporary offices and similar spaces. In other locations provide hand-carried, portable, UL-rated, class "ABC" dry chemical extinguishers, or a combination of extinguishers of NFPA recommended classes for the exposures. Comply with NFPA 10 and NFPA 241 for classification, extinguishing agent and size required by location and class of fire exposure.
- I. Drinking-Water Fixtures: Containerized, tap-dispenser, bottled-water drinking-water units, including paper cup supply.
- J. Storage and Fabrication Sheds: Provide sheds sized, furnished, and equipped to accommodate materials and equipment for construction operations.

PART 3 - EXECUTION

1.10 PROTECTION OF BUILDING OCCUPANTS

- A. The requirements of Section 155 of the Regulations of the New York State Commissioner of Education apply to this Project.
- B. Owner occupied areas of the building shall always comply with the minimum requirements necessary to maintain a Certificate of Occupancy.
- C. General safety and security standards for this project include:
 - 1. All construction materials shall be stored in a safe and secure manner.
 - 2. Fences around construction supplies or debris shall be maintained.
 - 3. Gates in temporary fences shall always be locked unless a worker is in attendance to prevent unauthorized entry to the Contract areas. 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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4. Workers shall wear photo-identification badges at all times for identification and security purposes.
- D. Separation of Construction Areas: 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 contaminant barriers must be made to prevent exposure to dust or contaminants. Each Contractor working inside the buildings shall temporarily seal doorways enclosing their work area, using heavy duty plastic, duct tape, etc. Repairs of the plastic and tape must be made in the event the tape becomes loose or the plastic is cut or torn.
- E. Noise abatement during construction:
 1. Construction and maintenance operations shall not produce noise in excess of 60 dba in occupied spaces or shall be scheduled for times when the building is not occupied or acoustical abatement measures shall be taken.
- F. Control of airborne contaminants during construction:
 1. Each Contractor shall be responsible for the control of his chemical fumes, gases, and other contaminants produced by welding, gasoline or diesel engines, roofing, paving, painting, etc. to ensure they do not enter occupied portions of the building or air intakes.

1.11 INSTALLATION

- A. Use qualified personnel for installation of temporary facilities. Locate facilities where they will serve the Project adequately and result in minimum interference with performance of the Work. Relocate and modify facilities as required by progress of the Work.
Coordinate locations with the Owner and Architect.
- B. Provide each facility ready for use when needed to avoid delay. Maintain and modify as required. Do not remove until facilities are no longer needed, or are replaced by authorized use of completed permanent facilities.

1.12 TEMPORARY UTILITY INSTALLATION, GENERAL

- A. Engage the appropriate local utility company to install temporary service or connect to existing service. Where the company provides only part of the service, provide the remainder with matching, compatible materials and equipment; comply with the company's recommendations.
 1. Arrange with the company and existing users for a time when service can be interrupted, where necessary, to make connections for temporary services.
 2. Provide adequate capacity at each stage of construction. Prior to temporary utility availability, provide trucked-in services.
 3. Obtain easements to bring temporary utilities to the site, where the Owner's easements cannot be used for that purpose.

1.13 WATER SERVICE

- A. The Plumbing Contractor shall make arrangements with the Owner for the use of water during construction for himself and all Prime Contractors and subcontractors on this project.

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- B. From the source of supply the Plumbing Contractor shall provide all temporary connections, lines, hose, pipe, barrels and all other parts and pay all costs for same and shall run temporary lines to each area of the Work where water is required.
 - 1. Sterilization: Sterilize temporary water piping prior to use.
- C. Prime Contractors and subcontractors requiring water shall provide their own hoses and connections to the temporary water lines supplied by the Plumbing Contractor.
- D. The Plumbing Contractor shall remove from premises all temporary lines, hose, etc., on completion of the Work or as otherwise directed.

1.14 TEMPORARY ELECTRIC SERVICE

- A. The Electric Contractor shall provide temporary electric from Owner's existing electric service. The Electric Contractor shall make arrangements with Owner for tie into existing service and shall ascertain that adequate power is available for temporary service. Provide weatherproof, grounded electric power service and distribution system of sufficient size, capacity, and power characteristics during construction period. Include meters, transformers, overload protected disconnects, automatic ground-fault interrupters and main distribution switch gear.
- B. Provide the following branch circuits, equally spaced throughout the work areas as construction permits. Provide independently fused circuits to prevent interference with the power to the existing facilities in the event of failure in the temporary wiring.
 - 1. Five (5) 30 ampere, three wire, (120/208) volt lighting and power circuits, with heavy duty lampholders and grounding type outlets installed so that no area within the contract area shall be located more than 20 feet from a lamp outlet and not more than 30 feet from a power outlet.

1.15 DRAINAGE

- A. Temporary Erosion and Sedimentation Control: Comply with requirements specified in Division 31 Section "Site Clearing."
- B. Temporary Erosion and Sedimentation Control: Provide measures to prevent soil erosion and discharge of soil-bearing water runoff and airborne dust to adjacent properties and walkways, according to requirements of authorities having jurisdiction.
 - 1. Inspect, repair, and maintain erosion- and sedimentation-control measures during construction until permanent vegetation has been established.
- C. Stormwater Control: Comply with authorities having jurisdiction. Provide earthen embankments and similar barriers in and around excavations and subgrade construction to prevent flooding by runoff of stormwater from heavy rains.
 - 1. Substantial Completion will be permitted to use permanent facilities, under conditions acceptable to the Owner and Architect.
 - 2. Keep the field office clean and orderly. Provide daily cleaning and maintain office in good condition.

1.16 STORAGE

- A. Prime Contractor or subcontractors may erect temporary buildings for the storage of materials and equipment. Heat, light and power, if required, for temporary buildings, is the responsibility of the Prime Contractor or subcontractor erecting each temporary building.
- B. The location of any temporary building shall be approved by the Architect and Owner and shall not interfere with the use of the adjacent buildings, driveways, walks, etc.
- C. Storage and Fabrication Sheds: Install storage and fabrication sheds, sized, furnished and equipped to accommodate materials and equipment involved, including temporary utility service. Sheds may be open shelters or fully enclosed spaces within the building or elsewhere on the site.

1.17 TEMPORARY PAVING

- A. Temporary Roads and Paved Areas: Construct and maintain temporary roads and paved areas adequate for construction operations. Locate temporary roads and paved areas as indicated on Drawings.
 - 1. Provide dust-control treatment that is nonpolluting and nontracking. Reapply treatment as required to minimize dust.
- B. Traffic Controls: Provide temporary traffic controls at junction of temporary roads with public roads. Include warning signs for public traffic and "STOP" signs for entrance onto public roads. Comply with requirements of authorities having jurisdiction.
 - 1. Protect existing site improvements to remain including curbs, pavement, and utilities.
 - 2. Maintain access for fire-fighting equipment and access to fire hydrants.

1.18 SANITARY FACILITIES

- A. Sanitary facilities include temporary toilets, wash facilities and drinking water fixtures. Comply with regulations and health codes for the type, number, location, operation and maintenance of fixtures and facilities. Install where facilities will best serve the Project's needs. Coordinate locations with Architect.
 - 1. Provide toilet tissue, paper towels, paper cups and similar disposable materials for each facility. Provide covered waste containers for used material.
 - 2. The area of sanitary facilities shall not be used for loitering, and shall be kept clean by the General Contractor.
- B. Toilets: Use of the Owner's existing toilet facilities, as designated by the Owner, will **NOT** be permitted.
- C. Toilets: Contractor shall install self-contained toilet units. Shield toilets to ensure privacy. Use of pit-type privies will not be permitted. Locations shall be coordinated with the Architect.
 - 1. Provide separate facilities for male and female personnel.
- D. Wash Facilities: Contractor shall install wash facilities supplied with potable water at convenient locations for personnel involved in handling materials that require wash-up for

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a health and sanitary condition. Dispose of drainage properly. Supply cleaning compounds appropriate for each condition.

1. Provide safety showers, eyewash fountains, and similar facilities for convenience, safety, and sanitation or personnel.
- E. Drinking-Water Fixtures: Provide drinking-water fountains where indicated, including paper cup supply.
- F. Drinking-Water Facilities: Provide containerized, tap-dispenser, bottled-water drinking-water units, including paper supply.
1. Where power is accessible, provide electric water coolers to maintain dispensed water temperature at 45 to 55 deg F (7 to 13 deg C).

1.19 PUMPING AND DRAINING

- A. Dewatering Facilities and Drains: For temporary drainage and dewatering facilities and operations not directly associated with construction activities included under individual Sections, comply with dewatering requirements of applicable Division-31 Sections. Where feasible, utilize the same facilities. Maintain the site, excavations and construction free of water.
1. Dispose of rainwater in a lawful manner that will not result in flooding Project or adjoining property nor endanger permanent Work or temporary facilities.
 2. Before connection and operation of permanent drainage piping system, provide temporary drainage where roofing or similar waterproof deck construction is completed.
- B. The General Contractor shall keep excavations and other project related work areas free from water at all times. Pump or drain as necessary. Distribute discharge to prevent excessive erosion and damage to surrounding areas.

1.20 WEATHER PROTECTION

- A. Temporary Enclosures: The Contractor shall at all times provide temporary enclosure for protection of construction in progress and completed, from exposure, foul weather, other construction operations and similar activities so as to maintain all work materials, equipment, apparatus, and fixtures free from injury or damage.
1. Where heat is needed and the permanent building enclosure is not complete, provide temporary enclosures where there is no other provision for containment of heat. Coordinate enclosure with ventilating and material drying or curing requirements to avoid dangerous conditions and effects.
 2. Install tarpaulins securely, with incombustible wood framing and other materials. Close openings of 25 square feet or less with plywood or similar materials.
 3. Close openings through floor or roof decks and horizontal surfaces with load-bearing wood-framed construction.
 4. Where temporary wood or plywood enclosure exceeds 100 square feet in area, use UL-labeled fire-retardant treated material for framing and main sheathing.

- B. During the entire construction period of the project if snow and freezing weather occurs, the Contractor shall remove snow and ice from work areas as may be required for the protection of the work and not delay the progress, of the work.
- C. The Contractor shall provide all plowing and removal required to keep all temporary roads, walks and accessways free from snow and ice so that free unimpeded access to and within staging areas for work of the project are maintained for all project personnel.

1.21 SCAFFOLDING AND HOISTING, GENERAL

- A. The Contractor shall provide all scaffolds, runways, ramps, ladders, hoists and other construction aids as may be required for reaching all portions of his work conveniently and safely, except as otherwise indicated.

1.22 CLEANUP AND WASTE DISPOSAL

- A. General: The premises and the job site shall be maintained in a reasonably neat and orderly condition and kept free from accumulations of waste materials and rubbish during the entire construction period. **Remove all crates, cartons and other flammable waste materials or trash from the work areas at the end of each working day.**
 - 1. Access routes and piles of debris shall be wet down to eliminate excessive dust.
- B. Responsibility: The Contractor shall be responsible for the general cleaning up work of all of his subcontractors and trades employed on the project, except as otherwise specified. If the premises and job site are not maintained properly, the Owner may have any accumulations of waste materials or trash removed and charge such cost to the Contractor.
- C. All areas inside and outside the work area shall be cleaned and left free from rubbish, mortar drippings, extraneous construction materials, dirt and dust. Clean up areas within the contract limits, and keep areas adjoining the construction site, such as streets driveways, walkways, etc., clean and free from debris, mud, etc., which was generated from the construction site.
- D. All rubbish shall be lowered by way of chutes, or lowered in receptacles. Under no circumstances shall any rubbish or waste be dropped or thrown from one level to another within or outside the building.
- E. Damage to Existing Surfaces: Care shall be taken by workmen not to mark, soil or otherwise deface any finished surfaces. In the event that any finished surface becomes defaced in any way, the Contractor causing damage shall be responsible for cleaning and restoring such surfaces to their original condition.
- F. Clean up immediately upon completion of each trades work.
- G. The Mechanical and Electrical Contractors shall, on completion, clean all exposed piping, pip fin radiation, convector and air conditioning equipment, fixtures, motors, fans, ducts, panel boards and all other parts of their work and leave same free of all dirt, dust, etc.
- H. Collection and Disposal of Waste: Collect waste from construction areas and elsewhere daily. Comply with requirements of NFPA 241 for removal of combustible waste material and debris. Enforce requirements strictly. Do not hold materials more than 7 days during normal weather or 3 days when the temperature is expected to rise above 80 deg. F (27 deg. C). Handle hazardous, dangerous, or unsanitary waste materials separately from other waste by containerizing properly. Dispose of material in a lawful manner.

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1.23 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Except for use of permanent fire protection as soon as available, do not change over from use of temporary security and protection facilities to permanent facilities until Substantial Completion, or longer as requested by the Architect.

1.24 TEMPORARY FIRE PROTECTION AND PREVENTION

- A. Fire Protection Program: The General Contractor shall be responsible for the development of a fire protection and prevention program to be followed throughout all phases of the construction and demolition work, and he shall provide for the fire fighting methods and equipment as required for all Contractors and employees for the project. The program shall be in compliance with OSHA Construction Safety and Health Regulations as stated in the Federal Register dated June 24, 1974, Volume 39, Number 122, Part II, Subparagraph F and any amendments or any updating thereof and any more stringent requirements by local governing bodies. There shall be no delay in providing the necessary equipment. Some conditions of the program are as follows:
1. Smoking is prohibited on site.
 2. Maintain unobstructed access at all times to fire extinguishers, fire hydrants, temporary fire protection facilities, stairways and other access routes for fighting fires. Prohibit smoking in hazardous fire exposure areas.
 3. Locate fire extinguishers where convenient and effective for their intended purpose, but not less than one extinguisher on each floor at or near each usable stairwell. All firefighting equipment provided shall be conspicuously located.
 4. All firefighting equipment shall be inspected and maintained in operating condition. Defective equipment shall be immediately replaced.
 5. Fire extinguishers, water drums and other equipment, subject to freezing, shall be protected from freezing.
 6. Store combustible materials in containers in fire-safe locations.
 7. Provide supervision of welding operations, combustion type temporary heating units, and similar sources of fire ignition.
 8. 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.
 9. Regardless of any conditions stated above, the General Contractor shall provide appropriate fire extinguishers for use by all persons employed on the project who are using equipment that constitute a fire hazard such as welding and he shall provide accessible appropriate fire extinguishers within 50 feet of wherever combustible or flammable liquids or gases are being used or stored on the job site.
- B. Temporary Fire Protection: Until fire protection needs are supplied by permanent facilities, install and maintain temporary fire protection facilities of the types needed to protect against reasonably predictable and controllable fire losses. Comply with NFPA 10 "Standard for Portable Fire Extinguishers," and NFPA 241 "Standard for Safeguarding Construction, Alterations and Demolition Operations."

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- C. Permanent Fire Protection: At the earliest feasible date in each area of the Project, complete installation of the permanent fire protection facility, including connected services, and place into operation and use. Instruct key personnel on use of facilities.

1.25 BARRICADES AND PROTECTION

- A. Barricades, Warning Signs and Lights: Comply with standards and code requirements for erection of structurally adequate barricades. Paint with appropriate colors, graphics and warning signs to inform personnel and the public of the hazard being protected against. Where appropriate and needed provide lighting, including flashing red or amber lights.
1. Roadways, walks, paths, exit ways and other areas, etc. shall remain unobstructed and shall be maintained in a safe and satisfactory manner by the General Contractor.
 2. The General Contractor shall properly barricade all of his excavations, trenches, dangerous openings and other parts to prevent injury or harm to any person in such areas.
 3. All guards and night lights and other proper protection shall be provided by the General Contractor, for the safety of the public, occupants of adjacent buildings and areas and employees and staff of the Owner as may be required by the Owner and all authorities having jurisdiction.
- B. The General Contractor shall provide and maintain such temporary work as may be required for the protection of new and existing work where liable to injury, including building paper and plank for floors and treads, and boxing for jambs, sills, projecting courses and such other work. Materials or methods which stain or damage finished work shall not be used.
- C. The General Contractor shall be responsible for and shall protect all trees, shrubs, lawns and other Sitework property from damage by operations of this project where such items are to remain.
1. Install temporary fencing located as indicated or outside the drip line of trees to protect vegetation from damage from construction operations. Protect tree root systems from damage, flooding, and erosion.
- D. Enclosure Fence: The General Contractor shall install temporary protective fencing around staging areas as required for the protection of equipment and materials.
1. Fencing location shall be coordinated with the Owner and Architect.
 2. Fence shall be a substantial heavy duty chain link type fence (8'-0") eight feet high. Provide entrance gates and doors of similar chain link construction, with location as approved by the Architect, with locking hardware and with sizes as required for admitting construction personnel, vehicles, and equipment. The fence shall be maintained in good repair at all times while it remains in place at the project site. A well painted or well galvanized appearance will be required at all times with no rusty areas. The fence shall be removed when it is no longer required and as directed by the Architect and it shall become the property of the Contractor after removal from the Site.
 3. Maintain security by limiting number of keys and restricting distribution to authorized personnel.

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- E. Security Enclosure and Lockup: Install substantial temporary enclosure of partially completed areas of construction. Provide locking entrances to prevent unauthorized entrance, vandalism, theft and similar violations of security.
 - 1. Storage: Where materials and equipment must be stored, and are of value or attractive for theft, provide a secure lockup. Enforce discipline in connection with the installation and release of material to minimize the opportunity for theft and vandalism.
- F. Dust Tight Partitions: The General Contractor shall furnish and install dust tight partitions made of plywood, gypsum board, metal studs or other approved materials at any location as may be required to prevent dust and dirt from traversing into occupied areas of the existing building.
 - 1. Furnish and install dust partitions in all areas where alterations occur in such manner as to allow clean, continuous service to the existing facilities. Locations of such partitions shall be as agreed to by the Owner and the Architect.
 - 2. Provide temporary doors in partitions as required. Install approved materials to act as framing at all four sides of each door. Provide hardware for the doors as required. Provide automatic closers on all such doors. Temporary partitions are to be removed from the premises when directed. Any damage to walls, base, floors, ceilings caused by installation of temporary partitions shall be properly repaired to satisfaction of the Construction Manager at the expense of the General Contractor.
 - 3. Partitions shall have all joints at floors, walls and ceilings taped securely and with weatherstripping and proper "sweeps" at doors, all to prevent dust entering adjacent occupied or finished areas.
- G. Environmental Protection: Provide protection, operate temporary facilities and conduct construction in ways and by methods that comply with environmental regulations, and minimize the possibility that air, waterways and subsoil might be contaminated or polluted, or that other undesirable effects might result. Avoid use of tools and equipment which produce harmful noise. Restrict use of noise making tools and equipment to hours that will minimize complaints from persons or firms near the site.

1.26 OPERATION, TERMINATION AND REMOVAL

- A. Supervision: Enforce strict discipline in use of temporary facilities. Limit availability of temporary facilities to essential and intended uses to minimize waste and abuse.
- B. Maintenance: Maintain facilities in good operating condition until removal. Protect from damage by freezing temperatures and similar elements.
 - 1. Protection: Prevent water filled piping from freezing. Maintain markers for underground lines. Protect from damage during excavation operations.
- C. Termination and Removal: Unless the Architect requests that it be maintained longer, remove each temporary facility when the need has ended, or when replaced by authorized use of a permanent facility, or no later than Substantial Completion. Complete or, if necessary, restore permanent construction that may have been delayed because of interference with the temporary facility. Repair damaged Work, clean exposed surfaces and replace construction that cannot be satisfactorily repaired.

END OF SECTION

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Cutting, fitting and patching, including excavation and backfill, required to:
 - 1. Make several parts fit together properly.
 - 2. Uncover portions of the Work to provide for installation of ill-timed work.
 - 3. Remove and replace defective work.
 - 4. Remove and replace work not conforming to requirements of Contract Documents.
 - 5. Remove samples of installed work as specified for testing.
 - 6. Provide routing penetrations for all work shown or otherwise required by all Contracts.
 - 7. To complete the work of this contract within the building and outside the building.
 - 8. All Contractors to review the complete set of drawings to better understand the extent of demolition, cutting and patching required and the interface with other Contractor's work.

1.02 RELATED REQUIREMENTS

- A. Document 00701 - General Conditions: Basic responsibilities of parties.
- B. Section 01 1100 - Summary of Project
- C. Section 01 3100 - Project Coordination

1.03 SUBMITTALS

- A. Submit a written request to the Architect and copy project representative, if applicable, well in advance ten (10) days of executing any cutting or alteration which affects:
 - 1. The work of the Owner or any separate contractor.
 - 2. The structural value or integrity of any element of the Project.
 - 3. The integrity of effectiveness of weather-exposed or moisture-resistant elements of systems.
 - 4. The efficiency, operational life, maintenance or safety of operational elements.
 - 5. The visual qualities of sight-exposed elements.
- B. The request shall include:
 - 1. Identification of the Project.
 - 2. Description of the affected work.
 - 3. The necessity for cutting, alteration or excavation.
 - 4. The effect on the work of the Owner or any separate contractor, or on the structural or weatherproof integrity of the Project.
 - 5. Description of the proposed work:
 - a. The scope of cutting, patching, alteration, or excavation.
 - b. The trades who will execute the work.
 - c. Products proposed to be used.
 - d. The extent of refinishing to be done.
 - 6. Alternatives of cutting and patching.
 - 7. Cost proposal, when applicable.

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PAGE 2

8. Written permission of any separate contractor whose work will be affected.
 9. Where cutting and patching involves structural elements do not cut in a manner that could damage their load carrying capacity or load deflection ratio without first submitting details and engineering calculations for the work to the Architect for review and acceptance.
- C. Should conditions of the work or the schedule indicate a change of products from the original installation, Contractor shall submit a request for substitution as specified in these specifications.
- D. Submit a written notice to the Architect designating the date and the time the work will be uncovered.

1.04 CUTTING AND PATCHING

- A. Definition - For the purpose of this work, cutting is "the removal of portions of the existing building, its equipment, or site elements with extreme care to preserve the finish or the function of that portion which remains, because the cutting is done with the knowledge and intention that this remaining portion will be patched or restored to approximately its previous condition".
1. "Cutting and Patching" is, therefore, distinguished from "selective demolition for alteration work" in that demolition is the complete wrecking or removal of existing elements of the building and subsequent alteration or change in that which remains. Refer to Section 01 9000 – Selective Demolition for Alteration Work.
- B. Coordination
1. The Mechanical, Electrical, and Plumbing Contractors shall be responsible for the timely and accurate layout of their work that involves cutting of surfaces of the existing building, and shall provide their appropriate cutting and patching subcontractor with this information.
 2. The Mechanical, Electrical and Plumbing contractors shall employ and pay a qualified subcontractor for all cutting and opening support operations over 100 square inches of surfaces including walls, floors, ceilings, and roofs as required to complete their Work. All voids between piping and conduit and the sides of openings drilled shall be packed with fire rated insulation and sealant material to reestablish the integrity of the walls fire rating. If openings cut are larger than required, repair the opening tight to the piping, sleeve or conduit with matching materials to maintain the integrity of the wall or partition. Provide closures or escutcheon plates to close openings around pipes, conduit and other drilled openings after patch work is complete and sealed. The General Contractor shall fill all depressions in concrete slabs revealed after cutting or demolition operations of his work and the respective Mechanical, Electrical, and Plumbing trades will fill theirs; note especially depressions in concrete floor slabs where metal stud or concrete block wall have been removed. The General Construction Contractor shall provide matching deck, insulation material, etc. to close abandoned roof openings. The Mechanical, Electrical, and Plumbing Contractors shall employ and pay a qualified Roofing Contractor for infilling of their work.
 3. All openings in walls shall include installation of headers or lintels to support wall material and masonry above opening as part of each Prime Contractor's work.

PART 2 PRODUCTS

2.01 MATERIALS

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- A. New finish materials and installation shall comply in every respect with qualities and standards specified.
- B. Where salvaged materials are indicated, the contractor may at his option, substitute new, matching materials. No salvaged materials shall be installed without prior approval of Architect. Where sufficient salvageable materials are not available to properly cover designated areas, contractor shall supplement quantities with matching new materials.
- C. Patching of existing surfaces shall be done with surface materials, backing materials and backup supporting systems that are similar to the existing materials in the area of the patching. Final surfaces shall be similar in material, appearance and texture, and shall be flush with surrounding surfaces.

PART 3 EXECUTION

3.01 INSPECTION

- A. Inspect conditions of the project, including elements subject to damage or to movement during cutting and patching.
- B. After uncovering work, inspect the conditions affecting the installation of Products, or performance of the work.
- C. Report unsatisfactory or questionable conditions to the Architect in writing; do not proceed with the work until the Architect has provided further instructions.

3.02 PREPARATION

- A. All Prime Contractors are to coordinate with Division 2 specifications and related drawings prior to any work. Removal of any hazardous or asbestos containing materials must take place prior to any other work.
- B. Provide adequate temporary support as necessary to assure the structural value or integrity of the affected portion of the Work.
- C. Provide devices and methods to protect other portions of the Project from damage.
- D. Provide protection from the elements for that portion of the Project which may be exposed by cutting and patching work and maintain excavations free from water.

3.03 PERFORMANCE

- A. Execute cutting and patching by methods which will prevent damage to other work, and will provide proper surfaces to receive installation of repairs.
- B. Execute excavating and backfilling by methods which will prevent settlement or damage to other work.
- C. Where possible, employ the original installer or fabricator to perform cutting and patching for:
 - 1. Weather-exposed or moisture-resistant elements.
 - 2. Sight-exposed finished surfaces.
- D. Execute fitting and adjustment of products to provide a finished installation to comply with specified products, functions, tolerances and finishes.

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- E. Restore work which has been cut or removed; install new products to provide complete Work in accord with requirements of Contract Documents.
- F. Fit work airtight to pipes, sleeves, ducts, conduit and other penetrations through surfaces.
- G. At penetrations of fire rated walls, partitions, ceilings or floor construction, completely seal voids with fire rated material, to the full thickness of the penetrated element.
- H. Remove debris and abandoned items from areas and from concealed spaces.
- I. Close openings in exterior surfaces to protect existing work from weather and extremes of temperature and humidity.
- J. Where new work abuts or aligns with existing, provide a smooth and even transition. Patch work to match existing adjacent work in texture and appearance.
- K. Repair surface and remove surface finishes to provide installation of new work and finishes. Refinish entire surfaces as necessary to provide an even finish to match adjacent finishes.
 - 1. For continuous surfaces, refinish to nearest intersection.
 - 2. For an assembly, refinish the entire unit.

**** END OF SECTION ****

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Dust Control.
- B. Erosion and Sediment Control.
- C. Rubbish Removal.
- D. Water Control.
- E. Indoor Air Contaminants.
- F. Noise Control.

1.02 RELATED REQUIREMENTS

- A. Section 01 1100 - Summary of Project: Contractor use of premises. Maintenance of operations.
- B. Section 01 3100 - Project Coordination.
- C. Section 01 5000 - Temporary Facilities.
- D. Section 01 5600 - Enclosures and Controls
- E. Section 01 1101 NYSED Uniform Safety Standards

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

3.01 DUST CONTROL

- A. Execute Work by methods to minimize raising dust from construction operations. Provide positive means to prevent air-borne dust from dispersing into atmosphere or migrating into occupied areas or work areas. Use water or other dampening agents.

3.02 EROSION AND SEDIMENT CONTROL

- A. Plan and execute construction by methods to control surface drainage from cuts and fills, from borrow and waste disposal areas. Prevent erosion and sedimentation.
- B. Minimize amount of bare soil exposed at one time.
- C. Provide temporary measures such as berms, dikes, straw bales, fabric dams, and drains, to prevent water flow.
- D. Construct fill and waste areas by selective placement to avoid erosive surface silts or clays.

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- E. Periodically inspect earthwork to detect evidence of erosion and sedimentation; promptly apply corrective measures.

3.03 RUBBISH REMOVAL

- A. All Contractors and their subcontractors shall clean up the debris resulting from work of all Contracts at least once a day and more often if the debris interferes with the work of others or presents a fire hazard, this will be strictly enforced. Place debris in dumpster or in a location as directed by project representative. Leave work areas broom clean. Large amounts of debris must be removed by using enclosed chutes. There shall be no movement of debris thru corridors when the building is occupied. No materials shall be dropped or thrown outside the walls of the building.
- B. All Prime Contractor shall supply and pay for their dumpster(s) and the dumping of dumpsters to remove debris as a result of the work of each contract from the site at least once a week and more often if the debris presents a fire hazard or where temperatures are above 80°. Burning of waste material will not be permitted. See Section 01 5000 - 3.06.
- C. Debris shall be contained in a steel dumpster of adequate size to avoid overflow or blowing of debris until removed from the site.

3.04 WATER CONTROL

- A. All construction work areas shall be maintained free of water accumulations from either ground water seepage or precipitation.
- B. The Contractor will divert all water away from any newly exposed or existing exterior building openings. Any intrusion of water into the building and systems will be removed and restored by a certified cleanup contractor employed by the prime Contractor at no cost to the Owner.
- C. All Contractors shall be responsible for his portions of the work outside the building.
- D. The Contractor shall provide, maintain, and operate pumps of adequate capacity required to maintain excavations, pits, trenches and depressions free of water accumulation at any time and as necessary to permit the proper installation of the work. Disposal of pumped water shall be done with due respect to the rights of adjoining properties. Provide water barriers as required to protect site from soil erosion.
- E. All costs in connection with the removal of water above provided for shall be borne by the responsible contractor.

