

Project Manual

Containing Specifications & Notes for
Stand-by Generator Project

at:

NANUET PUBLIC LIBRARY

Nanuet, New York

Electrical Construction and Related Work

Architect's Project No.: 23•46•11

Owner:



Nanuet Public Library

149 Church Street
Nanuet, New York 10954
p: 845•623•3088
f: 845•623•2415

Library Board:

Amy Andrews, President
Brian Anderson, Vice President
Mette Rossi, Secretary
Howard Heffler, Treasurer
Teri Cantor
Lauren McDonagh
Sofija Duic, Clerk to the Board

NYSED NO.: 50-01-08-03-6-005-006-23-0059

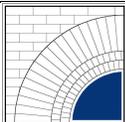
Date:

11 September 2023

Library Director:

Jessica Bowen

Architect:



**BUTLER
ROWLAND
MAYS**

Architects, LLP
57 West High Street
Ballston Spa, NY 12020
p: 518•885•1255
f: 518•885•1266

Electrical/Mechanical Consultant:

M/E Engineering, PC
433 State Street, Suite 410
Schenectady, NY 12305



THE ARCHITECT CERTIFIES THAT THIS PROJECT HAS BEEN DESIGNED BY ME, OR UNDER MY SUPERVISION, IN ACCORDANCE WITH THE NEW YORK STATE UNIFORM FIRE PREVENTION AND BUILDING CODE, INCLUDING AMENDMENTS AS PUBLISHED BY NEW YORK DEPARTMENT OF STATE, (CURRENT VERSION); THE ENERGY CONSERVATION CONSTRUCTION CODE (CURRENT VERSION), THE BUILDING STANDARDS OF THE NEW YORK STATE EDUCATION DEPARTMENT, AND APPLICABLE FEDERAL, STATE AND LOCAL LAWS, CODES, AND REGULATIONS, AND TO THE BEST OF MY KNOWLEDGE AND BELIEF, THESE DOCUMENTS ARE IN CONFORMANCE THEREWITH.

Steven G. Rowland

024705 12-31-2023

Set No.:

Steven G. Rowland, RA NYS Registration. No. Exp. Date

NANUET PUBLIC LIBRARY

Stand-by Generator Project

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SECTION 001116
INVITATION TO BID

Owner:

Nanuet Public Library
149 Church Street
Nanuet, NY 10954
Director: Jessica Bowen

Architect:

Butler Rowland Mays Architects, LLP
57 West High Street
Ballston Spa, NY 12020
ph: (518) 885-1255

Date: 11 September 2023

Contractors are invited to submit a prime contract bid offer for the **Stand-by Generator Project for the Nanuet Public Library**.

The library will receive sealed bids at the Main Circulation desk, at the above library's address until **Wednesday, October 18, 2023, on or before 11:00AM.** Bids will be opened and publicly read aloud at 11:05AM in the library's second floor Community Room.

Bidders must submit a Bid Form and inclusive attachments, **sealed** in clearly labeled envelopes, **in duplicate**. Bidders are required to complete the Bid Form entirely. Bidders may provide additional required information as appropriate, but may not qualify their Bid in any way.

It is the intention of the Project to be both environmentally and fiscally conscious of paper use and consumption. Therefore, Bid Documents for the Stipulated Sum will be distributed as digital sets. Bidding Documents, Drawings and Specifications may be viewed online, free of charge, beginning **September 11, 2023.** Bid Documents for the Stipulated Sum Contract will be distributed as digital sets at revplans.biddyhq.com under "Public Projects", or electronically downloaded for a non-refundable charge of one hundred dollars (\$100.00). Complete sets of Bidding Documents, Drawings, and Specifications, on compact disc (CD) may be obtained from Rev, 28 Church Street, Unit 7, Warwick, NY 10990 Tel: 1-877-272-0216, upon depositing the sum of one hundred dollars (\$100.00) for each combined set of documents. Checks or money orders shall be made payable to NANUET PUBLIC LIBRARY. **Cash will not be accepted** as a deposit.

The single prime contract project includes the installation of a new, gas-fired, stand-by generator with automatic transfer switch and related accessories. Gas piping and modifications to the existing electrical service are also included. In addition, there is concrete work for the generator and transfer switch support/housekeeping pads, sidewalk replacement and minor site repairs. There is also the installation of an Owner supplied new electronic message board and the associated power and data wiring to the sign, all as noted on drawings and in the specifications.

The work of the successful bidder must be coordinated with the Owner **who will be occupying the building throughout the project.** Entrances, hallways and fire exits must be kept clear of work during normal hours of operation. Contractors will be permitted to work during Library operating hours.

The project is tax exempt and a Tax Exempt Certificate will be provided to the successful bidder.