3.05 INDOOR AIR CONTAMINANTS

- A. Follow all requirements of Sections 02 8314 as they apply to specific surfaces and operations for lead paint disturbance. All contractors who come in contact with lead must be certified.
- B. Environmental Concerns - Some children, adults and construction workers suffer from chemical sensitivities or allergies stimulated by certain construction materials and equipment. Contractors shall not knowingly install materials, insulations, adhesives, products containing toxic solvents, products producing long-life out-gassing or other potentially hazardous materials in this building. Contractors shall not install building products that have been identified by governmental agencies as hazardous or declared illegal to be used in building construction. The contractor shall be responsible for the

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PAGE 3

control of chemical fumes, gases, and other contaminants produced by welding, gasoline, or diesel engines, roofing, paving, painting, etc. to ensure they do not enter occupied portions of the building or air intakes. If necessary schedule work that necessitates creation of these fumes when the building or building area is not occupied. The Owner will not entertain an extra for time or cost if this work scheduling is required.

- C. 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. The Contractor shall install devices at the construction site, during and following his construction operation to prevent the buildup of indoor air contaminants due to discharge or generation of noxious, toxic and pollutant type substances resulting from the construction operations or materials. It is important to protect the occupants and the workmen.
1. Contractors shall construct enclosures to separate work areas from occupied areas of the building, including blocking off registers and grills to isolate work areas.
 2. Contractors shall purge work areas and occupied areas of contaminated air by exhausting inside air and introducing outside air where possible. Permanent air handling components of the building can be used only so long as this use will not contaminate other areas of the building, preferably use free standing, portable fan units furnished by the contractors, to increase the ventilation within the building. See Section 01 5000 - Temporary Heating and Ventilation.
 3. All contractors installing materials or mechanical and electrical equipment that produce time-delay release of contaminants, “off-gassing”, shall operate systems, isolate contaminate producing materials, purge isolated areas, and take other measures that assist the bake-out the building and its components of odors and irritants prior to occupancy. See Section 01 5000 - Temporary Heating and Ventilation.
 4. Contractors shall submit Material Safety Data Sheets (MSDS) for any products or materials known or suspected to cause indoor air odors, irritation or contamination to workers or occupants.
 5. There shall be no smoking in the building or on any portion of the site during construction operations.

3.06 NOISE ABATEMENT

- A. Construction operations shall not produce noise in excess of 60 dba in or adjacent to occupied spaces.

**** END OF SECTION ****

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1.01 REQUIREMENTS INCLUDED

- A. Products.
- B. Transportation and Handling.
- C. Storage and Protection.
- D. NY State Department of Education Requirements.
- E. Material / Subcontractor List.
- F. Product Options.
- G. Equivalent Products and Substitutions.

1.02 RELATED REQUIREMENTS

- A. Section 00201 – AIA Document A701 – Instruction to Bidders:
- B. Section 01 1100 - Summary of Project: Owner-furnished Products.
- C. Section 01 4500 - Quality Control: Product quality monitoring.
- D. Section 01 7700 - Contract Closeout: Operation and maintenance data.

1.03 PRODUCTS

- A. Products: Means new material, machinery, components, equipment, fixtures, and systems forming the Work. It does not include machinery and equipment used for preparation, fabrication, conveying and erection of the Work. Products may also include existing materials or components required for reuse.

1.04 TRANSPORTATION AND HANDLING

- A. Transport products by methods to avoid product damage; and in accordance with manufacturer's instructions; deliver in undamaged condition in manufacturer's unopened containers or packages, dry.
- B. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage.

1.05 STORAGE AND PROTECTION

- A. Store and protect products in accordance with manufacturer's instructions, with seals and labels intact and legible. Store sensitive products in weather-tight enclosures; maintain within temperature and humidity ranges required by manufacturer's instructions.
- B. For exterior storage of fabricated products, place on sloped supports above ground. Cover products subject to deterioration with impervious sheet covering; provide ventilation to avoid condensation and degradation of products.

01 6000 – MATERIAL AND EQUIPMENT
PAGE 2

- C. Store loose granular materials on solid surfaces in a well-drained area; prevent mixing with foreign matter.
- D. Arrange storage to provide access for inspection. Periodically inspect to ensure products are undamaged and are maintained in acceptable condition.
- E. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage.

1.06 NY STATE EDUCATION DEPARTMENT REQUIREMENTS

- A. All construction materials shall be stored in a safe and secure manner.
- B. 6' high chain link fences with gates around construction supplies or debris shall be provided and maintained. Gates shall always be locked unless a worker is in attendance to prevent unauthorized entry.

1.07 MATERIAL/SUBCONTRACTOR LIST

- A. Not later than 5 business days from the date bids are received, the three lowest bidders shall submit a complete list of major subcontractors and products proposed for use, with name of manufacturer, trade name, and model number of each product.
- B. Use Contractor Sub List included in Specifications.
- C. Submission and review of the list will be made prior to award of contract.

1.08 PRODUCT OPTIONS – See Instructions to Bidders and Supplementary Conditions sections.

- A. Products Specified by Reference Standards or by description only: any products meeting those standards.
- B. Products specified by naming one or more manufacturers with a provision for Approved Equal: Submit a request for substitution for any manufacturer not specifically named per submission requirements set forth in the Supplementary General Conditions.
- C. Products specified by naming several manufacturers: Submit products ONLY of the listed manufacturers meeting the listed specifications.

1.09 EQUIVALENT PRODUCTS & SUBSTITUTIONS

- A. Proposals for equivalent and substituted products shall be submitted by the Contractor under the conditions set forth in the Instructions to Bidders, Specification Section 01 3300, and Supplementary General Conditions.

**** END OF SECTION ****

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Surveying services to be included in the work.
- B. Site Work Contractor and General Contractor will identify control points, property line corner stakes, and contract limit lines required for their work.

1.02 RELATED REQUIREMENTS

- A. Document 00701 – General Conditions: Basic requirements.
- B. Section 00801 – Supplementary Conditions
- C. Section 01 1100 - Summary of Project
- D. Section 01 7700 – Contract Closeout: Record documents.

1.03 QUALITY CONTROL

- A. Land Surveyor: The Contractor shall employ a surveyor registered in the State of New York and acceptable to the Architect. That Contractor's surveyor shall layout all, new roads and walks, and signs.

1.04 SUBMITTALS

- A. Submit name, address, and telephone number of Surveyor before starting survey work.
- B. On request, submit documentation verifying accuracy of survey work.

1.05 PROJECT RECORD DOCUMENTS

- A. Maintain complete, accurate log of control and survey work as it progresses.

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

3.01 INSPECTION

- A. Verify locations of survey control and reference points prior to starting work. Promptly notify Architect of any discrepancies discovered.

3.02 SURVEY CONTROL AND REFERENCE POINTS

- A. Protect survey control and reference points prior to starting work; preserve permanent reference points during construction. Make no changes without prior written notice to the Architect.

01 7123 – FIELD ENGINEERING
PAGE 2

- B. Promptly report to Architect the loss or destruction of any reference point or relocation required because of changes in grades or other reasons. Replace dislocated survey control points based on original survey control.
- C. Control datum for survey is that shown on the Drawings.

3.03 SURVEY REQUIREMENTS

- A. Establish a minimum of four permanent benchmarks on each site, referenced to established control points. Record locations, with horizontal and vertical data, on Project Record Documents.
- B. Establish elevations, lines, and levels, locate and lay out by instrumentation and similar appropriate means:
 - 1. Foundations, additions, slab corners, and ground floor elevations.
 - 2. Concrete slab and ramp surfaces.
 - 3. Paving, curbing, and sidewalk layout and elevations.
 - 4. Rim elevations for structures
 - 5. Tank locations and elevation.

**** END OF SECTION ****

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Format and content of manuals.
- B. Instruction of Owner's personnel.
- C. Schedule of submittals.

1.02 RELATED SECTIONS

- A. Section 01 3300 - Submittals: Submittals procedures, Shop drawings, and product data.
- B. Section 01 4500 - Quality Control: Manufacturer's instructions.
- C. Section 01 4500 - Quality Control: Test and balance reports.
- D. Section 01 7500 - Starting of Systems: Systems Instruction and demonstration.
- E. Section 01 7700 - Contract Closeout: Contract Closeout Procedures.
- F. Section 01 7400 - Warranties and Bonds.
- G. Individual Specifications Sections: Specific requirements for operation and maintenance data.

1.03 QUALITY ASSURANCE

- A. Prepare instructions and data by personnel experienced in maintenance and operation of described products.

1.04 FORMAT

- A. Prepare data in the form of an instructional manual.
- B. Binders: Commercial quality, 8-1/2 x 11 inch three-ring binders with hardback, cleanable, plastic covers; two inch maximum ring size. When multiple binders are used, correlate data into related consistent groupings.
- C. Cover: Identify each binder with typed or printed title OPERATION AND MAINTENANCE INSTRUCTIONS; list title of Project [and separate building]; identify subject matter of contents.
- D. Arrange content by systems under section numbers and sequence of Table of Contents of this Project Manual.
- E. Provide tabbed fly leaf for each separate product and system, with typed description of product and major component parts of equipment.
- F. Text: Manufacturer's printed data, or typewritten data on 20 pound paper.
- G. Drawings: Provide with reinforced punched binder tab. Bind in with text; fold larger drawings to size of text pages.

1.05 CONTENTS, EACH VOLUME

- A. Table of Contents: Provide title of Project; names, addresses, and telephone numbers of Architect and Engineer, and Contractor with name of responsible parties; schedule of products and systems, indexed to content of the volume.
- B. For Each Product or System: List names, addresses and telephone numbers of Subcontractors and suppliers, including local source of supplies and replacement parts.
- C. Product Data: Mark each sheet to clearly identify specific products and component parts, and data applicable to installation. Delete inapplicable information.
- D. Drawings: Supplement product data to illustrate relations of component parts of equipment and systems, to show control and flow diagrams. Do not use Project Record Documents as maintenance drawings.
- E. Type Text: As required to supplement product data. Provide logical sequence of instructions for each procedure, incorporating manufacturer's instructions specified in Section 01 4500.
- F. Warranties and Bonds: Bind in copy of each as specified in Section 01 7400.

1.06 MANUAL FOR MATERIALS AND FINISHES

- A. Building Products, Applied Materials, and Finishes: Include product data, with catalog number, size, composition, and color and texture designations. Provide information for re-ordering custom manufactured products.
- B. Instructions for Care and Maintenance: Include manufacturer's recommendations for cleaning agents and methods, precautions against detrimental agents and methods, and recommended schedule for cleaning and maintenance.
- C. Moisture Protection and Weather Exposed Products: Include product data listing applicable reference standards, chemical composition, and details of installation. Provide recommendations for inspections, maintenance, and repair.
- D. Additional Requirements: As specified in individual product specification Sections.
- E. Provide a listing in Table of Contents for design data, with tabbed fly sheet and space for insertion of data.

1.07 MANUAL FOR EQUIPMENT AND SYSTEMS

- A. Each Item of Equipment and Each System: Include description of unit or system, and component parts. Identify function, normal operating characteristics, and limiting conditions. Include performance curves, with engineering data and tests, and complete nomenclature and commercial number of replaceable parts.
- B. Panel board Circuit Directories: Provide electrical service characteristics, controls and communications.
- C. Include color coded wiring diagrams as installed.

01 7300 – OPERATION AND MAINTENANCE DATA
PAGE 3

- D. Operating Procedures: Include start-up, break-in, and routine normal operating instructions and sequences. Include regulation, control, stopping, shut-down, and emergency instructions. Include summer, winter, and any special operating instructions.
- E. Maintenance Requirements: Include routine procedures and guide for trouble-shooting; disassembly, repair, and reassembly instructions; and alignment, adjusting, balancing, and checking instructions.
- F. Provide servicing and lubrication schedule, and list of lubricants required.
- G. Include manufacturer's printed operation and maintenance instructions.
- H. Include sequence of operation by controls manufacturer.
- I. Provide original manufacturer's parts list, illustrations, assembly drawings, and diagrams required for maintenance.
- J. Provide control diagrams by controls manufacturer as installed.
- K. Provide Contractor's coordination drawings, with color coded piping diagrams as installed.
- L. Provide charts of valve tag numbers, with location and function of each valve, keyed to flow and control diagrams.
- M. Provide list of original manufacturer's spare parts, current prices, and recommended quantities to be maintained in storage.
- N. Include test and balancing reports as specified in Section 01 4000.
- O. Additional Requirements: As specified in individual product specification Sections.
- P. Provide a listing in Table of Contents for design data, with tabbed fly sheet and space for insertion of data.

1.08 INSTRUCTION OF OWNER PERSONNEL

- A. Before final inspection, coordinate with the Owner's Representative on a schedule of instruction with the Owner's end users. Instruct Owner's designated personnel in operation, adjustment, and maintenance of products, equipment, and systems, at agreed upon times.
- B. For equipment requiring seasonal operation, perform instructions for other seasons within six months.
- C. Use operation and maintenance manuals as basis for instruction. Review contents of manual with personnel in detail to explain all aspects of operation and maintenance.
- D. Prepare and insert additional data in Operation and Maintenance Manual when need for such data becomes apparent during instruction.
- E. The Contractor shall instruct or have arrangements made to have the owner's personnel instructed in the following systems.

<u>ITEM</u>	<u>HOURS</u>
Fuel monitoring systems	6
All Fuel tank systems	8

01 7300 – OPERATION AND MAINTENANCE DATA
PAGE 4

Individual Specification Section Requirements as required

1.09 SUBMITTALS

- A. Submit two copies of preliminary draft or proposed formats and outlines of contents before start of Work. Architect / Engineer will review draft and return one copy with comments.
- B. For equipment, or component parts of equipment put into service during construction and operated by Owner, submit documents within ten days after acceptance.
- C. Submit one copy of completed volumes in final form 15 days prior to final inspection. Copy will be returned after final inspection, with Architect / Engineer comments. Revise content of documents as required prior to final submittal.
- D. Submit three copies of revised volumes of data in final form within ten days after final inspection.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

NOT USED

**** END OF SECTION ****

01 7400 – WARRANTIES AND BONDS
PAGE 1

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Preparation and submittal of warranties and bonds.

1.02 RELATED SECTIONS

- A. Section 00100 - Invitation to Bid: Bid Bonds.
- B. Section 00701 – AIA Document A201 – General Conditions: Performance Bond and Labor and Material Payment Bonds, Warranty, and Correction of Work.
- B. Section 01 7700 - Contract Closeout: Contract closeout procedures.
- D. Section 01 7300 – Operation and Maintenance Data
- E. Individual Specifications Sections: Warranties required for specific products or Work.

1.03 FORM OF SUBMITTALS

- A. Bind in commercial quality, 8-1/2 x 11 inch, three-ring side binders with hardback, cleanable, plastic covers.
- B. Label cover of each binder with typed or printed title WARRANTIES AND BONDS, with title of Project; name, address and telephone number of Contractor and equipment supplier; and name of responsible principal.
- C. Table of Contents: Neatly typed, in the sequence of the Table of Contents of the Project Manual, with each item identified with the number and title of the specification Section in which specified, and the name of the product or work item.
- D. Separate each warranty or bond with index tab sheets keyed to the Table of Contents listing. Provide full information, using separate typed sheets as necessary. List Subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.

1.04 PREPARATION OF SUBMITTALS

- A. Obtain warranties and bonds, executed in duplicate by responsible Subcontractors, suppliers, and manufacturers, within thirty days after completion of the applicable item or work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until the Date of Substantial Completion is determined.
- B. Verify that documents are in proper form, contain full information, and are notarized.
- C. Co-execute submittals when required.
- D. Retain warranties and bonds until time specified for submittal.

1.05 TIME OF SUBMITTALS

- A. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within ten days after acceptance.

**01 7400 – WARRANTIES AND BONDS
PAGE 2**

- B. Make other submittals within ten days after Date of Substantial Completion, prior to final Application for Payment.
- C. For items of Work when acceptance is delayed beyond Date of Substantial Completion, submit within ten days after acceptance, listing the date of acceptance as the beginning of the warranty period.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

NOT USED

****END OF SECTION****

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Starting systems.
- B. Demonstration and instructions.
- C. Testing, adjusting, and balancing.

1.02 RELATED SECTIONS

- A. Section 01 4500 - Quality Control: Manufacturers field reports.
- B. Section 01 7300 - Operation and Maintenance Data.
- C. Section 01 7700 - Contract Closeout

1.03 STARTING SYSTEMS

- A. Coordinate schedule for start-up of various equipment and systems.
- B. Notify Architect ten days prior to start-up of each item.
- C. Verify that each piece of equipment or system has been checked for proper lubrication, drive rotation, belt tension, control sequence, or other conditions which may cause damage.
- D. Verify that tests, meter readings, and specified electrical characteristics agree with those required by the equipment or system manufacturer.
- E. Verify wiring and support components for equipment are complete and tested.
- F. Execute start-up under supervision of responsible manufacturer's representative and Contractors' personnel in accordance with manufacturers' instructions.
- G. When specified in individual specification Sections, require manufacturer to provide authorized representative to be present at site to inspect, check and approve equipment or system installation prior to start-up, and to supervise placing equipment or system in operation.

1.04 DEMONSTRATION AND INSTRUCTIONS

- A. Demonstrate operation and maintenance of products to Owner's personnel two weeks prior to date of Substantial Completion.
- B. For equipment or systems requiring seasonal operation, perform demonstrations for other season within six months.
- C. Utilize operation and maintenance manuals as basis for instruction. Review contents of manual with Owners' personnel in detail to explain all aspects of operation and maintenance.

**01 7500 – STARTING OF SYSTEMS
PAGE 2**

- D. Demonstrate start-up, operation, control, adjustment, trouble-shooting, servicing, maintenance, and shutdown of each item of equipment at scheduled times, at equipment location.
- E. Prepare and insert additional data in operations and maintenance manuals when need for additional data becomes apparent during instruction.

1.05 TESTING, ADJUSTING AND BALANCING

- A. Contractor shall employ and pay for services of an independent firm to perform testing, adjusting and balancing.
- B. The independent firm will perform services specified in individual sections.
- C. Reports will be submitted by the independent firm to the Architect indicating observations and results of tests and indicating compliance or non-compliance with specified requirements and with the requirements of the Contract Documents.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

NOT USED

**** END OF SECTION ****

**01 7600 – PROTECTION OF INSTALLED WORK,
EXISTING BUILDINGS, AND EXISTING SITE FEATURES
PAGE 1**

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Protection for products after installation & for existing elements of the site and building.
- B. Fire Prevention.

1.02 RELATED REQUIREMENTS

- A. Section 01 1100 - Summary of Project.
- B. Section 01 5000 - Temporary Facilities:
- C. Section 01 7700 - Contract Closeout: Removal of temporary protection.
- D. Section 01 9000 – Selective Demolition for Alteration Work.
- E. Individual Sections: Specific protection for installed products.

PART 2 PRODUCTS

NOT USED

PART 3 EXECUTION

3.01 PROTECTION

- A. Protect installed products and control traffic in the immediate area to prevent damage from subsequent operations.
- B. Provide protective coverings at walls, projections, corners, and jambs, sills, & soffits of openings in and adjacent to traffic areas.
- C. Protect finished surfaces from traffic, dirt, wear, and damage or movement of heavy objects:
- D. Protect roofed surfaces:
- E. Protection of site amenities:
 - 1. Protect pavement, drives, parking areas and walkways.
 - 2. Protect curbs, concrete stairs, masonry walls and handrails.
 - 3. Protect seeded and planted areas.
 - 4. Protect light poles and pole bases.
- F. Protection of mechanical and electrical items:

3.02 PROTECTION OF EXISTING SITE FEATURES

**01 7600 – PROTECTION OF INSTALLED WORK,
EXISTING BUILDINGS, AND EXISTING SITE FEATURES
PAGE 2**

- A. Exterior walks, steps, roadways, parking areas, curbs, paved surfaces, planters, plant materials, playground equipment, and other existing site features shall be properly protected from damage during the operations of demolition or new construction.
- B. Protect concrete curbs with planks in the path of vehicle travel. Paved surfaces shall be protected from indentation or gouging where heavy equipment is moved or materials stores. Avoid damaging seeded lawn areas, cracking concrete work.

3.03 REPAIR AND REPLACEMENT OF DAMAGED ITEMS

- A. All interior surfaces of walls, floors and ceilings damaged during the work of the contract shall be repaired or replaced to bring substrate and surface finish back to existing condition. All repairs shall match existing surrounding surfaces. Damage to doors, door frames, bases and wainscots shall be similarly repaired or replaced.
- B. Mechanical and Electrical items damaged during the work of this contract shall be replaced or repaired in a manner that permits the system to function properly as it did before the damage. Both mechanical operation and visual appearances shall be restored.
- C. All curb and concrete work damaged shall be replaced. All paved areas damaged shall be repaired in a manner leaving repaired areas flush and unnoticeable from adjacent areas.
- D. Plant material and grass (see that they are established) areas damaged during construction operations shall be restored. Replace plant material and re-seed grass areas after leveling topsoil.
- E. At the end of the work, remove all construction and dust barriers, damaged material and equipment not intended to remain on the site and dispose of it in a lawful manner.
- F. Repair and replacement of damaged items shall be by the respective contractors at no cost to the Owner.

3.04 FIRE PREVENTION

- A. It is the Contractor's responsibility to take all necessary precautions to prevent fire from starting due to construction operations.
- B. Each Contractor shall provide hand-carried, portable, UL-rated, Class ABC fire extinguishers for temporary offices and similar spaces. In other locations and in all work zones, provide hand-carried, portable, UL-rated, Class ABC, dry-chemical extinguishers or a combination of extinguishers of NFPA-recommended classes for the exposures. Comply with NFPA 10 and NFPA 241 for classification, extinguishing agent, and size required by location and class of fire exposure.

**** END OF SECTION ****

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Closeout procedures
- B. Final cleaning.
- C. Adjusting.
- D. Project record documents.
- E. Spare parts and maintenance materials.

1.02 RELATED SECTIONS

- A. Section 01 7500 - Starting of Systems: System start-up, testing, adjusting, and balancing.
- B. Section 01 7300 - Operation and Maintenance Data.
- C. Section 01 7400 - Warranties and Bonds.

1.03 CLOSEOUT PROCEDURES

- A. Submit written certification that Contract Documents have been reviewed, Work has been inspected, a Contractor's punch list prepared and items corrected or completed, and that Work is complete in accordance with Contract Documents and ready for Owner/Architect's punch list. Once this document is in the hands of the contractor, the contractor has 45 days to complete the work enumerated.
- B. Provide submittals to Architect that are required by governing or other authorities.
- C. Submit affidavits, certificates and other administrative requirements to Architect. See Supplementary General Conditions - Paragraph 9.10.
- D. Submit final Application for Payment identifying total adjusted Contract Sum, previous payments, and sum remaining due.

1.04 FINAL CLEANING

- A. Execute final cleaning prior to final inspection.
- B. Clean debris from roofs, gutters, downspouts, and drainage systems.
- C. Clean site; sweep paved areas, rake clean landscaped surfaces.
- D. Remove waste and surplus materials, rubbish, and construction facilities from the site.

1.05 ADJUSTING

- A. Adjust operating Products and equipment to ensure smooth and unhindered operation.

1.06 PROJECT RECORD DOCUMENTS

01 7700 – CLOSEOUT PROCEDURES
PAGE 2

- A. Maintain on site one set of the following record documents; record actual revisions to the Work:
 - 1. Contract Drawings.
 - 2. Specifications.
 - 3. Addenda.
 - 4. Change Orders and other Modifications to the Contract.
 - 5. Reviewed shop drawings, product data, and samples.
 - 6. Manufacturer's instruction for assembly, installation, and adjusting.
- B. Store Record Documents separate from documents used for construction.
- C. Record information concurrent with construction progress.
- D. Specifications: Legibly mark and record at each Product section description of actual Products installed, including the following:
 - 1. Manufacturer's name and product model and number.
 - 2. Product substitutions or alternates utilized.
 - 3. Changes made by Addenda and Modifications.
- E. Record Drawings and Shop Drawings: Legibly mark each item to record actual construction including:
 - 1. Measured depths of foundations in relation to finish first floor datum.
 - 2. Measured horizontal and vertical locations of underground utilities and appurtenances, referenced to permanent surface improvements.
 - 3. Measured locations of internal utilities and appurtenances concealed in construction, referenced to visible and accessible features of the Work.
 - 4. Field changes of dimension and detail.
 - 5. Details not on original Contract Drawings such as change order work.
 - 6. Changes made by addenda and modifications.
- F. Delete Architect title block and seal from all documents.
- G. Submit documents to Architect for review prior to claim for final Application for Payment.

1.07 SPARE PARTS AND MAINTENANCE MATERIALS

- A. Provide products, spare parts, maintenance and extra materials in quantities specified in individual specification Sections.

PART 2 – PRODUCTS - NOT USED

PART 3 – EXECUTION - NOT USED

**** END OF SECTION ****

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Form of Submittals.
- B. Preparation of Submittals.
- C. Time of Submittals.

1.02 RELATED SECTIONS

- A. Section 00100 – Advertisement: Bid Bonds
- B. Section 00701 – AIA Document A201 – General Conditions: Performance Bond and Labor and Material, Payment Bonds, Warranty, and Correction of Work
- C. Section 01 7400 – Warranties and Bonds.
- D. Section 01 7700 – Closeout Procedures.
- E. Individual Specifications Sections: Warranties required for specific products or Work.

1.03 FORM OF SUBMITTALS

- A. Provide 2 hard copies and one digital copy (CD / DVD / USB) of submittals.
- B. Bind in commercial quality, 8-1/2 x 11 inch, three-ring side binders with hardback, cleanable, plastic covers.
- C. Label cover of each binder with typed or printed title “CLOSEOUT DOCUMENTS”, with title of Project; name, address and telephone number of Contractor and equipment supplier; and name of responsible principal.
- D. Table of Contents: Neatly typed, in the sequence of the Table of Contents of the Project Manual, with each item identified with the number and title of the specification Section in which specified, and the name of the product or work item.
- E. Separate each warranty or bond with index tab sheets keyed to the Table of Contents listing. Provide full information, using separate typed sheets as necessary. List Subcontractor, supplier, and manufacturer, with name, address, and telephone number of responsible principal.
- F. As-Built drawings to be full size scanned at 300 dpi with the file name corresponding to the drawing name and sheet number. Verify legibility of scan before final formatting.

1.04 PREPARATION OF SUBMITTALS

- A. Obtain warranties and bonds, executed in duplicate by responsible Subcontractors, suppliers, and manufacturers, within thirty days after completion of the applicable item or work. Except for items put into use with Owner's permission, leave date of beginning of time of warranty until the Date of Substantial Completion is determined.
- B. Verify that documents are in proper form, contain full information, and are notarized
- C. Co-execute submittals when required.

**01 7800 – CLOSEOUT SUBMITTALS
PAGE 2**

- D. Retain warranties and bonds until time specified for submittal.

1.05 TIME OF SUBMITTALS

- A. For equipment or component parts of equipment put into service during construction with Owner's permission, submit documents within ten days after acceptance.
- B. Make other submittals within ten days after Date of Substantial Completion.
- C. For items of Work when acceptance is delayed beyond Date of Substantial Completion, submit within ten days after acceptance, listing the date of acceptance as the beginning of the warranty period.
- D. Closeout Submittals will be submitted to Architect and checked for conformity.

PART 2 - PRODUCTS

NOT USED

PART 3 - EXECUTION

NOT USED

**** END OF SECTION****

01 9000 – SELECTIVE DEMOLITION FOR ALTERATION WORK
PAGE 1

PART 1 GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Removal of concrete, paving and other elements where shown on the drawings and required for the work.
- B. Removal of canopy and associated work.
- C. Removal conduit and piping associated with the work.
- D. Other items - see individual specification sections and plans and details on drawings to provide the demolition required to complete the work.
- E. Each building trade shall carefully remove items to be salvaged,

1.02 RELATED REQUIREMENTS

- A. Section 01 5400 - Cutting and Patching.
- B. Section 01 7600 - Protection of Installed Work, Existing Building and Existing Site Features.
- C. Section 02 6500 – Removal of Storage Tanks
- D. Section 02 8213 – Asbestos Abatement
- E. See Division 2 for lead based paint impact on the work of this section. Certification of contractors who come in contact with lead will be required on this project.