The project shall use Prevailing Wages for Rockland County in NY State. The Wage Rate Schedule is provided in the bid documents.

Contractors are required to provide Bid security in the form of a Bid Bond in the amount of a sum no less than 5 percent of the Bid Price. Performance Bond and Payment Bond for 100% of the Contract Sum will be required prior to executing the Construction Contract. Failure to submit the Bid Bond with the Bid may be cause for rejection. Refer to other Bidding requirements describes in Specification Section 002133 Instructions to Bidders.

A **Pre-Bid Meeting** has been scheduled for **2:00PM on Wednesday, September 27, 2023** at the Library's second floor Community Meeting Room. Minutes of the pre-bid meeting will be issued as part of an addenda. Bidders are encouraged to attend the Pre-Bid meeting.

All questions during the bid phase shall be in writing and directed to Steve Rowland, at Butler Rowland Mays Architects, LLP at rowlands@brmarchitects.com , or by fax to BRMA at (518) 885-1266. A **Request for Clarification of Bid Documents** form is provided in the Instructions to Bidders Section 002133.

Bid offers will be required to be submitted under a condition of irrevocability for a period of forty-five (45) calendar days after submission.

The Owner expressly reserves the right to accept or reject any or all bids submitted in response to this bid solicitation and/or to accept any portion of said bid and reject the balance.

END OF SECTION

SECTION 002113
INSTRUCTIONS TO BIDDERS

PART 1 SUMMARY

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 - 2.3 Contract Time
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 - 3.2 Contract Documents Identification
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1.2 RELATED DOCUMENTS

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- B. Section 004116 - Bid Form.
- C. Section 004117 – Supplements to Bid Form.
- D. Section 007214 - Supplementary Conditions: Contract Time Identification, Tax Exempt Procedures, Bond Types and Values, and Insurance and Bonds.
- E. Section 011000 – Summary
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- H. Section 001300 – Administrative Requirements
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PART 2 INVITATION

2.1 BID SUBMISSION

- A. Offers submitted after the bid due time of Wednesday, October 18, 2023 at 11:00AM will be returned to the Bidder unopened.

2.2 WORK IDENTIFIED IN THE CONTRACT DOCUMENTS

- A. Work of the proposed Contract shall comprise the furnishing of all labor and materials as necessary to complete the work specified herein and shown on the Contract Drawings.

2.3 CONTRACT TIME

- A. Time is of the essence. Work shall commence immediately upon Notice to Proceed, with substantial completion before August 1, 2024, as noted included in specifications, Section 011000 Summary.

PART 3 BID DOCUMENTS AND CONTRACT DOCUMENTS

3.1 DEFINITIONS

- A. Bid Documents: Contract Documents supplemented with Invitation to Bid, Instructions to Bidders, Bid Forms, and Appendices, identified herein.
- B. Contract Documents: Defined in AIA A101 Article 1 including issued Addenda.
- C. Bid, Offer, or Bidding: Act of submitting an offer.
- D. Bid Price: Monetary sum identified by the Bidder in the Bid Form.

3.2 CONTRACT DOCUMENTS IDENTIFICATION

- A. The Contract Documents are identified as Project No.23•46•11, prepared by the Architect, Butler Rowland Mays Architects, LLP, located at 57 West High Street, Ballston Spa, NY 12020.
- B. The Contract Documents contain:
 1. The Project Manual, containing Bidding Requirements, Contract Requirements, General Requirements, and Form of Contract.
 2. The Contract Drawings:
 - S100 Site Plan and Site Details
 - E001 Electrical Legend, Notes & Abbreviations
 - E100 Electrical Site Plan

3.3 AVAILABILITY

- A. It is the intention of the Project to be both environmentally and fiscally conscious of paper use and consumption. Therefore, Bid Documents will be distributed as digital sets. Bidding Documents, Drawings and Specifications may be viewed online free of charge at

revplans.biddyhq.com under "Public Projects", or electronically downloaded for a non-refundable charge of one hundred dollars (\$100.00). Complete sets of Bidding Documents, Drawings, and Specifications, on compact disc (CD) may be obtained from Rev, 28 Church Street, Unit 7, Warwick, NY 10990 Tel: 1-877-272-0216, upon depositing the sum of one hundred dollars (\$100.00) for each combined set of documents. Checks or money orders shall be made payable to NANUET PUBLIC LIBRARY. **Cash will not be accepted** as a deposit.

- B. The Nanuet Public Library is located at 149 Church Street, Nanuet, New York 10954. Phone: (845) 623-3088; Fax: (845) 623-2415. Library hours are: Monday - Thursday 10:00 am - 9:00 pm, Friday 10:00 am – 5:00 pm, Saturday 10:00 am – 5:00 pm and Sunday noon – 5:00 pm.
- D. Bid Documents are made available only for the purpose of obtaining offers for this project. Their use does not grant a license for other purposes.

3.4 EXAMINATION

- A. Bid Documents, in hardcopy format, may be viewed at the office of the Architect, or at the Nanuet Public Library.
- B. Upon receipt of Bid Documents, verify that documents are complete. Notify the Architect should the documents be incomplete.
- C. Immediately notify the Architect upon finding discrepancies or omissions in the Bid Documents.

3.5 QUERIES/ADDENDA

- A. Direct questions **ALL QUESTIONS** through the Architect **IN WRITING** via email or fax on the Request for Clarification form enclosed with this document. Fax: (518) 885-1266 or contact Steven Rowland via email at rowlands@brmarchitects.com.
- B. Addenda may be issued during the Bidding period. All Addenda become part of the Contract Documents. Include resultant costs in the Bid Price. *Note: only contractors that register and purchase the Bid Documents (see 3.3.A and 3.3.B above) will receive the addenda.*
- C. Verbal answers are not binding on any party.
- D. Clarifications requested by Bidders must be in writing not less than 4 business days before date set for receipt of Bids. The reply will be in the form of an Addendum, a copy of which will be forwarded to known recipients of the bid documents.

3.6 PRODUCT/SYSTEM SUBSTITUTIONS – EQUIVALENTS

- A. Where kind, type, brand, manufacturer or material are named in these specifications, they are to be regarded as the required standard of quality. If the Contractor desires to use any kind, type, brand, manufacturer or material other than those named in the specifications, the Contractor shall indicate in writing, what kind, type, brand, manufacturer or material are included in the base bid for the specified item, and when required, submit information describing in specific detail, wherein it differs from the quality and performance required by the base Specifications, and such other information as may be required to deem the substituted product equivalent. The Architect shall be sole judge of whether an item is equivalent or superior.
- B. The submission shall provide sufficient information to determine acceptability of such products.

- C. Provide complete information on required revisions to other Work to accommodate each substitution, the value of additions to or reductions from the Bid Price, including revisions to other Work.
- D. Provide Products as specified unless substitutions are submitted in this manner and subsequently accepted.
- E. Architect shall not pre-approve substitutions prior to submission of Bids.

PART 4 SITE ASSESSMENT

4.1 SITE EXAMINATION

- A. It is highly recommended that the Contractor examine the building area / project site before submitting a Bid. The Owner assumes no responsibility for contractor's lack of familiarity with the project site or with existing conditions.
- B. A **Pre-Bid Meeting** has been scheduled for **2:00PM on Wednesday, September 27, 2023** at the Library's second floor Community Meeting Room. Contractors are encouraged to attend. Minutes of the pre-bid meeting will be issued as part of an Addendum.
- C. Claims for additional compensation due to reasonably observable site conditions will not be considered.

PART 5 QUALIFICATIONS

5.1 EVIDENCE OF QUALIFICATIONS

- A. To demonstrate qualification for performing the Work of this Contract, Bidders may be requested to submit written evidence of financial position, previous experience, current commitments, and license to perform work in the State of New York.

5.2 SUBCONTRACTORS/SUPPLIERS/OTHERS

- A. The Owner reserves the right to reject a proposed Subcontractor for cause.
- B. Refer to Article 5 of AIA A201 General Conditions of the Contract, for additional subcontractor information.
- C. Contractor shall list proposed subcontractors for Plumbing, Mechanical or other work on the 004117 Supplements to Bid Form with their Bid.

PART 6 BID SUBMISSION

6.1 SUBMISSION PROCEDURE

- A. Bidders shall be solely responsible for the delivery of their Bids in the manner and time prescribed.
- B. Submit two copies of the executed offer on the Bid Forms provided, signed and sealed with the required security in a closed opaque envelope, clearly identified with Bidder's name, Project name, and Owner's name on the outside, and name of prime contract submitted.
- C. Double Envelope: Insert the closed and sealed Bid Form envelope plus requested bid bond in a large opaque envelope and label this envelope as noted above.
- D. Improperly completed information, irregularities in bid bond, may be cause not to open the Bid Form envelope and declare the Bid invalid or informal.

- E. An abstract summary of submitted Bids may be made available to all Bidders following Bid opening.

6.2 BID INELIGIBILITY

- A. Bids that are improperly signed or sealed, conditional, illegible, obscure, contain arithmetical errors, erasures, alterations, or irregularities of any kind, may, at the discretion of the Owner, be declared unacceptable.
- B. Bid Forms, Appendices, and enclosures which are improperly prepared may, at the discretion of the Owner, be declared unacceptable.
- C. Failure to provide insurance requirements, at the discretion of the Owner, invalidate the Bid.
- D. Grounds listed above for declaring a bid to be unacceptable are not deemed to be exclusive or to limit the Owner.