1.03 DESCRIPTION OF WORK

- A. The extent of selective demolition work is described, but not limited to, that shown on the drawings and schedules. All demolition as required to accommodate new construction.
- B. Selective demolition includes the complete or partial wrecking of existing elements of the buildings and site, the removal and disposal of all demolished materials off the site and subsequent alteration or change in that which remains to provide a complete project.
- C. It is the intent of this specification that all items indicated for removal or demolition that are site, roofing, windows noted in exterior walls, mechanical or electrical in nature be removed or demolished by the respective site, roofing, general contractor, mechanical or electrical contractors related to that work. That is, each assembly piece of equipment, wiring, piping, ductwork, mechanical supports, controls, sleeves, junction boxes, fixtures, motors, that is mechanical or electrical by trade shall be disconnected, removed from the building and disposed of off the site. Terminating, capping, and blocking off of remaining portions of mechanical and electrical work shall be considered part of this demolition work. Mechanical and electrical contractors shall terminate all utilities to that area of any building in the project being demolished prior to demolition.
- D. Unless noted previously, it is the intent of this specification that all items considered general construction by trade be removed, demolished or altered by the General Contractor. That is, all portions of the building proper, slabs, floors, walls, and ceilings shall be disassembled, demolished, removed from the building and disposed of off the site. All depressions in and

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openings through slabs left exposed in concrete floors following demolition shall be filled as part of this demolition by the General Contractor.

- F. It is the intent of this specification that all related work required to repair areas of demolition to restore surrounding building surfaces to original condition or to prepare sub surfaces to receive finish work be done by qualified subcontractor hired by the mechanical, electrical and plumbing contractors for their work. It is intended that all existing rooms scheduled for demolition or alteration work are to be left, when completed, as finished rooms so that there shall be no visible signs of alteration or patching.

1.04 EXISTING MATERIALS AND FURNISHINGS

- A. Loose equipment and furnishings shall be removed by Owner.
- B. Items to be removed and turned over to the Owner by the Contractors shall be so designated in the documents or the Owner shall provide the contractor a list of such items to be turned over prior to start of demolition.
- C. Items to be salvaged and reused shall be removed and reinstalled by the appropriate contractor.
- D. All other items become the property of the respective contractors. Remove and dispose of properly.

1.05 PROTECTION

- A. In the execution of this work, contractors shall carefully protect and safeguard all parts of the present structure and equipment which are to remain, both as a construction and finish, from any and all damage. They shall be responsible for damage caused by them, by their workmen or by their various subcontractors.

1.06 RELOCATION AND REWORKING OF UTILITIES

- A. All relocation and reworking of utilities shall be scheduled sufficiently in advance with other contractors and the Owner to permit optimum coordination and minimum outage of services to the existing building. All connections requiring shutdown of services shall be executed as quickly as possible. Coordinate outage schedule with Owner's Representative.

PART 2 PRODUCTS

2.01 MATERIALS

- A. New materials and installation shall comply in every respect with qualities and standards specified in the Division following.

2.02 SALVAGE

- A. Where salvage materials are indicated, contractor may at his option substitute new, matching materials. No salvage materials shall be installed without prior inspection and approval of the Owner's Representative. Where sufficient salvageable material is unavailable to properly cover designated areas, Contractors shall supplement quantities with matching new materials.

2.03 RELOCATION

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- A. Items indicated for relocation shall be reinstalled in a manner at least equal to the original installation. Supply fasteners, mounting cleats, brackets, closure strips, etc., as necessary for a complete and finished installation.

PART 3 EXECUTION

3.01 INSPECTION

- A. Inspect structures prior to start and notify Architect in writing of any conditions detrimental to the execution of the work. Photograph existing damage which could be misconstrued as damage resulting from the work of this contract. State location and date of photograph and file with Owner's Representative prior to starting work.

3.02 DEMOLITION

- A. Demolish completely to the extent indicated on drawings, remove from the site and disposed of in a lawful manner. Use such methods as required to complete the work within the limitations of local governing regulations and so as not to damage the parts of construction to remain.

3.03 CONCEALED OBSTRUCTIONS

- A. If unanticipated mechanical, electrical or structural elements which conflict with the intended function of the design are encountered, the contractor shall investigate and measure the nature and extent of the conflict. Report this to the Owner's Representative and Architect, in written detail. The Architect shall provide alternative courses of action, obtain from the Contractors cost estimates for changes that may be necessary in the work or issue other direction to overcome the obstacle and keep the work progressing on schedule.

3.04 EXISTING FINISHES

- A. Protect existing finishes and have clean transition from new items to existing.

**** END OF SECTION ****

PART 1 - GENERAL

1.01 DESCRIPTION OF WORK

- A. The Contractor shall furnish all labor, material, tools, transportation and equipment necessary to remove and dispose of the existing Underground Storage Tanks (UST), associated electrical, structural, and product equipment, (e.g., dead men, anchor straps, piping, manways, and piping, and pumps, if present. This section specifies requirements for the environmental and tank assessment, permitting, removal and disposal of the [UST(s) and is intended to supplement the construction/installation specifications. Generally, the work shall include, but not be limited to:
1. File all necessary notices, obtain all permits and licenses, and pay for all governmental taxes, fees, and other costs in connection with the work. Obtain all necessary approvals of all governmental departments having jurisdiction.
 2. Characterize (any testing that may be required by a disposal facility), containerize, remove, and properly dispose of residual fuels from the designated tanks and appurtenant piping.
 3. Clean, remove, and dispose of [UST(s) and/or AST(s)], and appurtenant piping for the tank(s). The work shall include the removal and proper disposal of fuel and residual in the tanks and associated piping between the tanks and the building.
 4. Perform all sampling and testing required to properly profile the material for waste disposal. This shall also include all testing required by the disposal or recycling facility.
 5. All costs for the testing shall be borne by the Contractor.
 6. Coordinate with the Engineer and Licensed Site Professional (LSP) relative to the collection, sampling and analysis of impacted soils. Coordinate with the Architect, to prepare all manifests and/or Bills of Lading for all contaminated materials removed from the Site. Original documents to be provided to the Architect and copies to the Owner.
 7. Comply with the Contractor's submitted Health and Safety Plan.

1.02 RELATED WORK

- A. Section 03 3000 – Concrete work
- B. Section 31 2201 – Site Earthwork
- C. Section 22 7023 – Metal canopy
- D. Section 33 5600 - Fuel storage tank

1.03 REFERENCES

The publications listed below form a part of this specification to the extent referenced. The publications are referenced in text by basic designation only. The list provided below is not intended to be all inclusive of each regulation prevailing over the work. The latest version of the document listed shall govern the work performed.

- A. OSHA Hazard Communication Standard, 29 CFR 1910.
- B. National Fire Prevention Association (NFPA) 326, Standard for Safeguarding of Tanks and Containers for Entry, Cleaning or Repair, 2005 edition.
- C. National Fire Prevention Association (NFPA) 51B, Standard for Fire Protection During Welding, Cutting and Other Hot Work, 201 editions.

1.04 DEFINITIONS

- A. DOT: United States Department of Transportation
- B. LEL: Lower Explosive Limit
- C. OSHA: Occupational, Health and Safety Administration
- D. PID: Photoionization Detector

1.05 REGULATORY REQUIREMENTS

- A. Tank closure shall be carried out in accordance with the requirements of the NYS DEC, EPA, as well as any other applicable local and state regulations. Wherever there is a conflict or overlap of requirements, the most stringent provisions shall apply.
- B. The Contractor shall obtain and pay for all local and state permits, including a UST removal permit.
- C. The Contractor shall obtain all local, NYS DEC, and Federal permits required for the transport and disposal of all waste materials resulting from the performance of this work.
- D. The Contractor shall document that the disposal facility proposed have all certifications and permits required by, local, State, and Federal regulatory agencies to receive and recycle or dispose of the liquid and the solid wastes resulting from performance of the work. For work that will be sub-contracted, the Contractor is responsible to ensure that the Sub- contractor has reviewed and will

strictly adhere to this specification, all reference documents, and with all local, state and federal regulations.

- E. All Contractors and/or Sub-contractors must have current, applicable licenses for all work performed.

1.06 SAFETY REQUIREMENTS

- A. Provide appropriate protective equipment for all personnel working in direct contact with vapors, liquids or sludge removed from the tanks. All personnel shall be trained in the proper use and maintenance of the appropriate protective equipment used on this project. Smoking will not be allowed in the work area or loading area during the course of the work, or any school property.
- B. Personnel working inside and in the general vicinity of the tanks shall be trained and thoroughly familiar with the safety precautions, procedures, and equipment required for controlling the potential hazards associated with this work, including training for confined space entry. Personnel shall use proper protection and safety equipment during work in and around the tanks, including instruments to monitor air quality, explosive atmospheres, and oxygen content.
- C. All provisions of the site Health and Safety Plan included shall be in force during tank removal activities.
- D. Warning signs and devices shall be placed at regular intervals along the work area perimeter, and establish restricted work zones, support areas and decontamination areas as needed. Contractor shall furnish, install and maintain fencing or other appropriate barricades at open excavations, including illumination if left over night.
- E. Prior to ending operations on any working day or at any time the Contractor is not on site, the Contractor shall secure all areas of work by erecting temporary safety fencing.
- F. Cutting of steel or other metals by thermal methods shall, at all times, occur in a non- explosive environment. During such work, percent of lower explosive limit in the tanks, piping of the surrounding atmosphere shall be continuously monitored. The Contractor shall note that residual pockets of oils or residues may exist in some of the pipelines and the Contractor shall exercise care to prevent release to the environment and harm to workers, facility staff or the public resulting from potential explosive nature of the contained materials.
- G. The Contractor shall provide and maintain an adequate supply of fire extinguishers and other required safety equipment in close proximity to all tank cleaning and removal activities.

1.07 QUALITY ASSURANCE AND MEASUREMENT FOR CONTAMINATION

- A. The Contractor shall provide a designated representative available on site during the tank and pipe cleaning and removal to monitor for leaks. The designated representative will perform inspections and tests to ensure that the work is performed in compliance with the specification and with applicable Federal, State and local regulations, and guidelines.
- B. It is not intended that the presence or activities of the Engineer shall relieve the Contractor in any way of his/her obligation to maintain an adequate inspection program of his/her own, or any other obligation under this specification.

1.08 SUBMITTALS

- A. The Contractor shall submit each item in this Article according to the Conditions of the Contract and the Submittals [Section 013300], for information only, unless otherwise indicated.
- B. The Contractor shall submit a Waste Management Plan. The Plan shall include identification of the proposed waste hauler and disposal facility with copies of all applicable licenses, registrations, and approvals.
- C. The Contractor shall provide the Architect with all required documentation relating to the proper removal and disposal of any hazardous or regulated waste that leaves the site.
- D. After completion of the tank removal, provide a final report documenting removal, transportation and disposal activities. The report shall include: Complete original manifests and/or Bills of Lading for all hazardous or non-regulated materials disposed off-site, including but not limited to, discarded tank, waste liquid and sludge and associated debris from the Site. Notice indicating a change in the registration information for the USTs.
- E. Payment for work related to this section will not be issued until all documentation required is submitted.

PART 2 - PRODUCTS

Not Used

PART 3 - EXECUTION

3.01 GENERAL

- A. Provide suitable personnel, material and equipment to clean and remove the fuel piping and tanks and all sludge and liquids that may be in the piping and tanks prior to removal. Take all necessary precautions during removal of the tanks to prevent damage to utilities adjacent to the area. All fuel fill, boiler supply and other fuel lines and vents shall be removed.

3.02 PERMITTING

- A. Prior to initiating storage tank removal activities, the Contractor shall apply for all permits.
- B. Within 72 hours of closing the storage tank, the Contractor shall provide receipt to the Architect for delivery of the USTs to the disposal site designated on permit.

3.03 TANK CLEANING

- A. The Contractor shall protect existing site surfaces, materials, and structures from inadvertent Contamination from cleaning operations. Should such contamination occur, the Contractor shall not be reimbursed for costs associated with replacement or proper disposal of contaminated materials. Assure that any electrical power connected to the tanks or its ancillary equipment (pumps) has been deactivated and the actual wiring properly dismantled at the circuit breaker(s).
- B. Collect, containerize, and dispose of all residual oils, other product, and sludge remaining in the tanks and piping prior to tank cleaning and removal.
- C. Tanks shall have interiors steam cleaned followed by three (3) rinses. The steam discharge nozzle and all conductive insulated objects subject to impingement or condensation should be bonded to the tank or be grounded. Surfaces shall be steam cleaned using a commercial-scale steam cleaner. The Contractor shall be required to use a detergent and provide a steam generator capable of supplying steam at 15 psig. Liquid waste generated as a result of steam cleaning and rinsing operations shall be collected and removed by the Contractor. The Contractor shall dispose of the liquids as per the method specified for the tank sludges and residues.
- D. After the above operations, all flammable vapors shall be removed from the tanks by displacement with inert gas. The vapors shall be made inert by adding solid carbon dioxide, (dry ice), in the amount of 1.5 pounds per 100 gallons of tank capacity. The dry ice shall be crushed and distributed evenly over the greatest possible area to ensure rapid sublimation. All available tank openings shall be

open to the atmosphere during this procedure to ensure rapid dissipation of the dry ice.

- E. To evaluate the effectiveness of the dry ice procedure, the Contractor shall use a suitably calibrated instrument to determine if the resultant vapor mixture within the tanks exceeds ten percent of the Lower Explosive Limit (LEL). Readings shall be taken throughout the tanks depth wherever access is possible. If the vapors within the tanks exceed ten percent of the LEL, the displacement procedure shall be repeated followed by a recheck of the LEL until the vapors are less than 10 percent of the LEL.
- F. After acceptable LEL levels have been reached, excavation of tanks may begin after approval of the Engineer.

3.04 TANK EXCAVATION

- A. The Contractor shall provide all labor, permitting, tools, material, services, and equipment necessary to properly demolish the concrete, excavate the tank(s), and associated mechanical piping and appurtenances, after pipe and tank cleaning and disposal activities.
- B. After the tank and mechanical piping have been purged, cleaned, and gas freed of vapors, but prior to removal, the Contractor shall plug all holes and inert the tanks and piping.
- C. Once the tanks are cleaned and inert, the Contractor must be careful to excavate around the tank, exposing as much of the tank as possible, to allow for a visual inspection of the tank surface. The inspection is performed to identify possible holes, cracks, etc. and other evidence that a leak may have occurred. Remove the tank hold-down straps, if any, lift the tank out of the excavation, place on a level surface, and block the tank to prevent movement. The exterior of each tank and pipe shall be cleaned, and if contaminated soil or groundwater conditions exist, the cleaning wastes contained for proper disposal.
- D. If large areas of petroleum impacted soils are encountered in the UST excavation, or greater than one-half inch ($\frac{1}{2}$ ") of free oil on a groundwater surface, work shall stop and the Architect and Owner shall be immediately notified. Subsequent earthwork and/or groundwater handling work will then be determined.
- E. Incidental volumes of visually (or by field PID) contaminated soils may be expected during excavation of the USTs and piping. These soils shall be segregated and stored during characterization and preparation for offsite disposal by the Contractor. The maximum depth of all excavation areas shall be marked with caution tape or the like to aid potential future excavation. Apparently clean soils shall be stockpiled separately for future reuse at the site.
- F. Where contaminated soil is present below the groundwater table, the Contractor, shall discontinue excavation and shall line the excavation with 6 mil thick polyethylene sheeting.

3.05 TANK REMOVAL

- A. The tanks shall be removed from the excavation and the exterior cleaned to remove all soil and inspected for signs of corrosion, structural damage, or leakage. All materials coming into contact with the tanks, or in the vicinity of the excavation such as shovels, slings and tools shall be of the non-sparking type.
- B. Tank anchoring structures such as concrete deadmen or hold down slabs shall be removed, unless otherwise directed by the Architect.
- C. All piping including electrical conduit associated with the tanks shall be completely removed to the interior face of any associated building wall. Piping shall be reduced to appropriate lengths and cleaned of all contaminated materials. Sleeves and piping passing through wall shall be flushed clean and then permanently capped and plugged on the outside in a manner approved by the Architect. All level monitoring and control equipment shall be completely removed to the interior face of any associated building wall. This includes transmitters, indicators, conduit, and wiring.

3.06 TANK DISPOSAL

- A. The Contractor shall dispose of all demolition related wastes as designated herein, in accordance with all applicable regulations including NYS DEC.
- B. Tanks and piping shall be delivered for disposal in an acceptable manner to an approved disposal or recycling facility following decontamination.
- C. All concrete associated with existing buried tanks shall be broken up and disposed of.

***** END OF SECTION *****

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PART 1 - GENERAL

1.01 RELATED DOCUMENTS

- A. All provisions, terms, and conditions of the Contract including all specifications, addenda, hazardous material survey reports, and other contract documents.

1.02 DEFINITIONS

- A. Lead-based paint (LBP), as defined by the U.S. Environmental Protection Agency (USEPA) and the U.S. Department of Housing and Urban Development (HUD), means painted or glazed materials (i.e. ceramic tile) containing 0.5% lead or more by weight.
- B. Lead, as defined by OSHA 29 CFR Part 1926.62 means: metallic lead, all inorganic lead compounds, and organic lead soaps. All other organic lead compounds are excluded from this definition.
- C. Action Level, as defined by OSHA 29 CFR Part 1926.62, means employee exposure, without regard to the use of respirators, to an airborne concentration of lead of 30 micrograms per cubic meter (30 $\mu\text{g}/\text{m}^3$) of air calculated as an 8-hour time-weighted average (TWA).

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- D. Permissible Exposure Limit (PEL), as defined by OSHA 29 CFR Part 1926.62, means employee exposure, without regard to personal protective equipment, to an airborne concentration of lead of $50 \mu\text{g}/\text{m}^3$ (calculated as a TWA).
- E. Competent person, as defined by OSHA 29 CFR Part 1926.62, means one who can identify lead hazards and implementing corrective measures to eliminate hazards.
- F. Lead-containing material (LCM) includes LBP, lead-containing components/surfaces, and glazed/ceramic tile applications. A building material is defined as an LCM if any detectable amount of lead is present in that building material.

1.03 SUMMARY

- A. Unless otherwise indicated, all painted surfaces and building materials shall be presumed to contain lead and shall be treated as LCM. Contractor shall review the Limited Hazardous Material Pre-Renovation Survey Report for additional details pertaining to LCMs identified at the site.
- B. The Occupational Safety & Health Administration (OSHA) regulates occupational exposure to lead under 29 CFR Part 1926.62 – Lead in Construction Standard. Any Contractor disturbing LCM shall comply with all requirements of 29 CFR Part 1926.62 and this specification. The intent is for the Contractor to protect his workers and building occupants from unnecessary exposures to lead.
- C. The Contractor shall provide all labor, materials, tools, equipment, and services necessary to protect both workers and building occupants from potential lead exposure.
- D. Any waste products shall be considered industrial or hazardous waste, based on the results of a Toxicity Characteristic Leaching Procedure (TCLP) test. The cost of this testing shall be the responsibility of the Contractor and included in their bid for the project.
- E. Exact quantities and locations of LCMs that will be disturbed shall be determined by the Contractor at the time of bidding. The Contractor must be satisfied as to the quantity of waste requiring disposal, and include all such costs in their bid price.
- F. All work shall be performed in accordance with this specification and applicable federal, state, and/or local regulations. Dry sweeping of lead-containing dust is prohibited. Lead-containing debris shall be removed and collected using high efficiency particulate air (HEPA) vacuums designed to collect waste including paint chips, debris, and dust.
- G. It is the Contractor's responsibility to ensure that waste materials are contained, transported, and disposed of in accordance with all applicable Federal, State, and Local regulations.

1.04 APPLICABLE REGULATIONS

- A. The Contractor shall comply with all federal, state, and local codes, rules, and regulations regarding the handling, storage, and disposal of LCM. The Contractor is further responsible to conduct work in compliance with all applicable codes, rules, laws, and regulations including, but not limited to:
 - 1. Worker Protection - Occupational Safety and Health Administration (OSHA)
 - a. 29 CFR Part 1910.134 - Respiratory Protection Standard
 - b. 29 CFR Part 1926. 20 - General Safety and Health Provisions

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- c. 29 CFR Part 1926.59 - Hazard Communication
 - d. 29 CFR Part 1926.62 - Lead Exposure in Construction
 - e. 29 CFR Part 1910.94 and Part 1926.57 – Ventilation
 - 2. Ambient Air Quality - Environmental Protection Agency (EPA)
 - a. 40 CFR Part 50.6 - National Primary and Secondary Ambient Air Quality Standards for Particulate Matter
 - 3. Water Quality - Environmental Protection Agency (EPA)
 - a. 40 CFR Part 122 - Administered Permit Programs; The National Pollutant Discharge Elimination System
 - 4. Waste Disposal - Environmental Protection Agency (EPA)
 - a. 40 CFR Part 261 - Identification and Listing of Hazardous Waste
 - b. 40 CFR Part 262 - Standards Applicable to Generators of Hazardous Waste
 - c. 40 CFR Part 263 - Standards Applicable to Transporters of Hazardous Waste
 - 5. New York State Department of Environmental Conservation (NYSDEC)
 - a. Title 6 Parts 360-7, 364, and 370 through 374
- B. The Contractor shall also comply with the following regulations and guidance documentation:
- 1. U.S. Department of Labor
 - 2. Occupational Safety and Health Administration Pub. 3126 - Working with Lead in the Construction Industry
 - 3. USEPA Lead Renovation, Repair, and Painting (RRP) Program

1.05 LEAD HAZARDS

- A. Work practices/methods that may release lead dust or fumes into the air and onto surrounding surfaces are prohibited. It is the Contractor's responsibility to reduce potential exposure to lead.
- B. Lead is a toxic substance, which travels into the body by inhalation or ingestion due to lead dust and/or fumes that are present. Upon entering the body, lead enters the bloodstream, traveling throughout the body. The body cannot eliminate all the lead; therefore, it is stored in tissue and organs. Stored quantities of lead may cause irreversible damage to cells, organs, and body systems.
- C. Exposure to lead may affect individuals differently. Exposure may occur without any indication of exposure or symptoms developing. Symptoms of lead poisoning to be aware of include, but are not limited to, loss of appetite, trouble sleeping, irritability, fatigue, headache, joint and muscle ache, metallic taste, decreased sex drive, lack of concentration, and moodiness.
- D. Prolonged exposure may result in damage to the body's systems including nervous, reproductive and circulatory systems. Symptoms of such exposures may include, but are not limited to, stomach pains, high blood pressure, nausea, tremors, seizures, anemia, constipation, and convulsions.
- E. The Contractor's Supervisor is responsible to monitor any workers for such symptoms and is further responsible for ensuring affected workers are removed from the area. Affected workers shall not return until such time that the requirements outlined in the OSHA Lead in Construction Standard (29 CFR Part 1926.62) have been met.

1.06 GENERAL REQUIREMENTS

- A. The Contractor is responsible for complying with the following general requirements applicable to the project (at a minimum):
 - 1. Respiratory Protection and Personnel Protection
 - 2. Medical Examinations
 - 3. Utilization of engineering controls, as necessary, to reduce potential exposure
 - 4. Proper clean-up and disposal of all lead related waste materials, as required.
- B. The Contractor is solely responsible for properly protecting their workers. Additional safety measures beyond OSHA requirements are encouraged, but are at the implementation and discretion of the Contractor.

1.07 SUBMITTALS

- A. Prior to commencement of any activities with the potential to disturb LCMs, the Contractor shall submit the following documentation:
 - 1. Work Plan - The Contractor shall submit a work plan in compliance with the requirements of the OSHA Lead in Construction Standard (29 CFR Part 1926.62). The plan shall include but is not limited to: handling, cleaning, containerizing, transport, and disposal.
 - 2. Equipment - Information for all equipment utilized shall be submitted for review prior to commencement of project activities. This includes, but is not limited to, equipment specifications and material safety data sheets.
 - 3. Training - The Contractor shall provide proof of Lead Awareness training in accordance with OSHA 29 CFR Part 1926.62 for all employees performing renovation/repair activities resulting in disturbance of LCMs.
 - 4. Disposal - The Contractor shall submit documentation including all required permits, anticipated disposal facilities, and anticipated transporter information should construction waste be determined to be hazardous. If applicable, copies of applicable laboratory credentials shall be provided for the laboratory performing TCLP analysis.

1.08 PERSONAL AIR SAMPLING & ANALYSIS

- A. The Contractor is responsible for conducting personal lead exposure assessment air monitoring of his employees, as required by OSHA 29 CFR Part 1926.62. Personal air samples shall be collected which are representative of a full-shift including at least one sample for each job classification in each work area either for each shift or for the shift with the highest exposure level. Full-shift personal samples shall be representative of the monitored employee's regular, daily exposure to lead.
- B. If requested by the Owner's Representative, the Contractor shall provide laboratory analysis reports showing that they are conducting personal lead exposure assessment air monitoring of employees working with lead in accordance with OSHA 29 CFR Part 1926.62.

PART 2 - PRODUCTS

2.01 MATERIALS

- A. Cleaning Solutions - A lead-specific cleaning solution shall be utilized for all cleaning activities. The cleaning solution shall be an approved solution that does not contain tri-sodium phosphate (TSP).

- B. Plastic Sheetting - To prevent dust migration, dust barriers, containments, and/or enclosures shall be constructed utilizing 6-mil fire-retardant plastic sheeting. These barriers shall be constructed to minimize dust migration into non-construction zones.
- C. Framing - If framing is utilized for the construction of dust barriers/containments, all reinforcement framing/sheathing materials must be at least $\frac{3}{8}$ -inch thick. Minimum requirements for framing materials shall be comprised of 2" x 4" stud framing in accordance with all applicable building codes.
- D. Adhesives - Commercially available duct tape and spray adhesives designed for such purposes are allowed to maintain the integrity of any barriers, containments, and/or enclosures erected.

2.02 EQUIPMENT

- A. Protective Clothing - Coveralls, gloves, eye protection, ear protection, safety footwear, hard hats, and fall protection are required as per all applicable OSHA regulations. The Contractor is responsible for supplying all such equipment and including these costs in their pricing.
- B. Respiratory Protection - The Contractor shall provide workers with adequate respiratory protection based on the lead hazards identified at the site. The amount of respiratory protection provided to the workers shall be determined through personal air sampling.
- C. Respirator Filters - The Contractor shall provide his workers with appropriate respirator filters for the respiratory protection the workers are utilizing as per OSHA 29 CFR Part 1910.134.

PART 3 - EXECUTION

3.01 LEAD COMPLIANCE PLAN

- A. The Contractor is required to establish and follow a lead compliance plan for the project. The requirements, as outlined in OSHA 29 CFR Part 1926.62, include written procedures for construction activities regarding control methods and engineering controls.
- B. If the Contractor fails to follow their lead compliance plan, the Owner's Representative may elect to hire a third-party consultant to oversee the Contractor's work. The cost for the third-party consultant shall be borne by the Contractor.

3.02 SIGNAGE

- A. Warning signs shall be posted in all areas where the potential for any lead exposure exists. Signs shall remain in place until renovation/demolition activities have been completed and the area cleaned. All signage shall comply with OSHA 29 CFR Part 1926.62.

3.03 WORK METHODS

- A. The Contractor shall select work methods in compliance with OSHA 29 CFR Part 1926.62. All work shall be performed utilizing wet methods and other engineering controls, as necessary. The Contractor is prohibited from dry methods of removal, heat gun applications, mechanical methods (grinding/sanding), and/or torch-cutting during renovation/demolition activities.

3.04 CLEANING & CLEARANCE

- A. Following the completion of all lead-related work activities, all surfaces within and 25 feet beyond the areas impacted by the work shall be cleaned of all visible paint chips, dust, and debris.
- B. Visual examinations/inspections of all areas affected by the lead-related work shall be conducted by the Contractor's competent person to determine satisfactory cleaning of all affected areas; however, the Owner's Representative may retain a third-party consultant to perform visual clearance examinations/inspections and/or perform lead dust-wipe sampling to determine satisfactory cleaning and satisfactory completion of the work.
- C. If the Contractor does not satisfactorily clean an area based on visual examinations/inspections, or if lead dust-wipe sampling results are unacceptable, the affected areas shall be re-cleaned by the Contractor at his own expense. The cost for re-cleaning, third-party consultant oversight, and additional sampling/testing associated with re-cleaning activities shall be borne by the Contractor.

3.05 WASTE DISPOSAL

- A. The Contractor is responsible for proper waste characterization sampling and laboratory analysis of LCM prior to disposal/removal from site. Waste materials include, but are not limited to, the following: personal protective equipment, plastic sheeting, signage, barrier tape, LBP components, and associated materials.
- B. The Contractor is responsible for coordinating interim storage of waste containers at the project site with the Owner's Representative while awaiting waste characterization laboratory results.
- C. Lead paint chips and lead paint debris shall not be co-mingled with construction and demolition (C+D) debris. Failure to do so may result in the Contractor having to pay the associated fees for co-mingled lead waste disposal.

3.06 PROJECT CLOSEOUT

- A. The Contractor shall provide copies of all OSHA personal/employee lead exposure assessment air sampling data collected during the project.
- B. The Contractor is responsible for providing the Owner's Representative with original waste disposal manifests/records. The waste disposal documentation shall be provided to the Owner's Representative within 72 hours of the waste leaving the site.
- C. Failure to provide close-out documentation shall result in the delay of payment to the Contractor.