PART 7 BID ENCLOSURES / REQUIREMENTS

7.1 CONSENT OF SURETY / AGREEMENT TO BOND

- A. Submit with the Bid.

7.2 SECURITY DEPOSIT

- A. Bids shall be accompanied by a security deposit as follows:
 - 1. Bid Bond in the amount of a sum no less than five (5) percent of the Bid Price/Sum on AIA A310 Bid Bond Form, a copy is included in Section 004313 - Bid Bond.
- B. Endorse the Bid Bond in the name of the Owner as obligee, signed and sealed by the Contractor as principal and the Surety.
- C. Include the cost of Bid security in the Bid Price.
- D. After a Bid has been accepted, all securities will be returned to the respective Bidders.

7.3 PERFORMANCE ASSURANCE

- A. The accepted Bidder will be required to provide a Performance Bond and a Labor & Material Payment Bond as described in Document 007214 - Supplementary Conditions. Include the cost in the Contract Sum. Copies of AIA Documents A312 are included in Sections 006113 and 006114.

7.4 BID FORM REQUIREMENTS

- A. Complete all requested information in the Bid Form and Appendices.
- B. Refer to Document 007214 - Supplementary Conditions for exclusion of taxes, procedures for tax exempt status.

7.5 FEES FOR CHANGES IN THE WORK

- A. Include the fees for overhead and profit on own Work and Work by Subcontractors, identified in Document 007214 Supplementary Conditions.

7.6 BID FORM SIGNATURE

- A. The Bid Form shall be signed by the Bidder, as follows:
 - 1. Sole Proprietorship: Signature of sole proprietor in the presence of a witness who will also sign. Insert the words "Sole Proprietor" under the signature.
 - 2. Partnership: Signature in the presence of a witness who will also sign. Insert the word "Partner" under signature.

3. Corporation: Signature of a duly authorized signing officer(s) in their normal signatures. Insert the officer's capacity in which the signing officer acts, under each signature. Affix any adopted corporate seal. If the Bid is signed by officials other than the President and Secretary of the company, or the President/Secretary/Treasurer of the company, a copy of the by-law resolution of the Board of Directors authorizing them to do so, must also be submitted with the Bid Form in the Bid envelope.
4. Joint Venture: Execute the Bid Form in a manner appropriate to such party as described above, similar to the requirements of a Partnership.

7.7 SUBCONTRACTOR LIST AND AGREED UPON AMOUNTS

- A. Per NYS General Municipal Law 101(5) "Each bidder on a public work contract, where the preparation of separate specifications is not required, shall submit with its bid a separate sealed list that names each subcontractor that the bidder will use to perform work on the contract, and the agreed-upon amount to be paid to each, for: (a) plumbing and gas fitting, (b) steam heating, hot water heating, ventilating and air conditioning apparatus and (c) electric wiring and standard illuminating fixtures. After the low bid is announced, the sealed list of subcontractors submitted with such low bid shall be opened and the names of such subcontractors shall be announced, and thereafter any change of subcontractor or agreed-upon amount to be paid to each shall require the approval of the public owner, upon showing presented to the public owner of legitimate construction need for such change, which shall be open to public inspection. Legitimate construction need shall include, but not be limited to, a change in project specifications, a change in construction material costs, a change to subcontractor status as determined pursuant to paragraph (e) of subdivision two of section two hundred twenty-two of the labor law, or the subcontractor has become otherwise unwilling, unable or unavailable to perform the subcontract. The sealed lists of subcontractors submitted by all other bidders shall be returned to them unopened after the contract award.

PART 8 OFFER ACCEPTANCE/REJECTION

8.1 DURATION OF OFFER

- A. Bids shall remain open to acceptance and shall be irrevocable for a period of forty five (45) calendar days after the Bid opening date.

8.2 ACCEPTANCE OF OFFER

- A. The Owner expressly reserves the right to accept or reject any or all bids submitted in response to this bid solicitation.
- B. After acceptance by the Owner, the Architect, on behalf of the Owner, will issue to the successful Bidder a written Bid Acceptance letter of Contract Award.