**** END OF SECTION ****

SECTION 03 3000 – CAST-IN-PLACE CONCRETE
PAGE 1

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Concrete Formwork
- B. Cast-in-place concrete in foundations and hold down pads, slabs on grade with fibrous reinforcing, reinforcing and all miscellaneous concrete.
- C. All hand excavation and cleaning of trenches required in preparation for placing of concrete.
- D. Build in all inserts, anchors, bolts, and other items furnished by other trades, which are required to be built into the concrete work.
- E. All vapor retarders and vapor barriers.
- F. All joint fillers and sealants.
- G. Set all anchor bolts and grout base and/or leveling plates for: tanks, structural steel or miscellaneous iron as required.
- H. All concrete finishes.

1.02 RELATED WORK SPECIFIED ELSEWHERE

- A. Section 33 5600 – Fuel tanks
- B. Section 10 7316 – Metal canopy

1.03 CODES AND STANDARDS - Concrete, forms, and reinforcing shall conform to codes, standards, and specifications of the following:

- A. American Society for Testing and Materials (ASTM).
- B. American Concrete Institute (ACI).
- C. American Welding Society (AWS).
- D. New York State Department of Transportation (NYSDOT).
- E. New York State Building Code.
- F. C1116 - Standard Specification for Fiber-Reinforced Concrete
- G. Occupational Safety and Health Standards (OSHA).

1.04 REFERENCES

- A. Specifications for Structural Concrete for Buildings ACI 301 of the American Concrete Institute.
- B. Guide to Formwork for Concrete – ACI 347.

1.05 SUBMITTALS - Submit for review one print and e-mail submission each of complete plans checked by this Contractor. Shop Drawings shall be clearly and carefully drawn, showing sufficient dimensions and views in plan, elevation, and/or section so that there will be no confusion the field as to the proper location of the reinforcing bars. Show all accessories, mesh, and supports. Review shall not relieve the Contractor of responsibility for supplying all materials required by the plans and specifications or for the proper fabrication and fit of that material. Unchecked shop drawings will not be reviewed. Supply reviewed prints for field use as required. Drawings shall be submitted early enough to allow adequate time for proper review.

1.06 TESTING - Concrete testing will be performed by an independent testing laboratory engaged by the Owner as per NYS Building Code Chapter 17.

- A. Required tests:
 - 1. Standard 6" x 12" compression cylinders (ASTM C39) in sets of four, moist cured. Break two at 7 days and two at 28 days. Cylinders made by testing laboratory, not by the Contractor: one set for approval of each mix design, one set for each 20 cubic yards or fraction thereof placed per day.

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2. Slump - Each batch, minimum.
 3. Air content - (ASTM C231) each batch, minimum.
- B. General - The Contractor shall maintain a record set of plans at site showing date and extent of each pour, temperature, and weather conditions during placement. If any portion of work shows low test results, the Engineer may require additional testing, load tests, cored samples, or replacement of the faulty work, etc., at this Contractor's expense. To conform to these specifications, the average of all strength tests, as well as the average of any three consecutive tests shall not be less than 10% over the specified design strength and no individual strength shall have an average value of less than 500 psi of the specified strength.
- C. Reports - All test cylinders shall be cast, water cured, and broken under laboratory conditions in accordance with the standard ASTM method (ASTM C31 and C39). All four cylinders of a test shall be taken from the middle third of a single load. Each cylinder shall be properly labeled with an identifying mark, the mix proportions, amount of water, slump, and the location in the structure where that concrete was placed. Test reports shall include all this information. Copies of all test reports shall be submitted to the Engineer no later than three working days after the tests are completed.

1.07 MIXES

- A. The Contractor shall submit for review by the Owner laboratory calculations, sieve analysis, specific gravities, minimum three point water-cement ratio versus compressive strength curves, the proposed proportion of aggregates and expected yield for the various mixes as required below. Mix designs shall conform to the ACI Standard Recommended Practice for the Design of Concrete Mixes (ACI 613 and ACI 613A).
- C. Test for approval - Alternate procedure; in lieu of proportioning as specified in paragraph 1.06, Part A above, a mix design employing the same ingredients proposed for use, and used successfully on a previous project under similar conditions to those anticipated on this project, may be used provided the following are submitted and approved:
1. The concrete mix design.
 2. Reports for at least 10 consecutive sets of 7 and 28 day concrete strength tests made during the last 2 months.
 3. Reports of compliance tests of fine and coarse aggregates made during the last 2 months.
- D. No job concrete shall be placed until the mix design for that concrete has been accepted by the Architect. Once the mix has been accepted, it shall not be changed without the Architect's written acceptance.
- E. Ready-mixed concrete from an established company will be accepted if conforming to ASTM C94 and to this specification. All concrete shall be batched and mixed in a plant conforming to the following requirements and controlled in a manner to assure uniform concrete for the quality specified.
- F. Specific Requirements - See page 03300-5. Water-cement ratio (W/C) includes aggregate moisture and absorption.
- G. All concrete shall contain an approved water reducing admixture. If required by field conditions, the Owner may require the use of accepted retarding admixtures. Accelerating admixtures containing chlorides are not acceptable. Accelerating admixtures shall be for cold weather use only subject to acceptance by the Owner.
- H. All concrete for exposed walls, slabs, beams, columns, and entrance slabs shall contain air entraining admixtures.

1.08 INSPECTION - Work shall be spot inspected in the field by the Owner or his authorized representative.

- A. Contractor shall notify the Owner a minimum of 24 hours prior to a concrete placement.

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PAGE 3**

Use	f'c, psi	Minimum Cement Factor	Maximum Water Cement (W/C) Ratio		Air Content (%)	Max Slump	Max Aggregate Size
			Non-Air Entrained	Air Entrained			
Footings and Piers	3,000	5.0 Bags/C.Y.	0.62	~~~~~	~~~~~	3"	1-1/2"
Slabs on Grade	4,000	6.0 Bags/C.Y.	0.51	0.49	5 to 7	4"	3/4"
Flowable Fill w/ RheoFill 15 by Master Builders	50	1.0 Bag/C.Y.		250-300 Gal./CY	25%	8"	Fines

- B. Contractor shall be responsible for providing suitable, safe, and adequate forms of wood or plywood. Where in contact with exposed concrete, forms shall be smooth-faced (plastic coated), true to line, plumb, tight, properly braced, and thoroughly oiled before placing reinforcing.
- C. No placing or wiring of steel less than 6 hours before a pour will be permitted.
- D. Placing of concrete shall not be scheduled until all of the reinforcing for that section is in place and the reinforcing and forms have been accepted by the Owner.

1.09 FABRICATION – Concrete reinforcing shall meet the following requirements:

- A. Workmanship and details shall conform to ACI 315 "Manual of Standard Practice for Detailing Reinforced Concrete Structures."
- B. Provide any special details as required or necessary.
- C. All splices not shown on the contract drawings shall be accepted in writing by the Engineer.

PART 2 - PRODUCTS

2.01 Materials: Materials shall be of the finest quality, and shall be delivered, stored and handled so as to prevent damage. Accepted brands or sources must be used, without change for the entire project.

A. Formwork:

1. Chamfer Strips: Wood, metal, PVC or rubber; ¾ x ¾ inch chamfer, unless otherwise indicated on the Drawings; maximum lengths possible.
2. Wood or Glass Fiber Fabric Reinforced Plastic Forms: Matched, tight-fitting, stiffened to support weight of concrete without deflection detrimental to structural tolerances and appearance of finished concrete surface.
3. Steel: Minimum 16 gage sheet, well matched, tight-fitting, stiffened to support weight of concrete without deflection detrimental to tolerances and appearance of finished surfaces.
4. Form Ties: Snap-off metal, of fixed length; minimum 1-inch break back dimension; free of defects that will leave holes no larger than 1-inch diameter in concrete surface.
5. Form Release Agent: Colorless material which will not stain concrete or absorb moisture.
6. Nails, Spikes, Lag Bolts, Through Bolts, Anchorages: Sizes as required; of strength and character to maintain formwork in place while placing concrete.

B. Concrete:

1. Normal Portland Cement - A standard brand, ASTM C150 Type I or Type II for structural concrete.

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2. Sand - Clean, sharp, durable, and sound material free from harmful amounts of soft, friable, thin, elongated or laminated pieces, conforming to ASTM C33.
3. Coarse Aggregate - Strong, clean, crushed limestone or gravel conforming to ASTM C33. Crushed limestone shall be used for slabs on metal deck
4. Water - Clean, potable, and free from strong acids, alkalis, oils, or organic material.
5. Fibrous Reinforcing: ASTM C1116, 100 percent virgin polypropylene, free from reprocessed olefin materials and specifically manufactured for use as concrete secondary reinforcement.

C. Reinforcing:

1. Reinforcing Bars - Shall be manufactured from material conforming to ASTM A615 Grade 60, with sizes and spacings as shown on the plans and sections. All bars are to be from new billet steel produced in the U.S.A. Submit two certified copies of mill reports for all reinforcing before any reinforcing is placed.
2. Welded Wire Mesh - Shall be cold drawn in accordance with ASTM A185, supplied in flattened sheets or mats and of sizes shown on the drawings.
3. Reinforcing Accessories - Chairs and bolsters in accordance with ACI 315, plastic tipped.

D. Miscellaneous:

1. Vapor Retarder- .010" thick clear polyethylene film in as wide rolls as possible. Vapor retarder shall conform to ASTM E 1745 latest date.
2. Grouting Under Plates - 5 Star non-shrink grout or an accepted equal.
3. Curing Compound - Sonneborn's "Kure-N-Seal", "Kure-N-Seal 0800" or accepted equal.
4. Joint Sealer - Toch Brothers "Thiotok Sealant" or accepted equal.
5. Joint Filler - fiber expansion joints, W.R. Meadows "Sealtight", or accepted equal.
6. Water Reducing Admixture - Grace Concrete Products "WRDA with Hycol" or accepted equal.
7. Air Entraining Admixture - Grace Concrete Products "Darex AEA" or accepted equal.
8. Fibrous Reinforcing - 100% virgin polypropylene fibrillated engineered fibers, "Fibermesh", by Fibermesh Co. or an accepted equal.
9. Liquid Hardener - Sonneborn's "Kure-N-Harden" or accepted equal.

2.02 Fabrication

A. Reinforcing Concrete - reinforcing shall meet the following requirements:

1. Workmanship and details shall conform to ACI 315 "Manual of Standard Practice for Detailing Reinforced Concrete Structures".
2. Provide any special details shown on plans (bars to mason for bond beams, etc.).
3. All splices not shown on the Contract Drawings shall be accepted in writing by the Architect.
4. Provide (2)-#4 diagonal bars at each corner of every rectangular opening in slabs or walls unless shown otherwise on the plans.

PART 3 - EXECUTION

3.01 Workmanship - Shall be first quality throughout, conforming to ACI 318 and these specifications.

3.02 Preparation

- A. Footings shall rest on undisturbed earth. Hand trim excavation to required levels.
- B. No reinforcing shall be placed until shop drawings have been reviewed by the Engineer.
- C. Preparation of form surfaces:

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1. All forms shall be sufficiently tight to prevent leakage of grout or cement paste.
2. All butted edges shall occur over supports or backup material.
3. Plywood surfaces shall be thoroughly cleaned and oiled prior to placing reinforcing steel.
4. Use full sheets of plywood where possible. Refer to Architectural Drawings for special relief details on exterior surfaces.
5. Provide clean-out panels at the bottoms of all column, pier, and wall forms.

3.03 Installation

A. Formwork:

1. The Contractor is responsible to determine the time at which forms may be removed without endangering the structure, subject to the following limitations and the acceptance of the Engineer: Footing forms, 24 hours minimum, continue curing as specified. Wall forms, three days minimum, continue curing as specified.
2. Construct formwork to maintain tolerances in accordance with ACI 301.
3. Provide chamfer on all exposed external corners of concrete.
4. Provisions for Work of Related Contracts: Provide openings in concrete formwork to accommodate Work of related contracts. Obtain information for size and location of openings, recesses and chases from contractor requiring such items. Coordinate work of other Sections in forming and setting slots, recesses, chases, sleeves, bolts, anchors, or other inserts.
5. Install accessories in accordance with manufacturer's instructions, level and plumb. Ensure items are not disturbed during concrete placement.
6. Clean forms to remove foreign matter as erection proceeds.
7. Ensure that water and debris drain to exterior through cleanout ports.
8. During cold weather, remove ice and snow from forms. Do not use de-icing salts. Do not use water to clean out completed forms, unless formwork and construction proceed within heated enclosure. Use compressed air to remove foreign matter.
9. Shores and Supports: Concrete members subject to additional loads during construction shall be shored in such a manner as will protect the member from damage by the loads. Do not remove shores until the member supported has acquired sufficient strength to safely support its weight and any weight imposed thereon.

B. Reinforcing:

1. Unless noted on drawings, reinforcement shall not be bent after partially embedded in hardened concrete. Bending shall be accomplished by heating the reinforcing bars as recommended by ACI.
2. Dowels must be wired in place before concreting begins.
3. Footing reinforcing shall be supported on precast concrete blocks, spaced at intervals required by size of reinforcing used to keep reinforcing a minimum of 3" above grade.
4. Cutting of bars to clear openings in walls or slabs is strictly prohibited. Warp bars around such openings.
5. Welded wire mesh in slabs on grade shall be supported at mid-depth, lap 6" minimum and cut mesh reinforcing at construction and control joints.

C. Concrete Placement:

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1. Contractor shall accurately set all anchor bolts for structural steel and shall provide all miscellaneous slots, chases, and openings for all trades in accordance with reviewed shop drawings. Sleeves required shall be provided by trades involved and set by this Contractor.
2. Anchor bolts, leveling plates, and base plates for structural steel shall be: Accurately set in accordance with accepted anchor bolt plans by the steel fabricator. Centerlines and elevations shall be carefully located by Engineer's transit and bolts set in a wooden template, wired to maintain them perpendicular and at the correct projection during the placement of concrete. Carefully set on a full bed of non-shrink grout, all loose base plates or leveling plates for structural steel. Plates shall be set true and level at specified elevation. Leveling plates, base plates, and bearing plates shall be bolted in place to provide vertical confinement for grout.
3. Floor slabs on grade shall meet the following:
 - a. Provide minimum of 10" compacted select gravel fill.
 - b. Over sub-grade, lay vapor retarder specified. Lap a minimum of 6" and seal all joints with mastic. Installation shall be in accordance with ASTM E 1643 latest date.
4. Miscellaneous concrete shall include forms, reinforcing, placing and finishing such miscellaneous concrete as sills, caps, curbs, pads, etc. as shown or required to complete the concrete work of this contract. All exposed miscellaneous concrete shall be rubbed to a smooth, even finish with a carborundum stone.

3.04 Finishing:

A. Concrete surfaces finish shall meet the following:

1. Typical vertical surfaces as-cast plywood finish is applicable for:
 - (a) Concrete work below grade, walls and columns in unfinished space, concealed by other materials.
 - (b) Remove all metal ties 1" below the surface. Remove all projections and irregularities.
 - (c) Point and patch depressions left from removed ties, fins, holes, water, air pockets, honeycombs, etc. with a mortar mix.
 - (d) Chip out major stone pockets and repair as directed.
2. Exposed vertical surfaces - smooth finish is applicable for:
 - (a) Concrete exposed to view, either on the inside or outside of the structure. Metal ties removed and holes shall be pointed and patched.
 - (b) Any exposed surface which is out of level, or alignment, or which does not present a uniform, neat, clean appearance, shall be removed and replaced unless the Engineer and/or Architect grants permission to patch. Permission to patch does not waive the Engineer's and/or Architect's right to require removal and replacement of inferior section if patching does not produce satisfactory results.
3. Concrete finishes on floors:
 - (a) All finish floors shall be level within a tolerance of 1/4" in 10 feet. Dusting with dry cement to hasten set is prohibited. All floors shall be cured as specified.
 - (b) Floated Finish - When water sheen has disappeared from surface and/or the mix has stiffened sufficiently to permit proper operation of men and equipment, the surface shall be consolidated with power driven floats leaving a uniform, smooth granular texture.
 - (c) Trowelled Finish - Typical all floors. The surface shall be finished first with power floats as specified. Follow with power trowelling to close all pores and surface defects. Final trowelling shall be done when a ringing sound is produced as the trowel moves over the surface. The finished surface shall be free of any trowel marks, uniform in texture and appearance.

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- (d) Surface Treatment - Exposed concrete floors. After surface water is gone and slab can be walked on, spray or brush on two coats of Sonneborn's "Kure-N-Harden". Apply both coats at the rate of 350 s.f. per gallon. Application to be in accordance with manufacturer's recommended procedures. Just before turning the building over to the Owner, clean all dust, dirt and debris from the floors. Lightly acid etch the floors with muriatic acid diluted 10:1 until sufficient slip resistance is achieved. Protect all adjacent surfaces during acid etching. Apply two coats of Sonneborn's "Kure-N-Seal 0800, 21% solids. Application to be in accordance with manufacturer's recommended procedures. Apply the second coat at a rate of 500 s.f. per gallon.

3.05 Protection:

A. Warm Weather Protection - See ACI 305, latest date.

1. Minimum curing period is seven (7) days.
2. Prevent drying out by keeping all surfaces thoroughly wetted at all times.
3. Cover floors with curing compound as specified in strict accordance with the manufacturer's recommendations.
4. Vertical Surfaces - Keep forms on or cover with burlap blankets, keep wet.
5. When the average air temperature exceeds 80°F, shield concrete and its ingredients from the sun where possible and eliminate unnecessary mixing or handling.
6. The maximum temperature of the concrete when first placed shall not exceed 90°F. All concrete exceeding this temperature will be rejected.

B. Cold Weather Protection - See ACI 306, latest date.

1. Heat aggregate and water, cover placed concrete with tarps and heat with salamanders. Torches, open flames, salts, or chemicals are prohibited.
2. Maintain temperatures above 60°F and below 80°F for not less than the 7 day damp curing period.
3. Accelerating admixtures will not be accepted.
4. Frozen concrete will be rejected.

C. Contractor shall protect all finished concrete surfaces from mechanical damage.

3.06 Mixing - Concrete batching, mixing, conveying, and placing shall meet the following:

- A. Aggregate, sand, and cement accurately measured by weight. Varying aggregate moisture shall be accounted for in weight measurements. Water measurements by volumetric float control.
- B. Concrete mixed until there is a uniform distribution of materials and discharged completely before the mixer is recharged. Mixer rotated at speed recommended by manufacturer and mixing continued for a least one minute after all materials are in the mixer. Fibrous reinforcing, where required, shall be added at the rate of 1.5 lbs./C.Y. concrete.
- C. Concrete conveyed from mixer to place of final deposit by methods which will prevent the segregation or loss of the material.
- D. Equipment for chuting, dumping, or pneumatically conveying concrete shall be of such size and design as to insure a practically continuous flow of concrete at the delivery end without separation of the material.
- E. Place within 90 minutes of mixing. Discard concrete with initial set before placing. No retempering.

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- F. Place in not more than one foot layers within 6 feet of final position; do not attempt to flow concrete horizontally. In deep forms, use a tremie. Concrete shall not be dropped more than 6 feet. If necessary to convey concrete further than 10 feet, use buggies, pump, or crane and bucket. Use of chutes longer than 10 feet or belt conveyors is prohibited.
- G. Vibrate concrete into corners, spade stone away from forms. If free water shows on top surface of concrete, reduce water. Screed all work to level surfaces. Rake surfaces to provide bond for later finishes if required.
- H. Pumping - If concrete is to be moved by pumping, complete information, including special concrete mix and equipment, shall be submitted to the Owner for acceptance.

***** END OF SECTION *****

PART 1 - GENERAL

1.01 SCOPE OF WORK

A. Section Includes:

1. Work Furnished and Installed: Shop fabricated ferrous metal items, and galvanized. The following listing is for information only and is indicative of but not inclusive of all work of this Section.

- a. Steel thresholds

B. Related Work Specified Elsewhere:

1. Section 03 3000 – Cast-in-place Concrete

1.02 REFERENCES

- A. ASTM A36 - Structural Steel.
- B. ASTM A53 – Pipe, Steel, Black and Hot-Dipped, Zinc-coated Welded and Seamless Steel Pipe.
- C. ASTM A123 - Zinc (Hot-Galvanized) Coatings on Products Fabricated From Rolled, Pressed and Forged Steel Shapes, Plates, Bars and Strip.
- D. ASTM A153 - Zinc Coating (Hot-Dip) on Iron and Steel Hardware.
- E. ASTM A307 - Carbon Steel Bolts and Studs, 60,000 psi tensile strength.
- F. AWS A2.0 - Standard Welding Symbols.
- G. AWS D1.1 - Structural Welding Code.

1.03 SUBMITTALS

- A. Submit under provisions of Section 01 3300.
- B. Shop Drawings: Indicate profiles, sizes, connection attachments, reinforcing, anchorage, size and type of fasteners, hinges, and accessories. Include erection drawings, elevations, and details where applicable.
- C. Indicate welded connections using standard AWS A2.0 welding symbols. Indicate net weld lengths.

1.04 QUALITY ASSURANCE

- A. Welders' Certificates: Submit information certifying that the welders employed on the Work, verifying AWS qualification within the previous 12 months.

1.05 FIELD MEASUREMENTS

- A. Verify that field measurements are as indicated on Shop Drawings.

PART 2 - PRODUCTS

2.01 MATERIALS

A. General

1. Steel Sections: A36
2. Plates: ASTM A283
3. Bolts, Nuts, and Washers: ASTM A307, galvanized to ASTM A153 for galvanized components
4. Fasteners: For ferrous metal and stainless steel use stainless steel on exterior. On interior match adjacent material for ferrous, stainless steel for stainless.
5. Welding Materials: AWS D1.1; type required for materials being welded
6. Touch-Up Primer for Galvanized Surfaces: SSPC 20, Type II Organic, Zinc rich

2.02 FABRICATION

- A. Fit and shop assemble in largest practical sections.
- B. All steel to be hot dipped galvanized.
- C. Fabricate items with joints tightly fitted and secured.
- D. Continuously seal jointed members by continuous welds.
- E. Grind exposed joints flush and smooth with adjacent finish surface. Make exposed joints butt tight, flush, and hairline. Ease exposed edges to small uniform radius.
- F. Supply components required for anchorage of fabrications. Fabricate anchors and related components of same material and finish as fabrication, except where specifically noted otherwise.

2.03 FINISHES – Galvanize items

- A. Clean surfaces of rust, scale, grease, and foreign matter prior to finishing.
- B. Galvanize in accordance with ASTM A123, structural steel members. Provide minimum 1.25 oz/sq ft galvanized coating.
- C. Galvanize assembled items to minimum 1.25 oz/sq ft zinc coating in accordance with ASTM A386.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Verify that field conditions are acceptable and are ready to receive the work of this Section.

3.02 PREPARATION

- A. Clean steel items to bare metal where site welding is required.
- A. Supply items required to be cast into concrete or embedded in masonry with setting templates, to appropriate Sections.

3.03 INSTALLATION

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PAGE 3

- A. Install items plumb and level, accurately fitted, free from distortion or defects.
- B. Allow for erection loads, and for sufficient temporary bracing to maintain true alignment until completion of erection and installation of permanent attachments.
- B. Perform field welding in accordance with AWS D1.1.
 - 1. Welds shall be made only by operators experienced in performing the type of work indicated.
 - 2. Welds normally exposed to view in the finished work shall be uniformly made and shall be ground smooth.
 - 3. Where welding is done in proximity to glass or finished surfaces, such surfaces shall be protected from damage due to weld sparks, spatter, or tramp metal.
- C. After erection, prime welds, abrasions and surfaces not shop primed, except surfaces to be in contact with concrete. Use zinc rich primer for galvanized surfaces.

3.04 ERECTION TOLERANCES

- A. Maximum variation from Plumb: 1/4 inch per story, non-cumulative.
- B. Maximum offset from True Alignment: 1/4 inch.

**** END OF SECTION ****

**SECTION 10 7316 – METAL CANOPY SYSTEM
PRE-ENGINEERED STRUCTURE
PAGE 1**

PART 1- GENERAL

1.01 WORK INCLUDES

- A. Freestanding, pre-engineered metal canopies including structural steel framing, metal roof panels, metal soffit deck panels, aluminum composite fascia panels, downspouts, accessories and trim, and concrete foundation design.

1.02 RELATED SECTIONS

- A. Section 03300 – Cast-In-Place Concrete: Concrete Island and curbing.
- B. Section 05500 – Metal Fabrications.
- C. Division 15 – Plumbing: Plumbing services and connections.
- D. Division 16 - Electrical: Electrical Wiring and connections.

1.03 REFERENCES

- A. ASTM International (ASTM)
 - 1. ASTM E2950 – 14 – Standard Specification for Metal Canopy Systems
 - 2. ASTM A36/A36M – Specification for Carbon Structural Steel
 - 3. ASTM A325/A325M – Specification for Structural Bolts, Steel, Heat Treated, 120/105 ksi Minimum Tensile Strength
- B. American Institute of Steel Construction, Inc. (AISC): AISC 303 – Code of Standard Practice for Steel Buildings and Bridges.
 - 1. American Society of Civil Engineers (ASCE): ASCE 7 – Minimum Design Loads for Buildings and Other Structures
- C. American Welding Society (AWS): AWS D1.1 – Structural Welding Codes
 - 1. American Concrete Institute (ACI): ACI 318 – Building Code Requirements for Structural Concrete and Commentary.

1.04 SYSTEM PERFORMANCE REQUIREMENTS

- A. General: Provide a complete metal overhead canopy system, manufacturer's standard mutually dependent components and assemblies that form a metal overhead canopy system. The metal overhead canopy system must be capable of withstanding structural and other loads, thermally induced movement, and exposure to weather without failure. Include primary and secondary framing, roof and wall panels, and accessories complying with requirements indicated, including those in this Article. Provide the design for concrete foundations to be installed by the Contractor.
- B. Nonmetallic, Shrinkage-Resistant Grout: Premixed, nonmetallic, noncorrosive, non- staining grout containing selected silica sands, port land cement, shrinkage compensating agents, plasticizing and water-reducing agents, complying with

**SECTION 10 7316 – METAL CANOPY SYSTEM
PRE-ENGINEERED STRUCTURE
PAGE 2**

ASTM C 1107, of consistency suitable for application, and with a 30-minute working time. Shrinkage-Resistant Grout to be provided and installed by the Contractor.

- C. Metal Overhead Canopy System Design: Of size, spacing, slope, and spans indicated, and as follows:
 - 1. Frame Type: Fixed Base Cantilevered Steel Tube Columns
 - 2. Clear Height: as indicated by nominal height on Drawings.
 - 3. Support Locations: as indicated on drawings.
 - 4. Roof System: Manufacturer's standard lap-seam roof panels.
 - 5. Secondary Frame Type: Manufacturer's standard.
- D. Structural Performance: Provide metal canopy systems capable of withstanding the effects of gravity loads and the following loads and stresses within limits and under conditions indicated:
 - 1. Design Loads: As indicated on the drawings, at a minimum meet all NYS codes..
 - 2. Live Loads: See drawings
 - 3. Wind Loads: Include horizontal loads induced by a basic wind speed as required for the location of the project and per building code in effect for the project.
 - 4. Collateral Loads: Include additional dead loads other than the weight of overhead canopy system for permanent items.
 - 5. Load Combinations: Design metal canopy systems to withstand the most critical effects of load factors and load combinations.
 - 6. Deflection Limits: Based on Manufacturer standards
- E. Seismic Performance: Design and engineer metal canopy systems capable of withstanding the effects of earthquake motions determined according to the building code in effect for this Project.

1.05. SUBMITTALS

- A. Product Data: Include construction details, material descriptions, dimensions of individual components and profiles, and finishes for each type of the following metal canopy system components:
 - 1. Structural-framing system.
 - 2. Roof panels.
 - 3. Fascia panels
 - 4. Drainage System
- B. Shop Drawings: For the following overhead canopy system components. Include plans, elevations, sections and details.
 - 1. For installed components indicated to comply with design loads, include structural analysis data signed and sealed by the qualified professional engineer responsible for their preparation.

**SECTION 10 7316 – METAL CANOPY SYSTEM
PRE-ENGINEERED STRUCTURE
PAGE 3**

2. Anchor-Bolt Plans: Include location, diameter, and projection of anchor bolts required to attach metal canopy to foundation.
 3. Structural-Framing Drawings: Show complete fabrication of primary and secondary framing. Indicate welds and bolted connections, distinguishing between shop and field applications. Include transverse cross-sections.
 4. Roof Layout Drawings: Show layouts of panels on support framing, details of edge conditions, joints, panel profiles, corners, custom profiles, supports, anchorages, trim, flashings, closures, and special details. Distinguish between factory- and field-assembled work.
 5. Concrete footing details.
 6. Samples for Initial Selection: Manufacturer's color charts showing the full range of colors available for each type of the following products with factory-applied color finishes: Deck panels.
 7. Fascia Panels
- C. Product Certificates: Signed by manufacturers of metal canopy systems certifying that products furnished comply with requirements.
1. Letter of Design Certification: Signed and sealed by a qualified professional engineer. Include the following:
 - a. Name and location of Project.
 - b. Name of manufacturer.
 - c. Overhead Canopy dimensions, including width, length, and height.
 - d. Indicate compliance with AISC standards for hot-rolled steel and AISI standards for cold-rolled steel, including edition dates of each standard.
 - e. Governing building code and year of edition.
 - f. Design Loads: Include dead load, roof live load, roof snow load, wind loads/speeds and exposure and seismic design category. Building-Use Category: Indicate category of building use and its effect on load importance factors.
- D. Warranties: Submit warranty documents.
- E. Quality Assurance
1. Erector Qualifications: An erector with a minimum of five years of experience who has specialized in erecting and installing work similar in material, design, and extent to that indicated for this Project and who is acceptable to manufacturer.
 2. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of metal canopy systems that are similar to those indicated for this Project in material, design, and extent.