END OF SECTION

(The **REQUEST FOR CLARIFICATION OF BID DOCUMENTS FORM**

and the

BID DOCUMENT CHECKLIST

follow this Page)

DOCUMENT 002113
REQUEST FOR CLARIFICATION OF BID DOCUMENTS

PROJECT: _____
STAND-BY GENERATOR
PROJECT FOR THE NANUET PUBLIC LIBRARY
149 CHURCH STREET
NANUET, NY 10954

Date Submitted: _____

Date Returned: _____

CONTRACTOR: _____

ARCHITECT: _____
BUTLER ROWLAND MAYS ARCHITECTS, LLP
57 WEST HIGH STREET
BALLSTON SPA, NY 12020

Name: _____

Address: _____

Ph: _____

Fax: _____

DIRECTIONS:

Queries regarding the contents of the Bid Documents shall be directed to the **ARCHITECT** in writing via email or fax. This Request for Clarification form shall be completed in full, and sent to the **OFFICE OF THE ARCHITECT, ATTENTION STEVN ROWLAND, rowlands@brmarchitects.com or fax: (518) 885-1266**. This form must be transmitted not less than five (5) business days prior to the date set for receipt of bids. As appropriate, the clarification response may be issued as an Addendum by the Architect, a copy of which will be forwarded to all known plan holders.

This Request for Clarification form shall be the only acceptable means of directing questions regarding the Bid Documents. This form will be returned with no action unless completed in full. Oral answers are not binding on any party.

CLARIFICATION REQUEST

SPECIFICATION PAGE No.: _____

PARAGRAPH No.: _____

CONTRACT DRAWING No.: _____

DETAIL No.: _____

QUERY:

CLARIFICATION RESPONSE

TO BE ISSUED AS PART OF ADDENDUM No.: _____

RESPONSE:

BID DOCUMENT CHECKLIST

Stand-by Generator Project at the Nanuet Public Library

The following documents must be included in your sealed bid, or your bid may be disqualified from consideration for award.

Please use this as a checklist to ensure that these documents are included in your bid.

- 004116 BID FORM
- 004117 SUPPLEMENTS TO BID FORM
- 004313 BID BOND
- 004396 CONTRACTOR'S INTEGRITY CERTIFICATION REGARDING DEBARMENT, SUSPENSION AND OTHER RESPONSIBILITY MATTERS
- 004397 STATEMENT ON SEXUAL HARASSMENT WRITTEN POLICY
- 004519 NON-COLLUSIVE BIDDING CERTIFICATION
- 004536 NON-DISCRIMINATION AND AFFIRMATIVE ACTION REQUIREMENTS

If you have any questions regarding these forms or the bid process, please contact Steven Rowland at Butler Rowland Mays Architects, LLP at (518) 885-1255 prior to sealing your bid documents.

SECTION 004116
BID FORM – ELECTRICAL CONSTRUCTION

SUBMITTED TO:

NANUET PUBLIC LIBRARY
149 CHURCH STREET
NANUET, NY 10954

SUBMITTED FOR:

STAND-BY GENERATOR PROJECT
AT THE NANUET PUBLIC LIBRARY
149 CHURCH STREET
NANUET, NY 10954

SUBMITTED BY:

BIDDER'S NAME: _____
OFFICE ADDRESS: _____

TELEPHONE NO.: _____
DATE: _____

GENERAL:

- A. I/We do hereby declare that I/we have carefully examined the Contract Documents as set forth in Article 1 of the Agreement relating to the above entitled project, and have also had the opportunity to examine the site for which the work shall be completed within.
- B. I/We do hereby offer and agree to furnish all materials, to fully and faithfully construct, perform and execute all the work in the above titled project in accordance with the Contract Documents relating hereto, and to furnish all labor, tools, and implements, models, forms, transportation and materials necessary, complete, in place and as approved; all for the lump sum price as given on the bid form(s).
- C. I/We do hereby declare that the price(s) so stated cover all expenses of every kind incidental to completion of said work, and the contract therefore including all claims that may arise through damages or any other cause whatsoever.
- D. I/We do hereby agree that I/We will execute the Agreement therefore, containing all the terms, conditions, provisions and covenants necessary to complete the work according to the Contract Documents within 30 calendar days after the Notice to Award. The execution of the Agreement will serve as the official notification to commence work.
- E. I/We hereby further agree that this proposal is a firm bid and shall remain in effect for a period of 45 calendar days from the date of the opening of bids, and that within said period of 45 days, the Owner will accept or reject this proposal, or this time period may be extended by mutual agreement.
- F. I/We do hereby declare that, if this is a corporate bid, I have been duly authorized to act as the signatory on this proposal in behalf of this corporation.
- G. I/We hereby affirm that I/we will adhere to the regulations and requirements of the United States Government, State of New York, and the local municipality and its agencies as they apply to this Agreement.

- H. I/We do hereby affirm, under penalty of perjury, the truth of all statements in this proposal.
- I. I/We hereby agree that I/we will make no claim on account of any variation of the appropriate estimate in the quantity/quantities of work to be done, whether the actual quantity/quantities are greater, smaller or completely deleted.