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3. Manufacturer Qualifications: A minimum of twenty-five years of experience in manufacturing overhead canopy systems like those indicated for this Project and with a record of successful in-service performance.
4. Manufacturer to have an annual audit of its quality assurance program.
5. Engineering Responsibility: Engineering analysis by a qualified professional engineer registered in NYS.
6. Welding: Qualified procedures and certified welding personnel according to the following:
Welding shall be in accordance to AWS D1.1, "Structural Welding Code Steel". Steel Shop connections shall be welded, and field connections shall be bolted (Unless otherwise noted in the drawings). Shop welds may be changed to field welds with the approval of the project engineer.
Slag shall be cleaned from welds and prime painted with rust-inhibitive primer.
7. Source Limitations: Obtain pre-engineered metal canopy through one source from a single manufacturer who shall manufacture and install the canopy.

1.06. DELIVERY, STORAGE, AND HANDLING

- A. Deliver components, sheets, panels, and other manufactured items so as not to be damaged or deformed. Package roof and wall panels for protection during transportation and handling.
- B. Handling: Unload, store, and erect roof and wall panels to prevent bending, warping, twisting, and surface damage.
- C. Stack materials on platforms or pallets, covered with tarpaulins or other suitable weather tight and ventilated covering. Store roof and wall panels to ensure dryness. Do not store panels in contact with other materials that might cause staining, denting, or other surface damage.

1.07. PROJECT CONDITIONS

- A. Weather Limitations: Proceed with installation only when weather conditions permit roof and fascia panel installation to be performed according to manufacturer's written instructions and warranty requirements.
- B. Coordinate size and location of concrete foundations and casting of anchor-bolt inserts into foundation walls and footings. Concrete, reinforcement, and formwork requirements are specified in Division 3 Section "Cast-in-Place Concrete."
- C. Field Measurements: The Contractor shall verify locations and elevations of footings relative to finish grade prior to fabrication of columns and other canopy components.
- D. Established Dimensions: The Contractor will, where field measurements cannot be made,

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establish dimensions and proceed with fabrications of metal canopy without field measurements. Contractor is responsible to coordinate footer locations and elevations with any interferences with or attachments to abutting structures.

- E. Site Conditions: Must meet manufacturer's Required Job Site Conditions for Installation. Anchor bolts must be installed per erection drawings. Footings need to be free of debris and anchor bolt threads undamaged. All work surfaces must be even with no exposed product lines.

1.08. WARRANTY

- A. General Warranty: Special warranties specified in this Article shall not deprive Owner of other rights. Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents.

1. Warranty Period: Two years from date of Substantial Completion.

- B. Special Warranty on Panels: Written warranty, executed by manufacturer agreeing to repair or replace roof and fascia panels that fail in materials or workmanship within specified warranty period.

1. Warranty Period: Two years from date of Substantial Completion.

- C. Special Warranty on Panel Finishes: Written warranty, signed by manufacturer agreeing to repair finish or replace metal panels that show evidence of deterioration of factory-applied finishes within specified warranty period. Deterioration of finish includes, but is not limited to, color fade, chalking, cracking peeling, and loss of film integrity.

1. Warranty Period for Roof Panels: 10 years from date of Substantial Completion.

PART 2 – PRODUCTS

2.01. MANUFACTURERS

- A. Available Manufacturer's: Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. TFC Canopy - A division of Centurion Industries, Inc. 1107 North Taylor Road; Garrett, IN 46738; (800) 832-3212; TFC@centurionind.com; www.TFCCanopy.com
2. Austin Mohawk Company, 2175 Beechgrove Place, Utica, New York (888) 632 0272.
3. Shelters Direct Inc. (800) 393 9400.
4. Or equal.

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2.02. MATERIALS

- A. Structural-Steel Shapes: ASTM A 992/A 992M 50.0 ksi minimum yield strength.
- B. Steel Plate, Bar, or Strip: ASTM A 529/A 529M; 50.0 ksi minimum yield strength.
- C. Structural square HSS tube steel: A500 grade B; 46.0 ksi minimum yield strength.
- D. Structural round HSS tube steel: A500 grade B; 42.0 ksi minimum yield strength
- E. Zinc-Coated (Galvanized) Steel Sheet: ASTM A 653/A 653M, Grade 40, with G60 (Z180) coating designation.
- F. Metallic-Coated Steel Sheet Pre-painted with Coil Coating: Steel sheet metallic coated by the hot dip process and pre-painted by the coil-coating process to comply with ASTM A 755/A 755M and the following requirements:
- G. Zinc-Coated (Galvanized) Steel Sheet: ASTM A 653/A 653M, Grade 40, with G60 (Z180) coating designation.
- H. High-Strength bolt assemblies: ASTM A 325/ASTM A 325M, Type 1.
 - 1. Finish: Uncoated.
- I. Anchor Rod assemblies: ASTM F1554, Grade 55.
 - 1. Finish: Uncoated.
- J. Primers: As selected by manufacturer for resistance to normal atmospheric corrosion, compatibility with finish paint systems, capability to provide a sound foundation for field- applied topcoats as follows:
 - 1. Primer: Manufacturer's standard, lead- and chromate-free, non-photochemically reactive, rust-inhibiting primer.

K. DECK MATERIALS

- 1. Metallic-Coated Steel Sheet Pre-painted with Coil Coating: Steel sheet metallic coated by the hot dip process and pre-painted with polyester paint and compatible primer on the face side and wash coat on the back side by the coil-coating process to comply with ASTM A 755/A 755M and the following requirements: Zinc-Coated (Galvanized) Steel Sheet: ASTM A 653/A 653M, G60 (Z180) coating designation; Grade 50. Surface: Smooth, flat, mill finish.

2.03. FABRICATION, GENERAL

- A. General: Design components and field connections required for erection to permit easy assembly and disassembly. Mark each piece and part of the assembly to correspond with previously prepared erection drawings, diagrams, and instruction

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manuals. Fabricate framing to produce clean, smooth cuts and bends. Punch holes of proper size, shape, and location. Cold-formed members shall be free of cracks, tears, and ruptures.

- B. Primary Framing: Shop-fabricate framing components to indicated size and section with base plates, bearing plates, stiffeners, and other items required for erection welded into place. Cut, form, punch, drill, and weld framing for bolted field assembly. Make shop connections by welding or by using high-strength bolts.
 - 1. Brace compression flange of primary framing by angles connected between frame web and purlin or girt, so flange compressive strength is within allowable limits for any combination of loadings.
 - 2. Shop Priming: Prepare surfaces for shop priming according to SSPC-SP 2. Shop prime primary structural members with specified primer after fabrication.
- C. Secondary Framing: Shop-fabricate framing components to indicated size and section by roll forming or break-forming, with base plates, bearing plates, stiffeners, and other plates required for erection welded into place. Cut, form, punch, drill, and weld secondary framing for bolted field connections to primary framing. Make shop connections by welding or by using non-high-strength bolts.
 - 1. Shop Priming: Prepare surfaces for shop priming according to SSPC-SP
 - 2. Shop prime secondary structural members with specified primer after fabrication.

2.04. STRUCTURAL FRAMING

- A. Canopy Framing: Manufacturer's standard structural-framing system, designed to withstand required loads, fabricated from shop-welded, built-up steel plates or structural-steel shapes. Provide frames with attachment plates and splice members, factory drilled for field-bolted assembly.
- B. Bracing: Provide lateral bracing.
- C. Fixed-Base Columns: Fabricate from shop-welded, built-up steel plates or structural-steel shapes to match primary framing; of size required to withstand design loads.

2.05. ROOF PANELS

- A. 20 gauge x 16" wide x 3" smooth or embossed steel panels.
- B. Roof Panel Accessories: Provide components required for a complete roof panel assembly including trim, coping, corner units, clips, seam covers, battens, flashings, gutters, sealants, fillers, closure strips, and similar items. Match materials and finishes of roof panels, unless otherwise indicated.
- C. Panels shall have a finish side coated with a full coat of Silicone Modified Polyester (SMP) paint baked on over a polyester primer. Reverse side shall be protected by a white wash coat baked on over a polyester primer.

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2.06. COMPOSITE METAL FASCIA PANELS

A. Manufacturers:

1. Mitsubishi Chemical America, Inc., Composite Materials Division. Contact: 401 Volvo Parkway, Chesapeake, VA 23320; Telephone (800)422-7270; Fax: (757) 436-1896; E-mail: Product: ALPOLIC Composite Metal Panels. Standard Core ALPOLIC Composite Metal Panels.
2. Or equal panels.

B. Construction

1. Core: Thermoplastic material that meets performance characteristics specified when fabricated into composite assembly. Face Sheets: Aluminum alloy 3105 H14, 0.020 inch (0.51mm) thick and as follows: [Choose coil or spray as applicable to quantity]. Coil coated with a fluoropolymer paint finish that meets or exceeds values expressed in AAMA 2605 where relevant to coil coatings. Bond Integrity: Tested for resistance to delamination as follows: Bond Strength (ASTM C297): 1500 psi (10.3 MPa) Minimum. Peel Strength (ASTM D1781): 22 in-lb/in (100 N-m/m) Minimum.
2. Fire Performance:
 - a. Flame spread (ASTM E84): 5 Maximum.
 - b. Smoke Developed (ASTM E84): 15 Maximum.
 - c. Comply with UL 879
 - d. V-O Rating: Comply with UL94.
3. Production Tolerances:
 - a. Width: +/- 0.04 inch/3 feet (1mm/m).
 - b. Length: +/- 0.04 inch/3 feet (1mm/m).
 - c. Thickness 3mm panel: +/- 0.008 inch (0.2mm).
 - d. Bow: Maximum 0.5% Length or width.
 - e. Squareness: Maximum 0.2 inch (5.1mm).
 - f. The edges of sheets shall be square and trimmed with no displacement of aluminum sheets or protrusion of core material.
4. Panel Thickness: 3mm
5. Composite metal fascia panels accessories
 - a. General: Provide fabricator's standard accessories, including fasteners, clips, anchorage devices and attachments.
 - b. Attach fascia panel to structural frame with a cold formed galvanized channel.

PART 3 - EXECUTION

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3.01 PREPARATION

- A. Clean substrates of substances, including oil, grease, rolling compounds, incompatible primers, and loose mill scale that impair bond of erection materials.
- B. Surface Preparation: Clean and prepare surfaces to be painted according to manufacturer's written instructions for each particular substrate condition and as specified.

3.02 ERECTION OF STRUCTURAL STEEL

- A. Erect metal canopy system according to manufacturer's written instructions and erection drawings.
- B. Do not field cut, drill, or alter structural members without written approval from metal canopy system manufacturer's professional engineer of record.
- C. Set structural framing in locations and to elevations indicated and according to AISC specifications referenced in this Section. Maintain structural stability of frame during erection.
- D. Base plates and Bearing Plates: Clean concrete and masonry bearing surfaces of bond- reducing materials and roughen surfaces before setting base plates and bearing plates. Clean bottom surface of base plates and bearing plates.
 - 1. Set base plates and bearing plates for structural members on leveling nuts.
 - 2. Tighten anchor bolts after supported members have been positioned and plumbed.
 - 3. Pack grout solidly between bearing surfaces and plates so no voids remain. Finish exposed surfaces, protect installed materials, and allow to cure. Shrinkage-Resistant Grout to be provided and installed by the General Contractor.
 - 4. Comply with manufacturer's written instructions for proprietary grout materials.
- E. Align and adjust framing members before permanently fastening. Before assembly, clean bearing surfaces and other surfaces that will be in permanent contact. Make adjustments to compensate for discrepancies in elevations and alignment.
 - 1. Level and plumb individual members of structure.
 - 2. Establish required leveling and plumbing measurements on mean operating temperature of structure. Make allowances for the difference between temperature at time of erection and mean temperature at which structure will be when completed and in service.
- F. Primary Framing: Erect framing true to line, level, plumb, rigid, and secure. Level base plates to a true even plane with full bearing to supporting structures, set with double-nutted anchor bolts. Use grout to obtain uniform bearing and to maintain a level base-line elevation.

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1. Make field connections using high-strength bolts. Tighten bolts by turn-of-the-nut method.
- G. Secondary Framing: Erect framing true to line, level, plumb, rigid, and secure. Fasten secondary framing to primary framing using clips, non-high-strength bolts, and or screws as indicated on manufacturers erection drawings.
- H. Bracing: Install bracing in roof where indicated on manufacturers erection drawings.

3.03 ROOF PANEL INSTALLATION

- A. General: Provide roof panels of full length when possible.
 1. Field cutting by torch is not permitted.
 2. Rigidly fasten eave end of roof panels and allow ridge end free movement due to thermal expansion and contraction.
 3. Flash and seal roof panels with weather closures at eaves, rakes, and at perimeter of all openings. Fasten with self-drilling and tapping screws.
 4. Install screw fasteners with power tools having controlled torque adjusted to tighten without damaging screw threads, or panels.
 5. Use manufacturer supplied fasteners for exterior applications.
 6. Locate and space fastenings in true vertical and horizontal alignment.
- B. Deck Panels: Fasten roof panels to purlins with clip system that requires no "Thru Panel" fasteners. "Deck Clips" must be tested and rated to meet the most critical effects of load factors and load combinations.

3.04 ACCESSORY INSTALLATION

- A. General: Install gutters, downspouts, and other accessories according to manufacturer's written instructions, with positive anchorage and weather tight mounting. Coordinate installation with flashings and other components.
- B. Flashing and Trim: Comply with performance requirements, manufacturer's written installation instructions. Provide for thermal expansion of metal units; conceal fasteners where possible and set units true to line and level as indicated. Install work with laps, joints, and seams that will be permanently watertight and weather resistant. Install exposed flashing and trim that is true to line and levels indicated, with exposed edges folded back to form hems. Install sheet metal flashing and trim to fit substrates resulting in waterproof and weather-resistant performance.
- C. Separations: Separate metal from incompatible metal or corrosive substrates by coating concealed surfaces, at locations of contact, with asphalt mastic or other permanent separation as recommended by manufacturer.

3.05 COMPOSITE METAL FASCIA PANELS INSTALLATION

- A. General: Install aluminum composite panels, and other accessories according to manufacturer's written instructions. Install panels plumb, level and true, in compliance with fabricator's recommendations. Anchor

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panels securely in place, in accordance with fabricator's approved shop drawings. Comply with fabricator's instructions for installation of concealed fasteners and with provisions of Section 07900 for installation of joint sealants.

3.06 INSTALLATION TOLERANCES:

- A. Maximum deviation from horizontal and vertical alignment of installed panels: .025 inch in 20 feet (6.4mm in 6.1m), noncumulative.

3.07 ERECTION AND LOCATION TOLERANCES

- A. Structural-Steel Erection Tolerances: Comply with erection tolerance limits of AISC 303-05, "Code of Standard Practice for Steel Buildings and Bridges."

3.08 CLEANING, TOUCHUP AND PROTECTION

- A. Touchup Painting: Immediately after erection, clean, prepare, and prime or re-prime welds, bolted connections, and abraded surfaces of prime-painted primary and secondary framing, accessories, and bearing plates. Clean and prepare surfaces by hand-tool cleaning, SSPC-SP 2, or power-tool cleaning, SSPC-SP 3. Apply compatible primer of same type as shop primer used on adjacent surfaces.
- B. Touchup Painting: Cleaning and touchup painting of field welds, bolted connections, and abraded surfaces of shop-painted primary and secondary framing, accessories, and bearing plates are included in Division 9 Section "Painting."
- C. Roof and Wall Panels: Remove temporary protective coverings and strippable films, if any, as soon as each panel is installed. On completion of panel installation, clean finished surfaces as recommended by panel manufacturer and maintain in a clean condition during construction.
- D. Replace panels that have been damaged or have deteriorated beyond successful repair by finish touchup or similar minor repair procedures.

***** END OF SECTION *****

PART 1 - GENERAL

1.01 SUMMARY OF WORK

- A. Packaged heating make-up units.
- B. This section includes heating units capable of supplying up to 100 percent outdoor air.
- C. Unit(s) to have a Variable Air Volume Control System capable of adjusting the CFM of the make-up air unit down to 50% of the design CFM. Units to be 15,000 BTU, 34,000 CFM and 125 degree discharge air temp.
- D. All accessories to the system including roof curbs.
- E. Roof flashing and roof patching.

1.02 SUBMITTALS

- A. For units complete with all manufacturer's data and installation instructions.
- B. All unit accessories.

1.03 QUALITY ASSURANCE

- A. Units meeting ETL-Listed to the American National Standard/CSA Standard for Gas Unit Heaters and Gas-Fired Duct Furnaces ANSI Z83.4, CSA 3.7., and Z83.18.
- B. Units meeting the Safety Control Board ETL-Listed to standards UL 60730-2-9, UL 60730-1; CSA E60730-1, and CSA E60730-2-9.

1.04 WARRANTY

- A. All units are provided with the following 2-year full manufacturer's warranty.

PART 2 - PRODUCTS

2.01 GENERAL ASSEMBLY

- A. Unit(s) shall be assembled, tested, and shipped from the factory for indoor or outdoor mounting consisting of the following specifications, deliver all capacities scheduled, and conform to design indicated herein. Alternate layouts or dimensional changes will not be accepted.

2.02 CABINET

- B. Size 10-15" blower(s) - Shall be constructed of minimum 20-gauge G-90 galvanized steel.
 - C. Size 18 and up blower(s) - Shall be constructed of minimum 18-gauge G-90 galvanized steel.
 - D. All metal shall be CNC bent for precise assembly.
-
- 1. The wall panels and roof panels shall be fabricated by forming double standing, self-locking seams that require no additional support.
 - 2. The floor shall be constructed of 16-gauge G-90 galvanized steel.

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PAGE 2

3. The base and floor support channels shall be constructed of 12-gauge G-90 galvanized steel.
 4. The floor and wall panels shall be sealed airtight with a silicone caulk.
 5. All casing panels shall be attached with sheet metal screws which can be removed for field service of large components.
 6. The unit base shall be suitable for curb or flat mount. Casing construction should be suitable for Outdoor or Indoor Installation.
- E. An observation port shall be located on the exterior of the unit for observation of the main flame and pilot flame. All controls, gas valves, modulating controls and electrical components shall be mounted within the control vestibule. The control vestibule shall be an integral part of the unit and not extend outside the exterior casing of the unit and should not be exposed to the main air stream.
- F. The vestibule full size hinged access doors shall have a minimum of two (2) latches. Vestibule doors provide easy access to controls and gas train components. The blower door shall provide easy access to blower, motor and drives and also include a minimum of two (2) latches. All doors shall include 20-gauge G-90 galvanized steel liners for added rigidity and positive seal. All access doors shall have a continuous aluminum hinge with stainless steel pin.
- G. Latches shall be a heavy duty lift and turn type latch that is flush to the casing surface. Latches shall have a sealing gasket to prevent water leakage.
- H. Proportioning dampers shall be installed to provide a mixture of outside air and bypass air. These dampers shall be installed parallel to the direct fired burner to provide the ideal mixing of heated air, bypass air and outside air. At no time will the bypass air be allowed to pass through the burner. Dampers shall be of G-90 galvanized steel mounted on friction-free bearings.
- I. VAV unit(s) - Balancing dampers shall be installed in the burner profile to maintain a constant velocity across the burner. Dampers shall be type G-90 galvanized steel mounted on friction-free bearings.

2.03 AIRFLOW CONFIGURATION

- A. Unit shall be configurable for side (horizontal) discharge through the cabinet.
- B. 100 percent outdoor air unit intake's airflow configuration shall be through use of a fresh/outdoor damper.
- C. Damper: Shall exceed AMCA Class 1A standard for low leakage. With optional insulated and thermally broken. Damper insulation R-value = 2.16. Actuator: a direct-drive damper actuator shall be used with spring return to ensure that the outdoor air section opens when not powered.

2.04 SUPPLY AIR BLOWER AND MOTOR

- A. Blower Motor: Shall be a premium efficiency motor available as: Open Drip Proof (ODP) motor driven by a Variable Frequency Drive. Totally Enclosed Fan Cooled (TEFC) motor driven by a Variable Frequency Drive.
- B. Fans to be selected at or near efficiency peak. Check fan curves provided with job.
- C. Blower and motor assembly shall be dynamically balanced. Wheels balanced as

per AMCA 204-96; Balance Quality and Vibration Levels for fans.

- D. Couplings. Couplings shall be designed for 4-Way (torsional, angular, parallel, and axial) flexing action shaft movement. Single blower shafts for twin blower assemblies will not be acceptable.
- E. External Static: The sum of duct loss plus accessory static (example: filter, hood and damper). All blowers shall be tested and set at rated speed after being installed in the factory assembled unit.

2.05 VARIABLE AIR VOLUME

- A. VFD Manual - Blower will communicate with VFD. VFD will run at user defined static speed set through HMI.
- B. VFD 0-10V - External 0-10V signal will be applied to MUA board for speed reference.
- C. VFD Pressure - Differential pressure sensor located on MUA board. Blower will operate on differential setpoint option.

2.06 SHAFTS AND BEARINGS

- A. Shafts shall be precision ground and polished. Heavy duty, pre-lubricated bearings designed for and individually tested, specifically for use in air handling applications.

2.07 HEATING SYSTEM

- A. The gas burner shall use natural gas at a minimum/maximum inlet-supply pressure to the unit of 14 w.c. -5lbs.
- B. Burner design shall be for using natural gas. Burner ignition shall be of the direct-spark design with remote flame sensing at the pilot assembly to detect the presence of flame in the burner.
- C. Direct-sparking sequence shall last through the complete duration of the trial for ignition period for guaranteed light-off. Each burner ignition module shall have LED indicators for troubleshooting and a set of exposed prongs for testing flame indication signal.
- D. The burner shall have stainless steel combustion baffles attached to a ductile aluminum gas-supply section with no moving parts to wear out or fail. The burner shall be capable of 92% combustion efficiency with a maximum turndown ratio of up to 30 to 1.
- E. Manifold and Input gas pressure gauges.
- F. A manual reset high temperature limit switch located on control board.
- G. High gas-pressure switches to disable heating if gas pressure is too high.
- H. Low gas-pressure switch to disable heating if gas pressure is too low.
- I. Proof-of-closure switch to energize the main-burner circuit only if the motorized gas valve is in a closed position.

2.08 FILTERS

- A. Provide filters as part of unit. All filters shall be furnished and installed to meet the

performance requirements set forth in the schedule.

- B. The filters shall be (2") thick, aluminum mesh, aluminum mesh, or pleated throw away. Aluminum-mesh filters shall have aluminum frames with media to be layers of slit and expanded aluminum, varying in pattern to obtain maximum depth loading. Washable 2" filters shall be enclosed in two-piece, die-cut frame with diagonal supports. Frame shall be constructed of heavy-duty beverage board. Filter media is supported on the air leaving side by a metal grid. All filters shall be installed on tracks for easy removal from the unit.
- C. Shall be either insulated and constructed of G-90 galvanized steel with filters supported by internal slides and with removable access panels.
- D. Unit shall have an optional adjustable pressure differential sensor for the filter bank to alert in the event of a clogged filter.

2.09 ELECTRICAL

- A. All controls shall be pre-wired and housed in an insulated electrical cabinet within the unit to protect against risk of condensation.
- B. Unit(s) shall be provided with single point electrical connection.
- C. Unit(s) shall be provided with a door safety switch that de-energizes the supply fan when the door is opened.
- D. Unit(s) shall be provided with a factory mounted averaging intake air temperature sensor to allow for accurate intake temperature reading regardless of how the OA/RA dampers are positioned.
- E. The electrical cabinet shall be outfitted with the following:
 - 1. LED electrical cabinet service light with automatic activation upon door switch.
 - 2. Color wiring schematics laminated and secured to the interior wall of the cabinet doors.
 - 3. Factory mounted disconnect with bottom knockouts.
- F. Up to 4 additional space mounted HMIs available. Additional HMIs shall allow for full programming capabilities and are outfitted with integral temperature and humidity sensors. Additional HMIs shall be capable of being individually averaged for space temperature/humidity readings. All HMIs shall be wired using standard CAT5/6 cables.

2.10 CONTROLS

- A. Unit shall be outfitted with a control board to allow for full control of the entire unit.
- B. Provide onboard air flow switch located on MUA control board to sense air flow.
- C. All unit controls shall be compatible with BACnet and LonWorks based building management systems.
- D. Unit(s) shall be outfitted with CASLink cloud based monitoring, which monitors every point of operation. Provides configurable automated fault alert e-mails, and remote control capabilities.

- E. Integrated cellular module to provide remote connection to monitoring services to view both real time and historical unit operation. Data shall be stored utilizing a cloud computing service for a minimum of 3 years. Data sample rate shall be a maximum of 60 seconds.
- F. Temperature Control System:
 - 1. **Discharge Temp Control (Heating)** - Unit modulates the burner flame to accurately maintain the desired discharge temperature set point and compensate for fluctuations in entering air temperature, air volume and % of OA using heating PID controls.
 - 2. **Space Temp Control (Heating)** - Unit modulates the burner flame to accurately maintain the desired space temperature set point and compensate for fluctuations in entering air temperature, air volume and % of OA using heating PID controls. Minimum and maximum discharge set points can be set to limit the temperature entering the space. An optional additional HMI or room thermostat can be used to determine the space temperature. If no temperature sensor is available in the space, the unit will use an internal return temperature sensor.
- G. Activation Controls:
 - 1. **Activate Based on Intake (Heating)** - Unit will activate heating when the intake temperature drops below the desired set point.
 - 2. **Activate Based on Space (Heating)** - Unit will activate heating when the space temperature drops below the desired set point.
 - 3. **Activate Based on Both (Heating)** - Unit will activate heating when the space AND intake temperature drop below the desired set point.
 - 4. **Activate Based on Either (Heating)** - Unit will activate heating when the space OR intake temperature drops below the desired set point.
 - 5. **Activate Based on Stat (Heating)** - Unit will activate heating when the space thermostat sends a 24V signal to the main control board. Unit will modulate to maintain a constant discharge heat set point.

2.11 CURBS

- A. Unit shall be factory assembled, and constructed of 12-gauge galvanized steel.
- B. Curb shall be fully insulated with 1" acoustical and thermal insulation.
- C. Curb shall be factory outfitted with duct support hangers.

2.12 ACCEPTABLE MANUFACTURERS

- A. Rupp Air Company – Unit Model # RAM 22-M, used herein as the basis of the design.
- B. Carrier Corporation.
- C. Cambridge Air Solutions Corporation.
- D. Greenheck Company.

PART 3 – EXECUTION

3.01 EXAMINATION

- A. Examine all areas and conditions under which packaged units are to be installed. Do not proceed with work until unsatisfactory conditions have been corrected in a manner acceptable to Installer.

3.02 INSTALLATION

- A. Install units in accordance with manufacturer's instructions, drawings, written specifications, manufacturer's installation manual and all applicable building codes.

3.03 CONNECTIONS

- A. Piping installation requirements are to meet all code requirements. Install piping to allow service and maintenance.
- B. Duct installation requirements are specified in other Division 23 Sections. Drawings indicate the general arrangement of ducts.
- C. Electrical connections conform to applicable requirements in Division 26 Sections.

3.04 SYSTEM START-UP

- A. System start-up is performed by a factory-trained Service Technician.

**** END OF SECTION ****

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PAGE 1

PART 1 - GENERAL

1.01 REQUIREMENTS INCLUDED

- A. Infrared low intensity radiant gas heating systems.
- B. All system accessories for a complete system.
- C. All roof and wall penetrations; flash and make watertight.

1.02 RELATED SECTIONS

1.03 SYSTEM GENERAL DESIGN

- A. Condensing System: Design gas-fired radiant systems to operate such that water vapor present in products of combustion will be condensed, and this heat of condensation will be extracted by the system and will be added to the heated space.
- B. Vacuum Vented: To preclude the possibility of combustion gases escaping into the building, the entire system must be under a negative pressure at all times and vacuum vented to the outside atmosphere.

1.04 RELATED SECTIONS

- A. Document 00501 – Agreement Form: Incorporating monetary values of accepted Alternates.
- B. Document 00201 – Instructions to Bidders – Forms of Proposal:
- C. Section 01 3300 – Submittals

1.05 REFERENCE REQUIREMENTS

- C. Codes and Standards
 - 1. American National Standard / CSA Standard Gas-Fired Low Intensity Infrared Heaters: Construct and certify gas-fired infrared heaters in accordance with latest edition ANSI Z83.20 / CSA 2.34 "Gas-Fired Low-Intensity Infrared Heaters" including all current supplements.
 - 2. Installation Compliance: United States: Refer to National Fuel Gas Code NFPA 54/ANSI Z223.1 - latest revision. Canada: Refer to Natural Gas Code CSA B149.1 - latest revision.
 - 3. CSA Compliance: Provide CSA Seal affixed to each burner name plate and provide CSA Certification of heater design as vented or unvented infrared heater for indoor installation.
 - 4. National Standard Gas Piping Compliance: Install and connect gas piping to gas fired infrared heaters in accordance with United States: Refer to National Fuel Gas Code NFPA 54/ANSI Z223.1 - latest revision. Canada: Refer to Natural Gas and Propane Installation

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Code CSA B149.1 - latest revision.

5. National Electrical Code Compliance: Install and connect electrical wiring to gas fired infrared heaters in accordance with: 1.) United States: Refer to National Electrical Code®, NFPA 70 - latest revision. Wiring must conform to the most current National Electrical Code®, local ordinances and any special diagrams furnished. 2.) Canada: Refer to Canadian Electrical Code, CSA C22.1 Part 1 - latest revision.
6. National Performance Rating for Gas Fired Infrared Heaters Standard: Radiant output of gas fired infrared heaters shall be rated in accordance with AHRI Standard 1330. Refer to Performance Rating for Radiant Output of Gas Fired Infrared Heaters Standard CAN/ANSI/AHRI 1330-2015.

PART 2 – PRODUCTS

2.01 INFRARED LOW INTENSITY RADIANT GAS HEATING COMPONENTS

A. Burner Box:

1. Natural Gas model, burner assemblies consisting of heavy duty cast iron burner heads, other substitutions will not be accepted. Pre-wired gas controls with direct spark ignition module, and combustion air filters supplied. Provide minimum numbers of burners indicated to insure proper radiant heat distribution. Fewer burners of larger capacity will not be accepted. Burners shall be designed for firing in tandem without adverse effects from combustion gases from upstream burners.
2. Design firing rate of burners shall be 60,000 Btu's per hour. Clearances to combustibles surface as measured from the tube surface shall not be less than 14" above, 14" below, 14" on each side.
3. Premix gas and air: Provide burners to totally pre-mix air and gas required for combustion. Constant Air/Gas Ratio: Provide burners designed to maintain constant proportion of fuel gas to filtered combustion air. Introduce both fuel gas and air at atmospheric pressure, and establish flow of both by means of negative pressure on the downstream side of the flow metering orifices. Design so that if combustion air flow is impeded for any reason, gas flow rate will decrease in constant proportion to maintain proper gas/air mixture for complete combustion.

B. Burner Controls

1. Factory Wired: All burners shall be factory wired for 115 VAC with transformer for 24

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VAC DSI operation and supplied with a grounded 24-30 inch (61–76 cm) three wire pigtail located at rear of burner

2. Fail-Safe Controls: To assure a high degree of fail-safe operation, the design shall preclude main flow of gas if any or all of the following abnormal conditions occur:
 - a. Power fails (Gas valves in burners close in safe position).
 - b. Main Valve fails in open position
 - c. Vacuum pump motor fails (Vacuum proving switch cuts power to burners).
3. Ignition Controls: All gas vacuum-firing burner units shall be equipped with a Direct Spark Ignition Module (DSI). The DSI module shall have a 15-second flame safety time per ignition trial before lockout occurs. In addition, the DSI module shall be capable of a minimum of 3 trials for ignition to provide maximum reliability.

C. Vacuum Pumps, 3/4 HP:

1. Outdoor Venting: The system shall vent all products of combustion outdoors by means of the vacuum pump.
2. Motor: Vacuum pump shall be equipped with a 3/4 horsepower, 60 hertz, 208-230/460 volts AC, 3450 RPM, three phase motor. This motor shall have thermal overload protection, high temperature sealed ball bearings, and shall be constructed in accordance with electric motor industry standards.
3. Motor: Vacuum pump shall be equipped with a 3/4 horsepower, 60 hertz, 120/230 volts AC, 3450 RPM, single phase motor. This motor shall have thermal overload protection, high temperature sealed ball bearings, and shall be constructed in accordance with electric motor industry standards.
4. Housing: The scroll of this pump shall be cast iron with a minimum metal thickness of approximately 3/16 inch (.48 cm). The impeller wheel shall be pressure cast 319-alloy aluminum with a minimum metal thickness of approximately 3/32 inch (.24 cm).
5. Pressure Switch: As an additional safety measure, there will be a low voltage (24 VAC) interlock circuit from the pressure switch (located at the inlet to the vacuum pump) to the controller to prove pump operation.
6. High Temperature Acoustical Isolation: The vacuum pump shall be acoustically isolated from the system with a flexible connector with a constant service temperature rating of 350°F (177°C) minimum. The connection between the 4.5" (11 cm) pump inlet and tailpipe is made with acoustic boot and clamps provided. The discharge connection is made with an acoustic boot and schedule 40 steel pipe or 4 inch (10 cm) ABS schedule 5

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pipe and fittings. The motor in the vacuum pump shall be secured with rubber mounts for acoustical isolation.

7. Rotation: Vacuum pump motor requires a grounded circuit 208-230/460 volts AC, three phase, 60 hertz for a maximum of 2.5 full load amps via a variable frequency drive. This motor must have the same rotation to match the direction of the arrow on the fan scroll. If the motor is not rotating in this direction, it must be reversed by interchanging any 2 line leads as indicated on the motor nameplate.
8. Speed Control: Vacuum pump motor speed and power supply shall be from a 3/4 HP (208-230/460V) three phase or 1HP (120/230VAC) single phase variable frequency drive. Variable frequency drive power input shall be specified as either 120/230VAC, 1 ph, 60 Hz, 16.6A; or 208-230/460V, 3 ph, 60 Hz, 6.9A. Variable frequency drive output frequency shall control the speed of the vacuum pump motor by speed reference following analog signal.

D. Reflectors – High Efficiency

1. Provide high radiant reflective aluminum reflectors installed over all heat exchanger tube. Provide wide parabolic design reflector with 12 reflective surfaces that when tested with select models* can enhance model to an Infrared Factor (IF) of 15 when tested in accordance to AHRI standard 1330 (latest edition) for Radiant Output of Gas Fired Infrared Heaters. Reflector shall reflect 100% of the infrared energy that it receives from the heat exchanger tube directly to the floor. Reflectors with less than 12 reflective surfaces shall not be allowed. In order to maximize radiant output and reduce convective heat losses, reflectors are to extend below the bottom of the heat exchanger tube. Provide continuous reflector over all tube and fitting heat exchanger surfaces. Provide reflector end caps as necessary to reduce convective heat losses.
2. Rated in accordance with AHRI Standard 1330 @ 30' tested at horizontal orientation with high efficiency reflector. Provide reflector joint pieces over heat exchanger fittings such as elbows so reflector covers heat exchanger continuously. In order to maximize radiant output and reduce convective heat losses, reflectors are to

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extend below the bottom of the heat exchanger tube.

3. Over all fittings: All reflectors at termination of the heat exchanger pipe and any elbows shall have end caps to prevent convective heat from escaping.

4. Over Entire pipe Network: Reflectors shall be installed on all radiant pipe and tail pipes.

2.02 ACCEPTABLE MANUFACTURERS

A. ROBERTS GORDON Company CORAYVAC system.

B. SPACE – RAY infrared gas heaters.

C. Re-Verber-Ray infrared gas heaters.

PART 3 – EXECUTION

3.01 INSTALLATION OF GAS FIRED INFRARED HEATERS

A. General

Install gas fired infrared heaters as indicated, in accordance with manufacturer's installation operation and service manual and in compliance with applicable codes and approvals. Allow adequate space for servicing or removal of the unit without disturbing other piping or equipment.

B. Support

Suspend heat exchanger, burner, gas piping, conduit, and reflectors from building substrate as indicated, or if not indicated, in manner to provide durable and safe installation, and in accordance with manufacturer's installation operation and service manual. Mounting height to be a minimum 15 feet from floor level.

C. Clearances to Combustibles

Always maintain clearance to combustibles as outlined and printed on burner nameplate and in manufacturer's product data. Measure clearance distance from surface of heat exchanger or as indicated by approval agency's listing.

D. Venting

Install vent piping as indicated on plans. Terminate where indicated on the drawings with a vent terminal assembly as supplied by the manufacturer. The venting must be installed in accordance with the requirements within the installation operation and service manual and the following codes: United States: Refer to National Fuel Gas Code NFPA 54/ANSI Z223.1 - latest revision.

E. Gas Piping

Install gas piping as indicated and in accordance and in compliance with applicable codes and approval: United States: Refer to National Fuel Gas Code NFPA 54/ANSI Z223.1 - latest revision.

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1. Required Gas Supply Inlet Pressures:
Natural Gas Units Required Minimum Gas Pressure Maximum Gas Pressure
20,000-120,000 Btu/h 4.5" wc 14" wc
2. Local Codes: Gas supply piping must meet local requirements and be sized in accordance with Btu/h demand, available pressure and total length of supply line required for the installation. Connection from supply line to burner unit must be made in accordance with installation operation and service manual. Gas shut-off cock, as supplied with unit, and controls in unit must not be subjected to more than 1/2 lb. or 14" wc pressure.
3. Drip Legs: Provide drip legs at all gas risers.

F. Electrical Wiring

Install electrical wiring per codes. Connect power wiring to burners and vacuum pumps, control wiring between burners, vacuum pump, control panels, thermostats, timers, relays, and transformers, in accordance with manufacturer's wiring diagrams.

G. Thermostats

Provide where indicated, 24VAC thermostat, connected to control system. Mount thermostat 5' 6" (1.67 m) above finish floor or otherwise as noted on the drawing. Low voltage thermostats shall be numbered instead of marked in degrees and shall not have thermometers. Low voltage wiring must follow local codes.

3.02 FIELD QUALITY CONTROL

A. Start-Up

Start-up, test, and adjust gas fired infrared heaters in accordance with manufacturer's start-up instructions in the installation operation and service manual, and Utility Company's requirements. Check and calibrate controls, adjust burners if applicable according to manufacturer's installation operation and service manual instructions for maximum efficiency.

3.03 CLOSEOUT PROCEDURES

A. Training

Provide services of manufacturer's technical representative to instruct operating personnel in operation and maintenance of gas fired infrared heaters.
Schedule instruction with operating building owner, provide at least 7 days' notice.

3.04 WARRANTY

A. Provide written warranty, by manufacturer, agreeing to replace/repair, within warranty period, components of gas fired infrared systems furnished by manufacturer, which are defective in either material or workmanship, provided manufacturer's instructions for handling, installing, protecting, and maintaining units have been adhered to during warranty periods follows:

1. Three (3) year warranty on the burner system from the date of final acceptance of the infrared heaters.

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2. Twenty-Five (25) year warranty from the date of final acceptance of 3/4 HP cast iron vacuum pump housing and scroll.

3. Three (3) year warranty from date of final acceptance of all other components.

3.05 QUALITY ASSURANCE

A. Manufacturer's Qualifications

Firms regularly engaged in the manufacture of gas fired infrared systems with characteristics, sizes, and capacities required, whose products have been in satisfactory use in similar service for not less than 15 years.

**** END OF SECTION ****

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PART 1 – GENERAL

1.01 SCOPE OF WORK

- A. Furnish and install equipment and materials required to provide complete electrical systems and alterations.
- B. Refer to equipment ratings and electrical requirements, size wire and conduit to meet all codes.
- C. Generally work is the power for fuel tanks, monitoring system, fuel pumps, fuel dispensers, associated work, and fuel island canopy lighting. Provide and install all necessary conduit, conductors, pull boxes, junction boxes, switches, and associated items for complete electrical systems.

1.02 REQUIREMENTS

- A. Systems shall conform with the applicable portions of American National Standards Institute (ANSI), Institute of Electrical and Electronics Engineers (IEEE), Insulated Power Cable Engineers Association (IPCEA), National Electrical Manufacturer's Association (NEMA), International Electrical Testing Association (INETA) and the associated utility company standards.
- B. Systems shall conform with the applicable portions of the requirements set forth in the National Electrical Code (NFPA-70, latest edition)
- C. Components and/or systems tested by Underwriters Laboratories, or other suitable nationally recognized independent testing laboratories, shall bear the associated label, seal or stamp of conformance.
- D. All penetrations through fire rated assemblies shall be firestopped to match wall rating.
- E. All penetrations through exterior envelopes and equipment shall be sealed water and air tight continuous from exterior to interior.

1.03 MANUFACTURER'S SAFETY DATA SHEETS (MSDS)

- A. Provide a bound, indexed assembly of pertinent equipment and materials (including applicable subcontractor items).

1.04 CONNECTIONS TO EQUIPMENT THAT IS EXISTING AND/OR FURNISHED BY OTHERS

- A. Furnish and install branch circuits serving equipment that is existing and/or furnished by others in accordance with the sizes and locations shown on the drawings, complete with final connections, including provisions for disconnects and receptacles as required.

1.05 FABRICATION DRAWINGS, MATERIAL LISTS AND EQUIPMENT SUBMITTALS

- A. Prior to installation, submit fabrication drawings, material lists and equipment submittals (shop drawings) for approval in accordance with the following:

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1. It is the intent of these specifications to define the requirements for fabrication drawings, material lists and equipment submittals. Questions regarding these requirements shall be directed to the Engineer prior to submission.
2. Fabrication drawings and material lists shall conform with the requirements herein specified.
3. Equipment submittals, unless otherwise specified, shall conform to the following:
 - a. Submittals shall be complete with the manufacturer's product description literature.
 - b. Submittals shall include a complete listing associated parameters contained in the bidding documents (materials, finishes, capacities, electrical characteristics, etc.).
 - c. Submittals shall be clearly marked to differentiate between the applicable and extraneous portions.
 - d. Submittal shall have a submittal cover page (not transmittal page), with equipment and tagging, project specifics, supplier, verification contractor has reviewed, and space for comments.
4. Submittals (including re-submissions), prepared and transmitted in electronic format, shall be accompanied with a hard copy comprised of original, printed product literature. Hard Copy required for final approval.
5. Unless otherwise noted or herein specified, the following is required:
 - a. Material lists:
 - 1) Wire and conduit.
 - b. Equipment submittals:
 - 1) Luminaires.
 - 2) Switches and receptacles.

PART 2 – PRODUCTS

2.01 ACCEPTABLE MANUFACTURERS

- A. Materials and equipment shall be in strict accordance with the parameters herein specified.
- B. Material and/or equipment of the same category (e.g.: service entrance equipment, panelboards, load centers, circuit breakers, receptacles, switches, etc.) shall be of the same manufacturer.
- C. Materials shall match existing where connecting to existing system.

2.02 LIGHT FIXTURES

- A. Canopy light fixtures shall be "Scottsdale Vertex – SCV ", 150 watt LED, 20,000 lumens, 16" x16", surface mounted, petroleum canopy lights, as manufactured by LSI Lighting Company.

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- B. Cree Lighting Company, CPY series equal to above specifications.
- C. Parmida LED gas station canopy light, 150 watts, 21,000 lumens, similar specifications to above lights.

2.03 ACCESSORIES AND COMPONENTS

- A. It is the intent of this specification that systems and equipment shall be complete with the necessary quantity of accessories and components required to insure a properly functioning installation.

PART 3 – EXECUTION

3.01 INSTALLATION

- A. Work shall be expeditiously executed in a well-planned, organized, neat, workmanship like manner.
- B. Unless otherwise noted or herein specified, materials and equipment shall be installed in strict accordance with the manufacturer's recommendations.
- C. All underground electrical work to be rated for that location and be watertight in all respects.
- D. Electrical work herein specified and/or noted shall be executed in strict conformance with the National Electrical Code.

3.02 REMOVALS

- A. Unless otherwise noted or herein specified, equipment and materials shown and/or specified to be removed (including related accessories and appurtenances) shall become the Contractor's property and shall not be permitted to accumulate but shall be promptly removed from the job site.
- B. Work shall be carefully executed to prevent the disruption of, or damage to, new work or existing work which is to remain.

3.03 PROTECTION

- A. Materials, equipment and accessories shall be covered and protected during construction.
- B. Materials, equipment and accessories damaged during construction shall be replaced at no cost to the Owner.

3.04 SUPPORTS

- A. Utilize galvanized components (wherever practical) or field apply 2 coats of corrosion resistant primer.

3.05 FINAL CLEANING

- A. Remove trash and debris associated with all electrical work .

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- B. Hand wash wall surfaces and equipment and remove any foreign substance (adhesive, extraneous paint, droppings, etc.).

3.06 RECORD DRAWINGS

- A. Promptly record (in a neat, legible and red-color-only accentuated fashion, on a complete, designated set of bidding documents containing no other markings) significant differences reflected by the actual installation (sizes, capacities, locations and features of distribution systems and equipment).
- B. Additionally, prepare appropriately scaled drawings showing conduit locations below grade and within concrete slabs.

3.07 OPERATION AND MAINTENANCE MANUAL

- A. Near the completion of work, submit three copies of indexed Operation and Maintenance and submittal information for to mechanical contractor for incorporation into project O&M manual.

3.08 INSPECTION

- A. Obtain all inspection certificates and deliver to the Owner.

***** END OF SECTION *****

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PART 1 - GENERAL

1.01 SUMMARY

- A. This Section includes the following:
 - 1. Preparing and grading subgrades for tank work and pavements.
 - 2. Excavating and backfilling for structures including tank work.
 - 3. Sub-base course for pavements.
 - 4. Excavating and backfilling for underground utilities.
- B. Related Sections:
 - 1. Section 32 1216 – Asphalt Paving
 - 2. Section 03 3000 – Concrete work
 - 3. Section 33 5600 – Fuel tank and associated work
 - 4. Section 26 5000 – Removal and disposal of storage tanks

1.02 DEFINITIONS

- A. Backfill: Satisfactory soil materials used to fill an excavation.
- B. Bedding Course: Layer placed over the excavated subgrade in a trench before laying pipe.
- C. Borrow: Satisfactory soil imported from off-site for use as fill or backfill.
- D. Excavation: Removal of material encountered above subgrade elevations.
- E. Additional Excavation: Excavation below subgrade elevations as directed by the Architect. Additional excavation and replacement material will be paid for according to Contract provisions for changes in the Work.
- F. Unauthorized Excavation: Excavation below subgrade elevations or beyond indicated dimensions without direction by the Architect. Unauthorized excavation, as well as remedial work directed by the Architect for such unauthorized excavation, shall be without additional compensation.
- G. Fill: Satisfactory soil materials used to raise existing grades.
- H. Structures: Retaining walls, stairs, ramps, curbs, catch basins and manholes, or other man-made stationary features constructed above or below ground surface.
- I. Subbase Course: Layer placed between the subgrade and asphalt pavement or the layer placed between the subgrade and surface of concrete pavement or walk.
- J. Subgrade: Surface or elevation of a completed excavation or top surface of a fill or backfill immediately below subbase, drainage fill, or topsoil materials.
- K. Utilities include on-site underground pipes and conduits.

1.03 SUBMITTALS

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- A. Product data for the following:
 - 1. Filter and soil stabilization fabrics.
- C. Samples of the following:
 - 1. 20-lb sample of subbase material.
 - 2. 12 x 12 inch sample of filter and soil stabilization fabrics.
- D. Test Reports for Architect's final approval prior to construction:
 - 1. Laboratory sieve analysis of each type of material proposed for fill and backfill.
 - 2. Classification according to ASTM D 2487 of each on-site or borrow soil material proposed for fill and backfill.
 - 3. Laboratory compaction curve according to ASTM D 1557 of each on-site or borrow soil material proposed for fill and backfill.
 - 4. Report of actual unconfined compressive strength and/or results of bearing tests of each stratum tested.

1.04 QUALITY ASSURANCE

- A. Codes and Standards: Perform earthwork complying with requirements of authorities having jurisdiction. Notify DIG SAFELY NEW YORK at 1-800-962-7962 prior to commencing work.
- B. Testing and Inspection Service: The Owner will employ a qualified independent testing agency to perform field and laboratory testing, and inspection required.
- C. Reference Standards: The following standards, as referenced herein, shall be applicable:
 - 1. "Standard Specifications, Construction and Materials", New York State Department of Transportation, Office of Engineering.
 - 2. "New York State Standards and Specifications for Erosion and Sediment Control".

1.05 PROJECT CONDITIONS

- A. Site Information: Data in subsurface investigation reports was used for the basis of the design and is included for information only. Conditions are not intended as representations or warranties of accuracy of continuity between soil borings. The Owner will not be responsible for interpretation or conclusions drawn by Contractor from this data.
- B. Additional test borings and other exploratory operations may be performed by Contractor, at the Contractor's option; however, no change in the Contract Sum will be authorized for such additional explorations.
- C. Existing Utilities: Locate existing underground utilities in areas of excavation work. If utilities are indicated to remain in place, provide adequate means of support and protection during earthwork operations.
- D. Do not interrupt existing utilities serving facilities occupied by the Owner or others except when permitted in writing by Owner and then only after arranging to provide temporary utility services according to requirements indicated:
- E. Contact utility-locator service for area where Project is located before

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excavating.

- F. Should uncharted, or incorrectly charted, piping or other utilities be encountered during excavation, consult utility owner immediately for directions. Cooperate with Owner and utility companies in keeping respective services and facilities in operation. Repair damaged utilities to satisfaction of utility owner.
- G. Protection of Persons and Property: Barricade open excavations occurring as part of the Work and post with warning lights. Operate warning lights as recommended by authorities having jurisdiction.

1.06 OWNER'S INSURANCE REPRESENTATIVE

- A. Contact the owner and architect so the owner can arrange for the school's insurance company to be on site and witness the work at the following three stages of the work:

- 1st - Before starting any site work related to the fuel tanks or fuel lines.
 - 2nd - As tank is being excavated.
 - 3rd - When tank is being removed.

PART 2 - PRODUCTS

2.01 SOIL MATERIALS

- A. General: no site excavated material shall be used for fill or backfill on this project.

- B. Subbase Material: Naturally or artificially graded crushed gravel or crushed stone conforming to NYS DOT Specifications Item 304-2.02, Type 2 as follows:

U.S. Sieve No.	Percent Passing by Weight
2 inch	100
¾ inch	25-60
No. 40	5-40
No. 200	0-10

- C. Tank Backfill Material: Pea Gravel NYSDOT Item No. **703.0203** round gravel and have the following gradation by weight: % Passing Sieve.

U.S. Sieve No.	Percent Passing by Weight
½ inch	70-100
¾ inch	30-50
No. 40	0-15

- D. Backfill Material general use: Imported, naturally or artificially graded mixture of sand, natural or crushed gravel or crushed stone conforming to NYS DOT Specifications Item 304-2.02, Type 4 as follows:

U.S. Sieve No.	Percent Passing by Weight
2 inch	100
¾ inch	30-65
No. 40	5-40
No. 200	0-10

- E. Sand: Clean, coarse manufactured or natural sand, free of organic materials,

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conforming to the following gradation:

U.S. Sieve No.	Percent Passing by Weight
1/4 inches	100
No. 50	35
No. 100	10

- F. Ordinary Fill Material: Satisfactory soil materials free of rock or gravel larger than 2 inches in any dimension, debris, waste, frozen materials, vegetation and other deleterious matter. Be of such a nature and character that it can be compacted to the specific densities in a reasonable length of time. Have a maximum dry density of not less than 115 pounds per cubic foot.

2.02 ACCESSORIES

- A. Filter Fabric: Nonwoven, pervious geotextile made from polypropylene, polyolefin, polyamide or polyester fibers, or a combination, manufactured specifically as a filter fabric that meets or exceeds the listed minimum physical properties determined according to ASTM D 4759 and the referenced standard test method in parentheses:
1. Grab Tensile Strength (ASTM D 4632): 120 lb.
 2. Apparent Opening Size (ASTM D 4751): #70 U.S. Standard sieve.
 3. Water Flow Rate: (ASTM D 4491): 120 gallons per minute per sq. ft.
 4. Puncture Resistance (ASTM 4833): 65 lb.
 5. Tear Strength (ASTM D 4533): 50 lb.
 6. Manufacturers: Subject to compliance with requirements, provide product by one of the following or approved equivalent:
 - a. Mirafi, Ten Cate Nicolon; Mirafi 140N.
 - b. Propex Geosynthetics, BP Amoco Group; Geotex 451.
 - c. Carthage Mills; FX-45HS.
- B. Soil Stabilization Fabric under all pavements, lining all trenches, and lining all new tank excavations before any backfill is placed.. Woven geotextile made from UV stabilized polypropylene silt film that meets or exceeds the listed minimum physical properties determined according to ASTM D 4759 and the referenced standard test method in parentheses:
1. Grab Tensile Strength (ASTM D 4632): 200 lb.
 2. Apparent Opening Size (ASTM D 4751): #40 U.S. Standard sieve.
 3. Water Flow Rate: (ASTM D 4491): 4 gallons per minute per sq. ft.
 4. Puncture Resistance (ASTM 4833): 90 lb.
 5. Tear Strength (ASTM D 4533): 70 lb.
 6. Manufacturers: Subject to compliance with requirements, provide product by one of the following or approved equivalent:
 - a. Mirafi, Ten Cate Nicolon; Mirafi 500X.
 - b. Propex Geosynthetics, BP Amoco Group; Geotex 200
 - ST. c. Carthage Mills; FX-55.

PART 3 - EXECUTION

3.01 PREPARATION

- A. Protect structures, utilities, sidewalks, pavements, and other facilities from damage caused by settlement, lateral movement, undermining, washout, and other hazards created by earthwork operations.

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- B. Protect subgrades and foundation soils against freezing temperatures or frost. Provide protective insulating materials as necessary.
- C. Provide erosion control measures to prevent erosion or displacement of soils and discharge of soil-bearing water runoff or airborne dust to adjacent properties and walkways.

3.02 DEWATERING

- A. Prevent surface water and subsurface or groundwater from entering excavations, from ponding on prepared subgrades, and from flooding Project site and surrounding area.
- B. Protect subgrades and foundation soils from softening and other damage by rain or water accumulation.
- C. Remove water to prevent soil changes that are detrimental to stability of subgrades and foundations. Install a dewatering system (provide and maintain pumps, well points, sumps, suction and discharge lines, and other components) to keep subgrades and excavations dry and convey rain and ground water as well as removed water away from excavations. Maintain the system until dewatering is no longer required.

3.03 EXCAVATION, GENERAL

- A. Unclassified Excavation: Excavate to required subgrade elevations regardless of the character of surface, and subsurface conditions encountered, including rock, timbers, debris, soil materials, and obstructions.
- B. Rock excavation: Rock excavation in trenches and pits includes removal and disposal of materials and obstructions encountered which cannot be excavated with a $\frac{3}{4}$ cu. yd. capacity bucket on track-mounted power excavator.
 - 1. Typical of materials classified as rock are boulders $\frac{1}{2}$ cu. yd. or more in volume, solid rock, rock in ledges, and rock-hard cementitious aggregate deposits.
 - 2. Do not perform rock excavation work until material to be excavated has been cross-sectioned and classified by Architect. Such excavation will be paid on basis of contract conditions relative to changes in work. Unit price for rock excavation includes drilling, trimming, shelving of rock and removal from site.
 - 3. Rock payment lines are limited to the following:
 - a. Two feet outside of concrete work for which forms are required, except footings.
 - b. In pipe trenches, six inches below invert elevation of pipe and two feet wider than inside diameter of pipe, but not less than three feet minimum trench width.
 - c. Neat outside dimension of concrete where no forms are required.
 - d. Under slabs on grade, six inches below bottom of concrete slab.
 - e. Under pavements, six inches below aggregate subbase materials.
- C. Unauthorized excavation: unauthorized excavation consists of removal of materials beyond required elevations or dimensions without specific direction from the Architect. Unauthorized excavation, as well as remedial work directed by the Architect

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shall be at the Contractor's expense.

1. Under footings, foundation bases, or retaining walls, fill unauthorized excavation by extending indicated bottom elevation of footing or base to excavation bottom, without altering required top elevation. Lean concrete fill may be used to bring elevations to proper position, when acceptable to the Architect.
 2. Elsewhere, backfill and compact unauthorized excavation as specified for authorized excavation of same classification, unless otherwise directed by the Architect.
- D. Additional excavation: When excavation has reached required elevations, notify the Architect who will inspect conditions:
1. If unsuitable bearing materials are encountered at required elevations, carry excavations deeper and replace excavated material as directed by the Architect.
 2. Removal of unsuitable material and its replacement as directed will be paid on basis of contract conditions relative to changes in work.
- E. Stability of Excavations: Comply with local codes, ordinances, and requirements of authorities having jurisdiction to maintain stable excavations. Shore and brace where sloping is not possible because of space restrictions or stability of material excavated. Maintain sides of excavations in safe condition until completion of backfilling. Protect temporary slopes against erosion by covering them with geotextile such as filter fabric.
1. Provide materials for shoring and bracing in good serviceable condition. Maintain shoring and bracing in excavations regardless of time period excavations will be open.
- F. Cold Weather protection: Protect excavation bottoms against freezing when atmosphere temperature is below 35°F (1°C).

3.04 EXCAVATION FOR STRUCTURES

- A. Excavate to indicated elevations and dimensions within a tolerance of plus or minus 1 inch. Extend excavations a sufficient distance from structures for placing and removing concrete formwork, installing services and other construction, and for inspections. Excavation for Underground Structures: Excavate to elevations and dimensions indicated within a tolerance of plus or minus 1 inch. Do not disturb bottom of excavations intended for bearing surface.