2. OFFER:

The undersigned Bidder hereby agrees to perform all the work of prime contract indicated as described in the Contract Documents, for the following Lump Sum Prices:

BASE BID (Total Lump Sum):

WORDS: _____

FIGURES: \$ _____

3. ACCEPTANCE

If this bid is accepted by the Owner, the Bidder agrees to the following:

- A. Execute the Agreement within THIRTY (30) calendar days of receipt of Notice to Award.
- B. Furnish the required bonds and insurance certificates within TEN (10) business days of receipt of Notice to Award.
- C. Commence the Work in accordance with the Project Schedule, after written acceptance of this bid.

4. ADDENDA

The undersigned acknowledges receipt of the following addenda:
(List by number and date appearing on each addendum)

Addendum No.:	_____	Dated:	_____
Addendum No.:	_____	Dated:	_____
Addendum No.:	_____	Dated:	_____

5. CONTRACT TIME

- A. Substantial Completion shall be obtained by _____. Final Completion shall be achieved within 14 days of Substantial Completion.

6. SITE VISITATION

The undersigned acknowledges that they have had the opportunity to visit the site prior to submitting the bid:

Date: _____ Initials: _____

7. BID FORM SIGNATURE

Respectfully
submitted by: _____

Title:

Official
Address: _____

Firm's Employer
Identification Number: _____

(Seal - if bid is by a Corporation)

NOTE:

Insert bidder's name. If a corporation, give the State of incorporation using the phrase "A Corporation under the laws of _____, composed of officers as follows:

NAME

President (Chairman)

Vice President

Secretary

Treasurer

If a partnership, give names of partners using also the phrase co-partners trading and doing business under the Firm name and style of:

composed of partners as follows:

NAME

END OF BID FORM

SECTION 004117
SUPPLEMENTS TO BID FORMS

SUBMITTED TO:

NANUET PUBLIC LIBRARY
149 CHURCH STREET
NANUET, NY 10954

SUBMITTED FOR:

STAND-BY GENERATOR PROJECT
AT THE NANUET PUBLIC LIBRARY
149 CHURCH STREET
NANUET, NY 10954

SUBMITTED BY:

Bidder's Name: _____
Office Address: _____

Telephone No.: _____
Date: _____

In accordance with Document 002113 - Instructions to Bidders and Document 004116 - Bid Form, we include the Supplements to Bid Form listed below. The information provided shall be considered an integral part of the bid Form.

These Appendices are as follows:

Appendix A - Subcontractors: Include the names of all major Subcontractors/Suppliers and the portions of the Work they will perform.

APPENDIX A

Herewith is the list of Subcontractors referenced in the Bid submitted by:

(Bidder)

dated _____ and which is an integral part of the Bid Form.

The following work will be performed (or provided) by Subcontractors/Suppliers and coordinated by the above referenced Bidder:

<u>SECTION OF WORK</u>	<u>NAME & ADDRESS OF SUBCONTRACTOR</u>
Plumbing:	_____
Mechanical:	_____
Electrical:	_____
Other:	_____

(Attach Additional Pages as Necessary)

END OF SECTION

SECTION 004313
BID BOND – AIA

1.1 BID BOND

AIA Document A310 Bid Bond, standard form for bid security deposit, is enclosed following this page.



AIA[®]

Document A310™ – 2010

Bid Bond

CONTRACTOR:

(Name, legal status and address)

SURETY:

(Name, legal status and principal place of business)

OWNER:

(Name, legal status and address)

BOND AMOUNT: \$

PROJECT:

(Name, location or address, and Project number, if any)

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

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

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

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

When this Bond has been furnished to comply with a statutory or other legal requirement in the location of the Project, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

Signed and sealed this day of ,



(Principal) *(Seal)*

(Witness)

(Title)

(Witness)

(Surety) *(Seal)*

(Title)



Init.

DOCUMENT 004396
CONTRACTOR'S INTEGRITY CERTIFICATION
REGARDING DEBARMENT, SUSPENSION AND OTHER RESPONSIBILITY MATTERS

Proposal for the Stand-by Generator Project at the Nanuet Public Library

TO: Nanuet Public Library at 149 Church Street, Nanuet, NY 19054

I, _____, hereby certify on behalf of _____

_____ that it and its principals:

1. Are not presently debarred, suspended, proposed for debarment, declared ineligible, or voluntarily excluded from covered transactions by any Federal, State, or Local department or agency;
2. Have not within a three-year period preceding this proposal been convicted of or had a civil judgment rendered against them for commission of fraud or a criminal offense in connection with obtaining, attempting to obtain, or performing a public (Federal State or local) transaction or contract under a public transaction; violation of Federal or State antitrust statutes or commission of embezzlement, theft, forgery, bribery, falsification or destruction of records, making false statements, or receiving stolen property;
3. Are not presently indicated for or otherwise criminally or civilly charge by a governmental entity (Federal, State, or local) with commission of any of the offenses enumerated in paragraph (2) of this certification; and
4. Have not within a three-year period preceding this application/proposal had one or more public transactions (Federal, State or local) terminated for cause or default.