3.05 EXCAVATION FOR PAVEMENTS

- A. Excavate surfaces under walks and pavements to indicated cross sections, elevations, and grades.

3.06 EXCAVATION FOR UTILITY TRENCHES

- A. Excavate trenches to indicated gradients, lines, depths, and elevations.
- B. Excavate trenches to the uniform width required for particular item to be installed providing ample working room. Provide clearance as indicated and as required on both sides of pipe or conduit.

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- C. Trench Bottoms: For all storm drainage pipes and other pipes or conduit 6" or larger in nominal size, excavate to subbase depth indicated, or if not otherwise indicated, to 6" below bottom of pipe elevation to allow for bedding course.
 - 1. For conduit or pipes other than storm drainage that are less than 6" in nominal size, do not excavate beyond indicated depth. Hand excavate bottom cut to accurate elevations and support pipe on undisturbed soil.
- D. Except as otherwise indicated, excavate for exterior water-bearing drainage piping so top of piping is not less than 3'-6" below finished grade. Piping for domestic water and fire protection shall have top of piping five feet below finished grade.
- E. Grade bottoms of trenches as indicated, notching under pipe bells to provide solid bearing for entire body of pipe.
- F. Do not backfill trenches until test and inspections have been made and backfilling authorized by the Architect. Use care backfilling to avoid damage or displacement of pipe systems.

3.07 REVIEW OF SUBGRADE

- A. Notify Architect when excavations have reached required subgrade.
- B. If Architect determines that unsatisfactory soil is present, continue excavation and replace with compacted backfill or fill material as directed.
- C. Satisfactory subgrade soils which are rendered unsuitable by the Contractor due to inadequate site and/or excavation drainage or due to negligence on the part of the Contractor by working (remodeling) or compacting otherwise satisfactory in-place subgrade soils under adverse moisture conditions shall be removed and replaced with satisfactory soil materials, or shall be worked or altered until rendered suitable at no additional cost to the Owner.
- D. Proof roll subgrade with 5-ton vibratory steel drum roller to densities in excess of 95% of the maximum dry density as determined by ASTM D 1557. Do not proof roll wet or saturated subgrades.

3.08. SOIL STABILIZATION FABRIC

- A. Install Soil Stabilization Fabric so that it is continuous without gaps, overlap seams minimum of 6 inches. Place fabric against existing soil and stone materials that are without pockets or voids. Line all utility trenches and tank excavations. Install fabric before backfilling.

3.09 BACKFILL

- A. Backfill excavations promptly, but not before completing the following:
 - 1. Construction below finish grade.
 - 2. Surveying locations of underground utilities.
 - 3. Inspecting and testing of underground utilities.
 - 4. Removing concrete formwork.

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5. Removing trash and debris.

3.10 UTILITY TRENCH BACKFILL

- A. Place and compact bedding course on trench bottoms and where indicated. Shape bedding course to provide continuous support for bells, joints, and barrels of pipes and for joints, fittings, and bodies of conduits.
- B. Provide 4 inch-thick concrete base slab support for piping or conduit less than 30 inches below surface of roadways. After installing and testing, completely encase piping or conduit in a minimum of 4 inches of concrete before backfilling or placing roadway subbase.
- C. Concrete backfill trenches that carry below or pass under footings and that are excavated within 18 inches off footings. Place concrete to level of bottom of footings.
- D. Place and compact subbase material to a height of 12 inches over the utility pipe or conduit. Carefully compact material under pipe haunches and bring backfill evenly up on both sides and along the full length of utility piping or conduit to avoid damage or displacement of utility system.

3.11 FILL

- A. Preparation: Remove vegetation, topsoil, debris, wet, and unsatisfactory soil materials, obstructions, and deleterious materials from ground surface prior to placing fills.
- B. When subgrade or existing ground surface to receive fill has a density less than that required for fill, or an in-place moisture content beyond limits specified herein, break up ground surface to depth required, pulverize, moisture-condition or aerate soil and recompact to required density and moisture content.
- C. Place fill in nearly horizontal layers starting in the lowest elevation of the fill area to required elevations for each location listed below. Under grass and mulch, use ordinary fill material. Under walks and pavements, use backfill material.

3.12 MOISTURE CONTROL

- A. Uniformly moisten or aerate subgrade and each subsequent fill or backfill layer before compaction to within 2 percent of optimum moisture content.
- B. Do not place backfill or fill material on surfaces that are muddy, frozen, or contain frost or ice. All material that is frozen or has been subjected to freeze-thaw action during the construction work, or during periods of temporary shutdowns, such as, but not limited to, nights, holidays, weekends, winter shutdowns, or earthwork operations, shall be removed to a depth that is acceptable to the Architect and replaced with new material. Alternatively, the material will be thawed, dried, reworked, and recompact to the specified criteria before additional material is placed. The Architect will determine when placement of fill shall cease due to cold weather.
- C. 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 density.

3.13 COMPACTION OF BACKFILLS AND FILLS

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- A. Place subsequent layers of backfill and fill materials of not more than 6 inches in loose depth for material compacted by heavy compaction equipment, and not more than 4 inches in loose depth for material compacted by hand-operated tampers.
- B. Place backfill and fill materials evenly on all sides of structures to required elevations, and uniformly along the full length of each structure.
- B. Percentage of Maximum Dry Density Requirements: Compact backfill and fill materials at a moisture content of $\pm 2\%$ of the optimum moisture content and to not less than 95% of maximum dry density according to ASTM D 1557, unless otherwise noted below:
 - 1. Under structures, walkways, and pavements, compact each layer of backfill or fill material to 95 percent maximum dry density.
 - 2. Under lawn or unpaved areas, compact each layer of backfill or fill material to 90 percent maximum dry density.

3.14 GRADING

- A. General: Uniformly grade areas to a smooth and compact surface, free from irregular surface changes. Comply with compaction requirements and grade to cross sections, lines, and elevations indicated.
 - 1. Provide a smooth transition between existing adjacent grades and new grades.
 - 2. Cut out soft spots, fill low spots, and trim high spots to conform to required surface tolerances.
- B. Site Grading: Slope grades to direct water away from buildings and to prevent ponding. Finish subgrades to required elevations within the following tolerances:
 - 1. Lawn or Unpaved Areas: Plus or minus 1 inch.
 - 2. Walks: Plus or minus 1/2 inch.
 - 3. Pavements: Plus or minus 1/2 inch.

3.15 SUBBASE COURSE

- A. Install soil stabilization fabric on prepared subgrade as indicated and according to manufacturer's instructions, overlapping sides and ends.
- B. Under pavements and walks, place subbase course as follows:
 - 1. Compact subbase course at a moisture content of $\pm 2\%$ of the optimum moisture content to required grades, lines, cross sections and thickness and to not less than 95 percent of maximum dry density according to ASTM D 1557. Perform compaction with vibratory rollers unless there is a concern for damage to adjacent structures or underground utilities.
 - 2. Shape subbase course to required crown elevations and cross-slope grades.
 - 3. Place subbase course in lifts not exceeding 6" in loose thickness.

3.16 FIELD QUALITY CONTROL

- A. Testing Agency: Owner will engage a qualified independent geotechnical engineering testing agency to perform field quality control testing.

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- B. Allow testing agency to inspect and test subgrades and each fill or backfill layer. Proceed with subsequent work only after test results for previously completed work, verify compliance with requirements.
- C. Testing agency will test compaction of soils in-place according to density tests ASTM D 1556 (sand cone method), ASTM D 2167 (rubber balloon method), or ASTM D 2937 (drive cylinder method), or ASTM D 2922 (nuclear method), as applicable.

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 re-establish grades to specified tolerances where completed or partially completed surfaces become eroded, rutted, settled, or lose compaction due to subsequent construction operations or weather conditions.
- C. Where settling occurs before Project correction period elapses, remove finished surfacing, backfill with additional soil material, compact, and reconstruct surfacing.
- D. Restore appearance, quality, and condition of finished surfacing to match adjacent work, and eliminate evidence of restoration to the greatest extent possible.
- E. Frost: Provide 1 ½-inch thick Styrofoam insulation over entire outside underground sanitary sewer drain line from the building to the existing sanitary manhole connection. Install six inches over the top of the sanitary sewer drain line.

3.18 DISPOSAL OF SURPLUS AND WASTE MATERIALS

- A. Remove surplus satisfactory soil and waste material, including unsatisfactory soil, trash, and debris, and legally dispose of it off the Owner's property in a manner that meets all legal requirements.

**** END OF SECTION ****

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Provide all labor, materials, and equipment as necessary to complete all work as indicated on the Drawings and specified herein.
- B. This Section includes Hot-mix asphalt patching, Hot-mix asphalt paving, and pavement striping.

1.02 RELATED SECTIONS:

- A. Section 03 3000 - Concrete
- B. Section 31 2201 - Site Earthwork

1.03 DEFINITIONS

- A. Hot-Mix Asphalt Paving Terminology: Refer to ASTM D 8 for definitions of terms.

1.04 SUBMITTALS

- A. Product Data: For each type of product indicated. Include technical data and tested physical and performance properties. 1. Job-Mix Designs: Certification, by authorities having jurisdiction, of approval of each job mix proposed for the Work.
- B. Qualification Data: For qualified manufacturer and Installer. Material Certificates: For each paving material, from manufacturer.
- D. Material Test Reports: For each paving material.

1.05 QUALITY ASSURANCE

- A. Manufacturer Qualifications: A paving-mix manufacturer registered with and approved by NYS DOT.
- B. Testing Agency Qualifications: Qualified according to ASTM D 3666 for testing indicated.

1.06 PROJECT CONDITIONS

- A. Regulatory Requirements: Comply with materials, workmanship, and other applicable requirements of NYS DOT for hot asphalt paving work.
- B. Environmental Limitations: Do not apply asphalt materials if subgrade is wet or excessively damp, if rain is imminent or expected before time required for adequate cure, or if the following conditions are not met:
 - 1. HMA Temperature: Delivered between 250 deg F and 350 deg F
 - 2. Prime Coat: Minimum surface temperature of 60 deg F
 - 3. Slurry Coat: Comply with weather limitations in ASTM D 3910.

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4. Asphalt Base Course: Minimum surface temperature of 40 deg F in the shade and rising at time of placement.
5. Asphalt Surface Course: Minimum surface temperature of 45 deg F in the shade at time of placement and rising at time of placement.
- C. Pavement-Marking Paint: Proceed with pavement marking only on clean, dry surfaces and at a minimum ambient or surface temperature of 55 deg F for water-based materials, and not exceeding 95 deg F. When more restrictive, manufacturer limits shall be adhered to.

PART 2 - PRODUCTS

2.01 AGGREGATES

- A. General: Use materials and gradations that have performed satisfactorily in previous installations.
- B. Coarse Aggregate: Sound; angular crushed stone; crushed gravel; or properly cured, crushed blast-furnace slag; complying with ASTM D 692.
- C. Fine Aggregate: Sharp-edged natural sand or sand prepared from stone; gravel, properly cured blast-furnace slag, or combinations thereof; complying with ASTM D 1073. For hot-mix asphalt, limit natural sand to a maximum of 20 percent by weight of the total aggregate mass.

2.02 OTHER MATERIALS

- A. Asphalt Cement: ASTM D 3381 for viscosity-graded material; ASTM D 946 for penetration-graded material.
- B. Tack Coat: ASTM D 977, emulsified asphalt or ASTM D 2397, cationic emulsified asphalt, slow setting, factory diluted in water, of suitable grade and consistency for application.
- C. Water: Potable.

2.03 AUXILIARY MATERIALS

- A. Sand: ASTM D 1073, Grade Nos. 2 or 3.
- B. Pavement-Marking Paint: Alkyd-resin type, ready-mixed, complying with FS TT-P-115, Type I, or AASHTO M-248, Type N, color as indicated. Pavement markings, color and pattern shall comply with New York State Manual of Uniform Traffic Control Devices (N.Y.S.M.U.T.C.D.).

2.04 ASPHALT MIXES

- A. Hot-Mix Asphalt: Provide dense, hot-laid, hot-mix asphalt plant mixes in accordance with NYS DOT Standard Specifications; designed according to

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procedures in "Mix Design Methods for Asphalt Concrete and Other Hot-Mix Types"; and complying with the following requirements:

1. Binder Course: NYS DOT Type 3 – Item No. 403.13.
2. Top Course: NYS DOT Type 7 – Item No. 403.18.
3. Overlay Course: NYS DOT Type 7F.

2.05 HEAVY DUTY ASPHALT PAVING

- A. All paving to be heavy duty as follows: 1 ½ inch top course, 3 ½ inch binder course, 6 inch NYS DOT type #2 stone base, 8 inch NYS DOT type # 3 stone subbase.

PART 3 - EXECUTION

3.01 EXAMINATION

- A. Verify that subgrade is dry and in suitable condition to support paving and imposed loads.
- B. Proof-roll subbase using heavy, pneumatic-tired rollers to locate areas that are unstable or that require further compaction.
- C. Notify Construction Manager in writing of any unsatisfactory conditions. Do not begin paving installation until these conditions have been satisfactorily corrected.

3.02 PATCHING AND REPAIRS

- A. Patching: Saw cut perimeter of patch and excavate existing pavement section to sound base. Recompact new subgrade. Excavate rectangular or trapezoidal patches, extending 12 inches into adjacent sound pavement, unless otherwise indicated. Cut excavation faces vertically.
 1. Tack coat faces of excavation and allow to cure before paving.
 2. Partially fill excavation with dry-mix continuous concrete foundation and compact to 95% density. Cover concrete bedding course with compacted, hot-mix binder and top asphalt courses, as specified and finished flush with adjacent surfaces.
- B. Tack Coat: Apply uniformly to existing surfaces of previously constructed asphalt or portland cement concrete paving and to surfaces abutting or projecting into new, hot-mix asphalt pavement. Apply at a uniform rate of 0.05 to 0.15 gal./sq. yd. of surface.
 1. Allow tack coat to cure undisturbed before paving.
 2. Avoid smearing or staining adjoining surfaces, appurtenances, and surroundings. Remove spillages and clean affected surfaces.

3.03 SURFACE PREPARATION

- A. General: Immediately before placing asphalt materials, remove loose and deleterious material from substrate surfaces. Ensure that prepared subgrade is ready to receive

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paving. Sweep loose granular particles from surface of unbound-aggregate base course.
Do not dislodge or disturb aggregate embedded in compacted surface of base course.

3.04 HOT-MIX ASPHALT PLACING

- A. Machine place hot-mix asphalt mix on prepared surface, spread uniformly, and strike off.
- B. Place asphalt mix by hand to areas inaccessible to equipment in a manner that prevents segregation of mix. Place each course to required grade, cross section, and thickness, when compacted.
 - 1. Place hot-mix asphalt binder course in single lift.
 - 2. Place hot-mix asphalt top course in single lift.
 - 3. Spread mix at minimum temperature of 250 deg F.
 - 4. Begin applying mix along centerline of crown for crowned sections and on high side of one-way slopes, unless otherwise indicated.
 - 5. Regulate paver machine speed to obtain smooth, continuous surface free of pulls and tears.
 - 6. Place paving in consecutive strips not less than 10 feet wide, except where infill edge strips of a lesser width are required. After first strip has been placed and rolled, place succeeding strips and extend rolling to overlap previous strips. Complete asphalt binder course for a section before placing asphalt top course.
- C. Promptly correct surface irregularities in paving course behind paver. Use suitable hand tools to remove excess material forming high spots. Fill depressions with hot-mix asphalt to prevent segregation of mix; use suitable hand tools to smooth surface.

3.05 JOINTS

- A. Construct joints to ensure continuous bond between adjoining paving sections. Construct joints free of depressions with same texture and smoothness as other sections of hot-mix asphalt course.
 - 1. Clean contact surfaces and apply tack coat.
 - 2. Offset longitudinal joints in successive courses a minimum of 6 inches.
 - 3. Offset transverse joints in successive courses a minimum of 24 inches.
 - 4. Construct transverse joints by bulkhead method or sawed vertical face method as described in AI's "The Asphalt Handbook."
 - 5. Compact joints as soon as hot-mix asphalt will bear roller weight without excessive displacement.
 - 6. Compact asphalt at joints to a density within 2 percent of specified course density.

3.06 COMPACTION

- A. General: Begin compaction as soon as placed hot-mix paving will bear roller weight without excessive displacement. Compact hot-mix paving with hot, hand tampers or vibratory-plate compactors in areas inaccessible to rollers. Complete compaction before mix temperature cools to 185 deg F.
- B. Breakdown Rolling: Accomplish breakdown or initial rolling immediately after rolling joints and outside edge. Examine surface immediately after breakdown rolling for indicated crown, grade, and smoothness. Repair surfaces by loosening displaced material, filling with hot-mix asphalt, and rerolling to required elevations.

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- C. Intermediate Rolling: Begin intermediate rolling immediately after breakdown rolling, while hot-mix asphalt is still hot enough to achieve specified density. Continue rolling until hot-mix asphalt course has been uniformly compacted to the following density: Average Density: 92 percent of reference maximum theoretical density according to ASTM D 2041, but not less than 90 percent nor greater than 96 percent.
- D. Finish Rolling: Finish roll paved surfaces to remove roller marks while hot-mix asphalt is still warm.
- E. Edge Shaping: While surface is being compacted and finished, trim edges of pavement to proper alignment. Bevel edges while still hot, with back of rake or smooth iron. Compact thoroughly using tamper or other satisfactory method.
- F. Repairs: Remove paved areas that are defective or contaminated with foreign materials. Remove paving course over area affected and replace with fresh, hot-mix asphalt. Compact by rolling to specified density and surface smoothness.
- G. Protection: After final rolling, do not permit vehicular traffic on pavement until it has cooled and hardened.
- H. Erect barricades to protect paving from traffic until mixture has cooled enough not to become marked.

3.07 INSTALLATION TOLERANCES

- A. Thickness: Compact each course to produce the thickness indicated within the following tolerances: Binder Course: Plus or minus 1/2 inch. Top Course: Plus 1/4 inch, no minus.
- B. Surface Smoothness: Compact each course to produce a surface smoothness within the following tolerances as determined by using a 10-foot straightedge applied transversely or longitudinally to paved areas: Base and Binder Courses: 1/4 inch. Top Course: 1/8 inch.

3.08 PAVEMENT MARKING

- A. Do not apply pavement-marking paint until layout, colors, and placement have been verified with Architect.
- B. Apply paint with mechanical equipment to produce pavement markings of dimensions indicated with uniform, straight edges. Apply at manufacturer's recommended rates to provide a minimum wet film thickness of 15 mils.

3.09 FIELD QUALITY CONTROL

- A. Testing Agency: Owner will engage a qualified independent testing agency to perform field inspections and tests and to prepare test reports.
 - 1. Testing agency will conduct and interpret tests and state in each report whether tested Work complies with or deviates from specified requirements.
- B. Additional testing, at Contractor's expense, will be performed to determine compliance of corrected Work with specified requirements.

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- C. Thickness: In-place compacted thickness of hot-mix asphalt courses will be determined according to ASTM D 3549.
- D. Surface Smoothness: Finished surface of each hot-mix asphalt course will be tested for compliance with smoothness tolerances.
- E. In-Place Density: Samples of uncompacted paving mixtures and compacted pavement will be secured by testing agency according to ASTM D 979.
 - 1. Reference maximum theoretical density will be determined by averaging results from 4 samples of hot-mix asphalt-paving mixture delivered daily to site, prepared according to ASTM D 2041, and compacted according to job-mix specifications.
 - 2. In-place density of compacted pavement will be determined by testing core samples according to ASTM D 1188 or ASTM D 2726. One core sample will be taken for every 500 sq. yd. or less of installed pavement, but in no case will fewer than 2 cores be taken. Field density of in-place compacted pavement may also be determined by nuclear method according to ASTM D 2950 and correlated with ASTM D 1188 or ASTM D 2726.
- F. Remove and replace or install additional hot-mix asphalt where test results or measurements indicate that it does not comply with specified requirements.

**** END OF SECTION ****

PART 1 - GENERAL

1.01 WORK INCLUDED

- A. Provide all labor, materials, and equipment as necessary to complete all work as indicated on the Drawings and specified herein.
- B. This Section includes fuel island bollard covers and replacing any damaged or removed steel bollards.

1.02 RELATED SECTIONS:

- A. Section 03 3000 - Concrete
- B. Section 31 2201 - Site Earthwork

1.03 SUBMITTALS

- A. Product Data: For each type of product indicated.

PART 2 - PRODUCTS

2.01 BOLLARD COVERS

- A. General: Smooth Bollard Sleeve - 6 x 56", Yellow color, 1 for each bollard, stays brighter longer. UV resistant, holds 98% of color for 5 years.
- B. High-density polyethylene which can be trimmed to fit.
- C. Manufacturer: ULINE phone 1.800.295.5510

2.02. BOLLARD REPLACEMENT

- A. Replace any damaged bollards with concrete filled steel units to match existing. Set bollards in concrete.

PART 3 - EXECUTION

3.01 INSTALLATION

- A. Install as per mfg. recommendations, tops of all covers to be at same height. Adhere covers to steel bollards with silicone adhesive.

**** END OF SECTION ****

SECTION 33 5000 – FUEL SYSTEMS BASIC REQUIREMENTS
PAGE 1

PART 1.00 - GENERAL

1.00 APPLICATION

- A. The requirements of this Section apply to all work of Division 15.0, FUEL SYSTEMS.
- B. The Bidding and Contract Requirements Division O of the Contract, including General and Supplementary Conditions, and General Requirements (Division 1), applies to all Fuel Systems Work.

1.01 QUALITY ASSURANCE

- A. Referenced Codes and Standards are listed in the individual technical sections of this Division.

1.02 SUBMITTALS

- A. Refer to Section 01300, SUBMITTALS, for general requirements and formats for submittals.
- B. Manuals:
 - 1. Operating and Maintenance Manuals: Refer to Article 3.05 below.

1.03 COORDINATION

- A. The Drawings are diagrammatic in showing physical layout. Establish exact locations in coordination with all work of this and other trades.
- B. Arrange work in a neat, well-organized manner running parallel to walls and close to structure and other work above for maximum clearances.
- C. Locate operating and control equipment to insure access for operation and maintenance.
- D. Arrange work to give priority to piping sloped for drainage.
- E. Coordinate the work of this Division with the work of other trades and make adjustments to the work as may be necessary to fit the spaces allotted.
- F. Where products or materials are furnished under the work of this Division for installation by other trades, deliver such products or materials to the other trades in a timely fashion, complete with installation instructions and coordinated location layouts.
- G. Special requirements for the coordination of Fuel Systems work are listed in the individual technical sections of this Division.

1.04 PRODUCT DELIVERY, HANDLING AND STORAGE

- A. Deliver products to the site in sturdy shipping containers, properly labeled as to type, function, and location.
- B. Handle products carefully at all times during shipping, storing, and installation. Avoid crushing containers and prevent dirt and debris from entering or settling on products.
- C. Store products in original shipping containers and protect from weather and construction work traffic.
- D. Where possible, store inside, otherwise, store above grade and enclose with weatherproof wrapping.
- E. Special requirements for the delivery, handling, and storage of Fuel Systems materials are listed in the individual technical sections of this Division.

SECTION 33 5000 – FUEL SYSTEMS BASIC REQUIREMENTS
PAGE 2

1.05 REMOVALS

- A. Refer to Drawings to determine the extent of construction being removed and visit job site to examine existing conditions.
- B. Remove all existing Fuel systems materials, equipment, and appurtenances not indicated for re-use.
- C. Carefully remove and turn over to the Owner in good condition at the job site all removed materials and equipment indicated for Owner's retainage.
- D. Remove from the job site all existing materials and equipment not scheduled to be reused or retained by the Owner, including all waste and residuals from the tank and pipe cleaning process.

PART 2.00 - PRODUCTS

2.01 EARTHWORK

- A. Provide excavation and backfill for all work of this Division, unless specifically indicated otherwise in the work of Division 2, SITE WORK. Provide finish grading and surfacing to match grade surface at time of installation.
- B. Comply with the applicable provisions of Division 2, SITE WORK.

2.02 CONCRETE

- A. Provide all concrete required to perform the work of this Division, unless specifically indicated otherwise in the work of Division 3, CONCRETE.
- B. Comply with the applicable provisions of Division 3, CONCRETE.
- C. Unless otherwise specifically shown, or specified, provide concrete with 28 days compressive strength as follows:
 - 1. 4000 psi for structural work including foundations, slabs, housekeeping pads, etc.
 - 2. 3000 psi for thrust blocks.
 - 3. 2000 psi for underground encasement.
- D. Cement Grout:
 - 1. Portland cement (ASTM C150, Type I or Type III) and clean uniformly graded, natural sand (ASTM C404, Size #2).
 - 2. Mix at a ratio of 1.0 part cement to 3.0 parts sand, by volume, with only the minimum amount of water required for placement and hydration.

2.03 FIELD PAINTING

- A. Provide all field painting and touch up required to perform the work of this Division.

2.04 SYSTEMS IDENTIFICATION MATERIALS

- A. Paint: Semi-gloss enamel, unless otherwise directed.
- B. Labels: Provide engraved plastic laminate, or snap-on pre-printed plasticized card stock, as applicable for intended use.

SECTION 33 5000 – FUEL SYSTEMS BASIC REQUIREMENTS
PAGE 3

- C. Manufacturers:
 - 1. Design Basis: Seton Name Plate Corporation
 - 2. Acceptable Manufacturers:
 - a. Seton Name Plate Corporation
 - b. Indianapolis Badge and Nameplate Company
 - c. National Badge and Tag Company
 - d. Or approved equal

2.05 ELECTRICAL

- A. Provide electrical wiring, connections, and accessories within and between items of equipment required to perform the work of this Division, or as may be required for the satisfactory operation of the work of this Division.
- B. All wiring from power panels to equipment (pumps, gauges, alarms, control panels, etc.), including final connection, *is* included under the Work of this Division.
- C. For all Electrical work provided under the work of this Division, comply with all applicable provisions of Division 16, ELECTRICAL.

2.06 MISCELLANEOUS MATERIALS

- A. Metal Framing:
 - 1. Provide products complying with NEMA STD MLI.
- B. Steel Plates, Shapes and Bars:
 - 1. Provide products complying with ASTM A36.

PART 3.00 - EXECUTION

3.01 INSTALLATION – GENERAL

- A. Comply with all applicable Federal, State, and Local Codes.
- B. Install all equipment and components per manufacturers requirements.
- C. Remove existing tanks in full compliance with EPA and NYDEC requirements as indicated in Appendix "A".
- D. Provide fuel system storage tanks in full compliance with EPA and NYDEC requirements as indicated in Appendix "A".

3.02 CUTTING AND PATCHING

- A. Provide all cutting and patching, except as otherwise specified, required to perform the work of this Division, in accordance with requirements of Division 1, GENERAL REQUIREMENTS, and Section 01045, CUTTING AND PATCHING.
- B. Remove and replace work which, in the judgment of the Architect/ Engineer, has been cut and patched in an unsatisfactory manner.

3.03 LUBRICATION FITTINGS

- A. Provide grease or oil fittings, as applicable, on all rotating pieces of Fuel Systems equipment, such as pumps and other motor driven equipment.
- B. Mount all grease and oil fittings directly on bearings except when bearings are not readily accessible then provide extension copper tubes and fitting

SECTION 33 5000 – FUEL SYSTEMS BASIC REQUIREMENTS
PAGE 4

3.04 SYSTEMS IDENTIFICATION

- A. Preparation
 - 1. Complete all testing, insulation and finish painting work required by the Contract Documents, prior to the application of identification information and flow arrows on piping.
 - 2. Provide drop cloths or other suitable protection to avoid damage and paint spatters on other work.
- B. Piping Systems Identification
 - 1. Provide adequate marking of piping, which is exposed, including that which is concealed in accessible spaces.
 - 2. Provide pre-printed color-coded plastic pipe markers, including arrows to show direction of flow.
 - 3. Indicate each pipe system by its generic name (abbreviated).
 - 4. Locate markers at terminations of lines and near major branches; near control valves and at equipment connections; where lines pass through walls, floors and ceilings; at access doors where piping is in concealed spaces; and at spacing of not more than 25' along each line for exposed piping.
- C. Equipment Identification
 - 1. Signs:
 - a. Provide engraved plastic laminate signs at locations of major equipment units, primary control devices, emergency equipment, dangerous elements of the Fuel Systems work and similar places.
 - b. Provide text of sufficient clarity and lettering, of sufficient size to convey adequate information at each location, and mount permanently in an appropriate and effective location.
 - c. Comply with recognized industry standards for color and design.
 - d. Provide as helpful

3.05 MANUALS

- A. Refer to Section 01 3300, SUBMITTALS, for general requirements and format of Manuals.
- B. Submit complete manual(s) for all work of this Division, including:
 - 1. Installation, maintenance, operating instructions, and full catalog description, including exploded parts drawings of all equipment.
 - 2. Lubrication list for all equipment, including type of lubricant, source, and frequency of lubrication stated for each unit of equipment.
 - 3. Control description and diagrams which shall include data required in Subparagraph I above.
 - 4. Emergency phone numbers for service for all equipment.
 - 5. List of all suppliers and subcontractors, including addresses, responsible personnel, and phone numbers.
 - 6. All reports, receipts and submittals, all test reports.
 - 7. All warranties.

SECTION 33 5000 – FUEL SYSTEMS BASIC REQUIREMENTS
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8. Schematic diagrams for all systems.
9. Wiring and control diagrams for all equipment.
10. Maintenance schedule for all equipment, including lubrication and filter replacement.

3.06 OWNER'S INSTRUCTION

- A. After Substantial Completion of Work, including testing and adjusting of systems, conduct a complete and thorough seminar for Owner's designated personnel at the job site.
- B. Include the following instructions:
 1. Operation and Maintenance of all Systems
 2. Explanation of Identification Systems
 3. Emergency and Alarm Procedures
 4. Sequencing Requirements
 5. Seasonal Provisions
 6. Security and Safety
 7. Review of Manuals
- C. Conduct seminar by persons thoroughly familiar with equipment and installation, who may include manufacturer's representatives.
- D. Provide Architect / Engineer with a letter signed by Owner's Representative confirming completion of above items.

**** END OF SECTION ****

SECTION 33 5600 - FUEL STORAGE TANK SYSTEMS AND ACCESSORIES

PART 1 – GENERAL

1.01 WORK INCLUDED

- A. Underground fiberglass storage tank, monitoring system, fuel pumps, fuel piping, sumps, wells, gaskets, and manhole covers: provide labor, materials, equipment and services to perform all operations as required for the complete installation of these systems including related work as required and or as in the Contract Documents.

Base bid tanks to be of fiberglass, alternate bid tanks to be urethane resin coated steel.

- B. Monitoring and leak detection system complete with all, conduit, wiring and accessories.
- C. Fuel and vent piping, double wall.

1.02 SUBMITTALS

- A. Product Data: Include construction details, material descriptions, dimensions of individual components.
- B. Shop Drawings: For the following underground tank system and components. Include plans, elevations, sections, and details.
 - 1. For underground tank, monitoring system, all components, and accessories.
 - 2. For installed components indicated to comply with design loads, include structural analysis data signed and sealed by the qualified professional engineer responsible for their preparation.
 - 3. Anchor (hold downs) Plans: Include location, diameter, and projection of all anchors required to attach tank to footing.
 - 4. Tank Drawings: Show complete dimensions, details, component fabrication, and include transverse cross-sections.
 - 5. Concrete hold down pad (footing) details.
- C. Other Items:
 - 1. Sieve analysis of backfill.
 - 2. Tank calibration charts.
 - 3. Tank manufacturer's training certificate.
 - 4. Tank and pipe manufacturer's installation checklist.
 - 5. Record photographs.
 - 6. Test results
- D. Product Certificates:

Signed by the manufacturer of the tank systems certifying that products furnished comply with all requirements. Letter of Design Certification: Signed and sealed by a qualified professional engineer. Include the following:

1. Name and location of Project.
2. Name of manufacturer.
3. Tank dimensions, including width, length, and height.
4. Indicate compliance with governing codes.
5. Design Loads for the tank.

E. Qualifications:

1. Installer's Qualifications: An installer with a minimum of five years of experience who has specialized in installing work similar in material, design, and extent to that indicated for this Project and who is acceptable to the manufacturer.
2. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in jurisdiction where Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of underground tank systems that are similar to those indicated for this Project in material, design, and extent.
3. Manufacturer Qualifications: A minimum of twenty-five years of experience in manufacturing underground tank systems similar to those indicated for this Project and with a record of successful in-service performance.
4. Manufacturer to have an annual audit of its quality assurance program.
5. Engineering Responsibility: Engineering analysis by a qualified professional engineer registered in NYS.
6. Welding: Qualified procedures and certified welding personnel according to the following:
Welding shall be in accordance to AWS D1.1, "Structural Welding Code Steel". Steel Shop connections shall be welded, and field connections shall be bolted (Unless otherwise noted in the drawings). Shop welds may be changed to field welds with the approval of the project engineer. Slag shall be cleaned from welds and prime painted with rust-inhibitive primer.

1.03 DELIVERY, STORAGE, AND HANDLING

- A. Deliver components, sheets, panels, and other manufactured items so as not to be damaged or deformed. Package roof and wall panels for protection during transportation and handling.
- B. Handling: Unload, store, and erect roof and wall panels to prevent bending, warping, twisting, and surface damage.

- C. Stack materials on platforms or pallets, covered with tarpaulins or other suitable weather tight and ventilated covering. Store roof and wall panels to ensure dryness. Do not store panels in contact with other materials that might cause staining, denting, or other surface damage.

1.04 PROJECT CONDITIONS

- A. Weather Limitations: Proceed with installation only when weather conditions permit and tank installation to be performed according to the manufacturer's written instructions and warranty requirements.
- B. Coordinate size and location of concrete foundations and casting of anchor-bolt inserts into foundation walls and footings. Concrete, reinforcement, and formwork requirements are specified in Division 3 Section "Cast-in-Place Concrete."
- C. Field Measurements: The Contractor shall verify locations and elevations of all tank, components, and footings relative to finish grade.
- D. Site Conditions: Must meet manufacturer's Required Job Site Conditions for Installation. Anchorage must be installed per drawings. Footings need to be free of debris and anchor bolt threads undamaged. All work surfaces must be even upon completion.

1.05 WARRANTY

- A. General Warranty: Special warranties specified in this Article shall not deprive Owner of other rights. Owner may have under other provisions of the Contract Documents and shall be in addition to, and run concurrent with, other warranties made by Contractor under requirements of the Contract Documents. Warranty Period: Thirty years from date of Substantial Completion.

1.06 APPLICABLE CODES AND REQUIREMENTS

- A. All work shall be installed in compliance with NFPA Standards 30 and 31.
- B. Comply with New York State Department of Environmental Conservation (NYS DEC) Requirements, 6NYCRR Parts 612, 613 and 614.
- C. Underwriters Laboratories Inc. Standard 1316, Glass-Fiber Reinforced Plastic Underground Storage Tanks for Petroleum Products, Alcohols, and Alcohol-Gasoline Mixtures.
- D. Comply with EPA Regulations 40 CFR Part 280.
- E. Underwriters Laboratories of Canada standard ULC-S615, Reinforced Plastic Underground Tanks for Flammable & Combustible Liquids.
- F. National Fire Protection Association codes and standards:
 - 1. NFPA 30 Flammable and Combustible Liquids Code
 - 2. NFPA 30A Motor Fuel Dispensing Facilities and Repair Garages Code
 - 3. NFPA 31 Installation of Oil-Burning Equipment Standard

- G. This contractor, including the installation foreman shall have not less than four (4) years continuous experience in the installation of fuel storage systems. They shall be fully qualified for fuel tank installations by the tank manufacturer and shall have attended the manufacturer's training seminar within the past two (2) years.
- H. Underwriters Laboratories of Canada standard ULC-S615, Reinforced Plastic Underground Tanks for Flammable & Combustible Liquids

1.07 RELATED WORK

- A. Section 31 2201 – Site Earthwork
- B. Section 26 5000 – Removal and disposal of storage tanks

PART 2 - PRODUCTS

2.01 FUEL TANK FEATURES - GENERAL

- A. Double-Wall Fiberglass Underground Storage Tank complete with manholes, hold down straps, lifting lugs and accessories.
- B. Shall be equipped with a permanent stencil, label or plate as required by NYC DEC. Shall bear UL label for aboveground installation and the specific product to be stored.
- C. Fiberglass tank manufacturers that are acceptable:
 - Containment Solutions Inc. 1.877.CSI.TANK.
 - XERXES, ZCL Composites
6907 - 36 Street
Edmonton, AB
T6B 2Z6
Phone: 780-465-0726
 - Nation Wide Tanks Inc., phone 1.855.895.1907
1313 US-76, Marion, SC 29571

Coated steel tank manufacturers that are acceptable:

- Modern Welding Corporation or equal.
1 Modern Way
P.O. Box 4430
Newark, OH 43058-4430
Toll Free: (800) 537-2146
Phone: (740) 344-9425
Fax: (740) 344-6018
- D. Shall be warranted for thirty (30) years against failure due to internal or external deterioration and structural failure.

E. Loading Conditions - Tanks shall meet the following design criteria:

- External hydrostatic pressure: Buried in ground with 7' of over burden over the top of the tank, the excavation fully flooded and a safety factor of 5:1 against general buckling.
- Surface Loads: When installed according to manufacturer's current installation instructions, tanks shall withstand surface HS-20 axle loads (32,000 lbs/axle).
- Internal Load: Primary and secondary tanks shall withstand 5 psig (35kPa), or 3 psig for 12' diameter tanks, air pressure test with 5:1 safety factor.
- Tanks shall be designed to support accessory equipment such as heating coils, ladders, drop tubes, etc. when installed according to manufacturer's recommendations and limitations.

F. Product-Storage Requirements

- All primary tanks must be vented. Tanks are designed for operation at atmospheric pressure only, except for use with vapor recovery systems at a pressure or vacuum not to exceed 1 psig (7 kPa).
- Tanks shall be capable of storing liquids with specific gravity up to 1.1.
- Tank shall be capable of storing the following products:
 - a. Diesel fuel oils for oil burning equipment at temperatures not to exceed 150°F.
 - b. Gasoline, jet fuel, aviation gasoline, motor oil (new or used), kerosene, diesel motor fuel at ambient temperatures.
 - c. Alcohol-gasoline blend motor fuels at ambient temperatures: Gasoline-ethanol blends with up to 100% ethanol. Gasoline-methanol blends with up to 100% methanol.
 - d. Oxygenated motor fuels at ambient temperatures with up to 20% (by volume) methyl tertiary butyl ether (MTBE), ethyl tertiary butyl ether (ETBE), di-isopropyl ether (DIPE), tertiary butyl alcohol (TBA), tertiary amyl methyl ether (TAME), or tertiary amyl ethyl ether (TAE).
 - e. Biodiesel-diesel blends with up to 100% biodiesel (B100 per ASTM) at ambient temperatures.

G. Materials

- The base bid Fiberglass tanks shall be manufactured as a matrix of premium resin, glass fibers and silane-treated silica that together result in a composite providing improved corrosion protection.
- Fiberglass tank inner wall shall be fabricated against a mold to produce a non-air inhibited and high gloss laminate to provide a fully cured inner surface without the need for wax coats, a low coefficient of friction and a natural resistance to the build-up of algae or other contamination on the surface. Wax and wax resin coatings cannot be used to achieve full surface cure on tank shells and endcaps.

- 3 Coated steel underground storage tank, alternate bid - A steel primary tank with a nonmetallic external coating of urethane resin. These are atmospheric steel tanks intended for storage underground of flammable and combustible liquids. Threaded fittings / openings can be located along the tank's top centerline or openings can be installed inside containment sumps. ACT-100-U as manufactured by Modern Welding Corporation or equal, tanks to be double wall construction, with multiple compartments for multiple fuel storage. The tanks will be a double wall configuration, with interstitial monitoring capabilities. ACT-100-U tanks are built to Underwriters Laboratories UL-58, UL-1746 Part IV and Steel Tank Institute's ACT-100-U F-961 specifications.

A. Dimensional Requirements

- The nominal capacity of the split compartment tank shall be 15,000 gallons; the compartments shall be for Diesel Fuel Oil (nominal 10,000 gallons) and Gasoline (nominal 5,000).
- The nominal outside diameter of the tank shall be 8 feet.
- Nominal overall length of the tank shall be approximately 45'.

B. Monitoring Capabilities

- Tanks shall have a monitoring space between the walls to allow for the free flow and containment of leaked product from the primary tank. The monitoring space shall provide equal communication in all directions.
- The following continuous monitoring conditions shall be compatible with the cavity between the inner and outer tanks:
 - a. Vented to atmosphere.
 - b. Vacuum – 5 psig maximum
 - c. Positive air pressure (3 psig maximum)
 - d. External hydrostatic pressure – 7' maximum groundwater head pressure over tank top
- The monitoring system shall be capable of detecting a breach in the inner and outer tank under the following installed conditions:
 - a. When the primary tank is empty.
 - b. When the primary tank is partially or completely full and the ground water table is below tank bottom.
 - c. When the primary tank is partially or completely full and the tank is partially or completely submerged in groundwater.

- C. Tanks shall be capable of storing gasoline, gasohol 10% ethanol and 90% gasoline mixture, gasoline blends containing ethyl alcohol, methanol or other alcohol compound, diesel fuel or fuel oil at ambient underground temperatures and shall be listed by UL for that purpose.

2.02 FUEL TANK AND PIPING ACCESSORIES

A. FLEXIBLE PIPING AND CONNECTORS:

1. Gasoline/Diesel Fuel: UL listed for below ground use, all stainless steel construction, Type 321 stainless steel corrugated metal hose with a Type 304 stainless steel wire braid, or KYNAR – PVDF material, maximum rated working pressure of 350 psi, 30 in. length, and 2in. dia.; Amnet, Inc. "Flexpipe" or approved equal.
2. Vent piping: UL listed, VB20 as manufactured by Flexpipe or equal.
3. Piping complete with all couplings, connectors and fittings.

B. FLEXIBLE CONNECTOR ISOLATION JACKET

1. Convoluted polyethylene heat shrink ends, resistant to hydrocarbons, suitable for use with secondary containment systems with isolation bushing.
2. Make: Austin Engineering "Flex Protector" or approved equal.

C. TANK MONITORING SYSTEM

1. Description
 - a. These specifications are intended to provide information by which prospective bidders may understand the requirements relative to furnishing and installing a monitoring system for underground and above ground liquid storage tanks and associated below-grade product piping.
 - b. These specifications shall describe specifically a continuous underground monitoring and leak detection system that shall perform in accordance with Subpart D of 40 CFR 280 and, as a standard of performance and quality, shall meet the performance specifications and functions of the Veeder-Root Company TLS-450 Plus UST Monitoring system.
 - c. The storage tank monitoring system shall meet all applicable standards and regulatory agency requirements including, but not limited to, the standards and requirements of the following:
 - American National Standards Institute (ANSI)
 - American Petroleum Institute (API)
 - American Society for Testing and Materials (ASTM)
 - Environmental Protection Agency (EPA)
 - National Bureau of Standards (NBS)
 - National Electrical Code (NEC)
 - National Fire Protection Agency (NFPA)
 - NYS DEC
 - Underwriters Laboratories Inc. (UL)
 - Canadian Standards Association (CSA) Canadian Underwriters Laboratories Inc. (cUL)
 - Underground Storage Tanks: Subpart D, 40 CFR Part 280

- Federal Communications Commission (FCC) The aboveground storage tank monitoring system shall meet all applicable standards to operate in a Class 1 Division 1 Group D hazardous location.

d. Acceptable system manufacturers for and tank / fuel monitoring system:

- Veeder-Root Company (TLS 450 Plus system – basis of the design)
7300 Friendly Avenue
Greensboro, SC 27410
Phone 1.336.547.5000
- Omntech Mfg. Inc.
- Or approved equal by architect

2. System Security:

- a. The system shall allow setup of users with different levels of security, limiting access to unauthorized personnel to areas such as Setup and Diagnostics. System Security will require login credentials for access to the GUI, Web Enable, and RS-232 communication. System Security will automatically log a user out after 15 minutes of inactivity.
- b. The system shall have three predefined roles: Administrator, Operator, and Regulator with the following access permissions:
- Administrator: Able to edit console configuration, perform software upgrades, generate reports, and start various diagnostics tests. Also able to create new roles and users.
 - Operator: Able to view and generate reports and perform certain manual functions, like a manual delivery
 - Regulator: Able to print and review console reports The system shall have the ability to create custom roles, allowing the administrator to select access to: Diagnostics, Reports, Setup, system Status, System Administration.

3. Environmental Compliance Specifications:

a. In-Tank Leak Detection: Static Leak Detection (SLD):

- The system shall utilize Magneto strictive probes with six thermistors for liquid level measurement, in-tank leak detection and temperature measurement.
- The tank gauge shall be capable of performing a static tank tightness test to an accuracy of 0.1 GPH with at least a 98% probability of detection $[P(D)]$ and no more than 1% probability of false alarm $[P(FA)]$.
- The system shall have the ability to automatically run a static leak test, by monitoring the activity of the submersible pump. Depending on the idle time between pumping cycles, the system will automatically run a 3.0 GPH test, a 0.2 GPH test or a 0.1 GPH test. Each successive test will start automatically upon completion of the previous test. If a dispensing

transaction or a delivery takes place, the system will automatically disable the test until the next appropriate idle period.

- The system shall be capable of performing a 0.2 GPH or 0.1 GPH test to start automatically or manually and have the ability to run a quick leak test. This quick static leak test will take one hour, and commence 30 minutes after the last dispensing cycle, or five hours from the last delivery, whichever is greater. The minimum time for a 0.2 GPH static test shall be two hours and three hours for a 0.1 GPH static leak test.

b. Continuous Statistical Leak Detection (CSLD):

- The system shall have the ability to conduct automatic CSLD tests without the need to shut down tanks for scheduled test times.
- The system, when operated in CSLD mode, shall be third-party certified for statistical leak detection in tanks up to 45,000 gallons. The test shall meet or exceed U.S. EPA standards with a 99% probability of detecting a 0.2 GPH leak and less than a 0.1% probability of false alarm. It shall meet federal, state and local compliance requirements for monthly monitoring.
- The system shall be capable of dynamically qualifying the idle time data and selecting the best available data to perform a 0.2 GPH tank tightness evaluation. During each idle period an evaluation will be performed and the data will be added to the database. The system shall employ the use of dynamic feedback variables in the algorithm to evaluate the noise factor patterns associated with a tank, thus tailoring the algorithms to each individual tank.
- The system shall have the ability to conduct automatic CSLD for systems where tanks are manifold together; up to three tanks per set.

c. Interstitial Leak Detection:

- Wet Monitoring: The system shall be able to perform automatic, continuous leak sensing by monitoring the liquid level in the reservoir of a brine-filled interstitial space (annulus) of a double-wall tank to detect a breach in the inner or outer shell. The system shall differentiate between a high-liquid level and a low-liquid level in the brine reservoir of a double-wall tank and provide a high-liquid alarm or a low-liquid alarm.
- Dry Monitoring: The system shall be able to perform automatic, continuous leak sensing in the dry interstitial space (annulus) of a double-wall tank, to detect a breach in the inner or outer shell. The system shall differentiate between hydrocarbons and water, and provide an indication of a fuel alarm or a liquid alarm.
- The system shall have the ability to sense the presence of hydrocarbons and/or liquid, and provide an alarm for worst-case condition (fuel). The system shall have the ability to continuously monitor the integrity of the sensor for an open condition, alarm condition, or normal operating condition.

d. Line Leak Detection:

- The line leak detector assembly shall be suitable for operation in an NFPA 70, class 1, division 1, group D environment and shall meet the intent of article 500 of the National Electrical Code (NEC), as published by the NFPA. The system shall perform tests automatically and on demand (manual testing) at the actual pumping pressure, or higher.
- The system is capable of running the following leak tests:
 - 1) 3.0 GPH @ 10 PSI, after the dispenser is shut off
 - 2) 0.2 GPH @ 150% of pumping pressure (0.08 GPH at operating pressure)
 - 3) 0.1 GPH @ 150% of pumping pressure (0.08 GPH at operating pressure)
- The product line leak detector shall be capable of shutting down the submersible pump automatically when a 3.0 GPH failure has been detected at any of the sixteen submersible pumps. Submersible pump shutdown shall be a programmable option on the occurrence of a 0.2 or GPH failure.
- The line leak detector shall be capable of performing a self-test to verify proper operation, or shall be fail safe in operation.
- If the line is manifold a single leak detector is required for line to be monitored.

e. Well Sump Monitoring:

- Dry Monitoring: The system shall be able to perform automatic, continuous hydrocarbon vapor sensing in a dry monitoring well or sump to detect hydrocarbon releases caused by a breach in the product pipeline and/or storage tank. The system shall have the ability to measure the ambient level of Hydrocarbons in the first 24 hours and then set the appropriate alarm threshold. The sensor shall provide an alarm if water covers the sensor, indicating non-compliance. The sensor shall be recoverable and reusable after exposure to hydrocarbons.
- Wet Monitoring: The system shall be able to perform automatic, continuous groundwater monitoring for hydrocarbons in a wet monitoring well (up to twenty foot in depth) to detect hydrocarbon releases caused by a breach in the product pipeline and/or storage tank. The system shall react to as little as 1/32 of an inch of free-floating product on the groundwater.
- The sensor shall provide an alarm if the water level drops below the sensor, indicating non-compliance. The sensor shall be recoverable and reusable after exposure to hydrocarbons.

f. Business Inventory Reconciliation:

- Automatic Inventory Reconciliation: For accurate business management the system shall have the ability to provide automatic inventory

reconciliation: Daily, at the end of each shift (up to eight), rolling, monthly.

g. Meter Mapping:

- The system shall provide the ability to automatically collect meter readings, in-tank inventories and deliveries and reconcile the totals at the end of each shift, day and period. The system shall provide automatic set-up routines that map meters to tanks to correlate metered sales from a hose to the correct tank and product, eliminating the need to map meters to tanks manually.

h. Reporting:

- Generation: The system shall have the ability to generate reports from the GUI, Web-enabled, or via a RS-232 command (display/computer format). These reports will provide the same information independent of how the report request is generated. The system shall have the ability to store up to three years' worth of report data.
- Output: All reports shall be available from an internal printer, network printer, fax, modem, email or from a polling computer. A four-line, twenty-character customer location header to identify the site must be user-programmable. The header must appear automatically on inventory status reports, leak detection reports and automatic delivery reports each time they are printed.
- Alarm: The system shall have the capability to generate an Active Alarm Report, Alarm History Report and Priority/Non-Priority Report. The console shall continuously monitor all probes and sensors, reporting not only normal operating conditions, but also system malfunctions or failures. Environmental: The system shall provide the following reports related to Environmental Compliance.
- Combined Tank Test shall provide a report of both SLD and CSLD test results.
This report will only show tests that have successfully passed.
- Sensor History shall provide reports anytime a sensor has gone into an alarm and when the alarm cleared. The report shall also indicate the type of alarm.

i. Inventory:

- The system shall provide an inventory history of up to 720 records per tank.
- The system shall have the ability to generate a power outage inventory report. This report shall track inventory levels before and after power outage, any variation in volume shall indicate tank activity during the outage.

j. Delivery:

- The system shall automatically generate a complete inventory increase report (Delivery) when a delivery of product to a tank has taken place.

The information shall be available in U.S., Metric or Imperial units. The system shall have the ability to store up to three years of inventory increase reports. The system shall provide an automatic delivery report, programmed to print from 1 to 99 minutes after a bulk delivery to a tank is complete.

k. Business Inventory Reconciliation

- Inventory reconciliation reports shall be generated any time the operator presses the print button while the system is in the reconciliation mode, or generated automatically up to eight times a day with the information stored in memory.

l. System Programming

- Interface: The system shall be able to be programmed via the 7" color touch screen or using Web-Enabled (Remote Access). The system will provide an intuitive online help to assist with programming.

m. Console:

- The console shall be of a modular design that allows for the installation and expansion of console hardware and additional business management, leak detection and communications features in the future. The console shall be equipped with touch screen display for on-site viewing of information, programming, operating and reporting functions. The front panel shall have indicators to provide a visual indication of power on, warning and alarm conditions along with an internal audible alarm.

n. The manufacturer mandatory certification training:

- Training for all of its authorized service contractors/installers. The certification program shall consist of two certification levels covering installation, setup/operation and service/troubleshooting of the manufacturer's ATG monitoring systems. The manufacturer shall offer re-certification training to keep contractors/installers current with updated information. The manufacturer shall supply product documentation that addresses the following categories as additional support: Site preparation and installation instructions System setup instructions (via on-line help), System operating instructions (via on-line help), Line leak detector site preparation and installation instructions, Line leak detector checkout procedures.

D, TANK SUMPS AND MANHOLE COVERS

1. Sump shall be grade level with H2O load rated steel and cast iron covers, flexible entry boot suitable for transitioning between metal and flexible piping and or sumps. STP sump tb 42 in, with sealing cover, as mfg. by FibreTite or equal.

- a. Make: BRAVO , OPW, or approved equal.
- 2. Manhole covers
 - .a. 18 in. cast iron, OPW model # 104. Complete with steel skirt, for monitoring wells.
 - b. 48 in. steel, OPW Complete with steel skirt, for STP sump.
 - c. Gaskets to be neoprene of highest quality.

E. EARTHWORK

- 1. Refer to applicable Sections of Division 31.
- 2. All materials shall be new.

F. CONCRETE

- 1. Provide concrete, forming, reinforcing, placing, finishing, curing and protection for all work of this contract. Refer to applicable Sections of Division 03.

G. ASPHALT

- 1. Provide asphalt, placing, finishing for all work of this contract. Refer to applicable Sections of Division 32.

2.03 FUEL PUMPS

- A. Diesel submersible fuel pump shall be 1 ½ HP fixed speed, with intake filter, model number STPK 150-VL2 as manufactured by FE PETRO Inc. or equal.
- B. Gasoline submersible fuel pump shall be 2 HP, variable speed, with intake filter, model number STPK VS2-VL2 as manufactured by FE PETRO Inc. or equal.
- C. Provide a complete system with 4 inch risers and check valves, as manufactured by: Franklin Electric, Madison Wisconsin, 608.838.8786, or equal.

PART 3 - EXECUTION

3.01 FUEL TANK INSTALLATION

- A. Installation shall be in accordance with the manufacturer's written instructions and as noted.
- B. Provide all rigging, strapping, excavation, backfill, concrete and masonry work, cutting and patching for complete installation.
- C. Contractor shall notify Owner's Representative when tanks are set in place and backfilled so the Owner may supply fuel for ballast and testing. All fill product will be

furnished by the Contractor.

3.02 FUEL PIPING AND ACCESSORIES

- A. Installation shall be in accordance with manufacturer's written instructions and as noted.

3.03 TANK MONITORING SYSTEM

- A. Install equipment in accordance with manufacturer's written instructions. Provide testing, system start-up, adjustments and calibration by the manufacturer's authorized representative.
- B. The system shall be furnished through a single supplier.
- C. Provide written confirmation from the manufacturer's authorized representative that the system has been tested and is operational.
- D. Overfill alarm and acknowledgement switch shall operate in conjunction with the tank monitoring system.

3.04 PRODUCT IDENTIFICATION

- A. Permanently mark all tank openings. The color shall conform to the requirements of the API.
- B. Provide a permanent label at the tank fill port. The label shall contain information required by the DEC.

3.05 WARNING TAPE

- A. Install continuous plastic underground warning tape identification during backfilling of excavations for fuel storage tanks and trenches for fuel piping and electrical conduit. Locate tape 6 in. to 8 in. below finished grade, directly over piping, conduit and edges of each storage tank.

3.06 INSTALLATION CHECKLISTS AND WARRANTY CARDS

- A. Provide Owner's Representative with the tank and piping manufacturer's installation checklist and warranty cards. Fill out and sign upon completion of tank installation.

3.07 TESTING

- A. General: Tank and piping tightness and the satisfactory operation of the cathodic protections system shall be proven before the system is placed in operation.
- B. Tank:
 - 1. Before placing tank in excavation, air pressure test both the primary and secondary tank in accordance with the tank manufacturer's recommendations.

In addition to the pressure test, cover the entire tank surface, manways and all fittings with soap solution and inspect for leaks.

2. There shall be no drop in pressure.

C. Piping:

1. Before backfilling and after assembly, but before connection to equipment, test metallic piping at 50 psig air pressure for not less than two (2) hours. Soap all joints. Hydrostatic test all plastic piping at 50 psig for not less than two (2) hours.
2. Test secondary containment piping per pipe manufacturer's requirements.
3. There shall be no drop in pressure.

D. Monitoring and Leak Detection Systems:

1. Test and adjust tank monitor and leak detection systems and devices per manufacturer's directions.

E. Final Test:

1. Conduct precision test of all piping and tanks in compliance with EPA and NYS DEC requirements. Test after piping has been completed but before paving and the system is placed in operation.
2. The test shall be conducted using leak detection methods approved by NYS DEC.
3. Operationally test all equipment, including all existing systems, such as pumps, boilers and heaters affected by the shutdown of the fuel system. Coordinate testing with the Owner.

F. Test Results:

1. Provide written certification of all test results to the Owner's Representative.

3.08 RECORD PHOTOGRAPHS

- A. After installation, but before backfilling, take photographs of the following:
- B. Each tank assembly.
- C. Underground piping.
- D. Two (2) general views of entire length of run of each piping assembly, including tanks.
- E. Concrete hold down pad.

- F. Hold down pad anchors.
- G. Submit two (2) copies of each, 8-1/2 in. x 11 in. black and white prints of above, properly identified.

3.09 RECORD DRAWINGS

- A. Provide two (2) sets of as-built plans on mylar drawings that shown the size and locations of the aboveground tank and piping system. These plans must include a statement by the installer that the system has been installed with the New York State Standards for New and Substantially Modified Petroleum Storage Facilities, 6 NYCRR Part 614.

**** END OF SECTION ****