If _____ is unable to certify to any of the statements in this certification, then and in that event _____

_____ shall attach an explanation to this certification.

The undersigned hereby certifies or affirms the truthfulness and accuracy of the contents of the statements submitted on or with this certification and understands that the provisions of 31 U.S.C. Sections 3801 et seq. are applicable thereto. (This certification is required on all contracts at or exceeding \$100,000. [49 CFR Part 29; FTA Circular 2015.1]).

Dated: _____

Signature of authorized official

Printed Name

Title

END OF SECTION

SECTION 004397
CONTRACTOR'S REQUIREMENT FOR SEXUAL HARASSMENT WRITTEN POLICY

1. By submission of this bid, each bidder and each person signing on behalf of any bidder certifies, and in the case of a joint bid each party thereto certifies as to its own organization, under penalty of perjury, that the bidder has and has implemented a written policy addressing sexual harassment prevention in the workplace and provides annual sexual harassment prevention training to all of its employees.

2. Such policy shall, at a minimum, meet the requirements of section two hundred one-g of the Labor Law.

Dated: _____

Signature of authorized official

Printed Name

Title

END OF SECTION

DOCUMENT 004439
NON-DISCRIMINATION AND AFFIRMATIVE ACTION REQUIREMENTS

The contractee will include the following provisions in every contract and purchase order, and instruct its contractors and vendors to include the following provisions in their contracts and purchase orders, in such a manner that such provisions will be binding upon each contractor or vendor as to its work in connection with this Contract:

DISCRIMINATION PROHIBITED (This provision is required by Labor Law Section 220-e and applies to all public contracts):

- (A) 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 of 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;
- (B) 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 race, creed, color, disability, sex, or national origin;
- (C) There may be deducted from the amount payable to the contractor by the state or municipality under this contract a penalty of fifty dollars for each person for each calendar day during which such person was discriminated against or intimidated in violation of the provisions of the contract;
- (D) This contract may be cancelled or terminated by the state or municipality, and all moneys due or to become due hereunder may be forfeited, for a second or any subsequent violation of the terms or conditions of this section of the contract; and
- (E) The aforesaid provisions of this section covering every contract for or on behalf of the state or a municipality for the manufacture, sale or distribution of materials, equipment or supplies shall be limited to operations performed within the territorial limits of the state of New York.

Prior to the payment of any sums by the OWNER to the CONTRACTEE, CONTRACTEE must submit to the OWNER copies of all subcontractors' workforce utilization programs, where required. In addition, CONTRACTEE agrees that after the payment of such sums, CONTRACTEE shall require all subcontractors to submit compliance reports to the OWNER relating to the operation and implementation of any workforce utilization programs, where required, as and when directed by the OWNER. CONTRACTEE further agrees that it will make reasonable efforts to give minority and women-owned business enterprises the opportunity for meaningful participation in the work to be performed in connection with this Contract, and the CONTRACTEE shall document and keep records of such efforts which may be inspected by the OWNER at its request.

FOR THE CONTRACTOR:

ORGANIZATION:

BY: _____

BY: _____

TITLE: _____

TITLE: _____

DATE: _____

DATE: _____

END OF NON-DISCRIMINATION AND AFFIRMATIVE ACTION REQUIREMENTS

DOCUMENT 004519
NON-COLLUSIVE BIDDING CERTIFICATION

Non-collusive Certification is required of all bidders under Section 103-d of the General Municipal Law of the State of New York.

BY SUBMISSION OF THIS BID, EACH BIDDER AND EACH PERSON SIGNING ON BEHALF OF ANY BIDDER CERTIFIES, AND IN THE CASE OF A JOINT BID EACH PARTY THERETO CERTIFIES AS TO ITS OWN ORGANIZATION, UNDER PENALTY OF PERJURY, THAT TO THE BEST OF KNOWLEDGE AND BELIEF:

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

DATE: _____

BIDDER: _____

BY: _____

A BID SHALL NOT BE CONSIDERED FOR AWARD NOR SHALL ANY AWARD BE MADE WHERE [1], [2], [3] ABOVE HAVE NOT BEEN COMPLIED WITH; PROVIDED HOWEVER, THAT IF IN ANY CASE THE BIDDER(S) CANNOT MAKE THE FOREGOING CERTIFICATION, THE BIDDER SHALL SO STATE AND SHALL FURNISH BELOW A SIGNED STATEMENT WHICH SETS FORTH IN DETAIL THE REASONS THEREFORE:

END OF NON-COLLUSIVE BIDDING CERTIFICATION

REGULATIONS OF THE COMMISSIONER OF EDUCATION
PART 155

1.1 DOCUMENT

Regulations of the Commissioner of Education Part 155 (8 NYCRR 155) General Municipal Law Section 155.5 Uniform Safety Standards for School Construction and Maintenance Projects follows this page.

Part 155 Regulations

Disclaimer: *These Rules of the Regents and Regulations of the Commissioner of Education ("regulations") are unofficial, and are presented for general informational purposes as a public service. Although reasonable efforts have been made to ensure that these regulations are current, complete and accurate, the State Education Department does not warrant or represent that they are current, complete and accurate. These regulations are subject to change on a regular basis. Readers are advised to consult Title 8 of the Official Compilation of Codes, Rules and Regulations of the State of New York (8 NYCRR), published by the Department of State, and the [State Register](#) for the official exposition of the text of these regulations, as well as for amendments and any subsequent changes or revisions thereto.*

OFFICIAL COMPILATION OF CODES, RULES AND REGULATIONS OF THE STATE OF NEW YORK

TITLE 8. EDUCATION DEPARTMENT

CHAPTER II. REGULATIONS OF THE COMMISSIONER

SUBCHAPTER J. BUILDINGS AND TRANSPORTATION

PART 155. EDUCATIONAL FACILITIES

Current through April 17, 2017

(Statutory authority: Education Law, §§ 101, 207, 215, 305, 305[14]

as amd. by L. 1997, ch. 464, 403-a, 403-b, 408, 409, 409-d, 409-e, 409-f[1]-[2], 409-h, 1950[4][t], 2503, 2554, 2801-a, 3602, 3602-a[4], 3641, 3713[1], [2], 4402, 4403; Energy Law, § 9-103[8]; Environmental Conservation Law, §§ 8-0113[3], 8-0117[5]; 26 USC, §§ 142[a], [k], 1397E; Executive Law, art. 2-B; L. 1987, ch. 53, § 17; L. 1992, chs. 466, 700; L. 1993, ch. 700; L. 1994, ch. 64, §§ 1, 2; L. 1997, ch. 436; L. 1998, ch. 58, §§ 13, 48, ch. 56, part B, § 1; L. 2000, ch. 60, part A, § 5 and ch. 181; L. 2000, ch. 185, § 6; L. 2001, ch. 217; L. 2002, ch. 231)

Section 155.5 Uniform Safety Standards for School Construction and Maintenance Projects

(a) Monitoring of construction and maintenance activities.

The occupied portion of any school building shall always comply with the minimum requirements necessary to maintain a certificate of occupancy and shall be monitored during construction or maintenance activities for safety violations by school district personnel. It is the responsibility of the board of education or board of cooperative educational services to assure that these standards are continuously maintained when the building or any portion thereof is occupied.

(b) Investigation and disposition of complaints relating to health and safety received as a result of construction and maintenance activities.

Boards of education and boards of cooperative educational services shall follow procedures established under section 155.4(d)(7) of this Part. (c) Pre-construction testing and planning for construction projects.

(1) Boards of education and boards of cooperative educational services shall assure that proper planning is made for safety of building occupants during construction. For all construction projects for which bids are issued on or after September 30, 1999, such boards shall assure that safety is addressed in the bid specifications and contract documents before contract documents are advertised for bid. All school areas to be disturbed during renovation or demolition shall be tested for lead and asbestos. Appropriate procedures to protect the health of building occupants shall be included in the final construction documents for bidding.

(2) Boards of education and boards of cooperative educational services shall establish procedures for involvement of the health and safety committee to monitor safety during school construction projects. The health and safety committees in school districts other than in cities with one million inhabitants or more shall be expanded during construction projects to include the project architect, construction manager, and the contractors. Such committee shall meet periodically to review issues and address complaints related to health and safety resulting from the construction project. In the case of a city school district in a city of one million inhabitants or more, the board of education shall submit procedures for protecting health and safety during construction to the commissioner for approval. Such procedures shall outline methods for compliance with this section.

(3) The district emergency management plan shall be updated to reflect any changes necessary to accommodate the construction process, including an updated emergency exit plan indicating temporary exits required due to construction. Provisions shall be made for the emergency evacuation and relocation or release of students and staff in the event of a construction incident.

(4) Fire drills shall be held to familiarize students and staff with temporary exits and revised emergency procedures whenever such temporary exits and revised emergency procedures are required.

(d) Pre-construction notification of construction projects.

The board of education or board of cooperative educational services shall establish procedures for notification of parents, staff and the community in advance of a construction project of \$10,000 or more to be conducted in a school building while the building is occupied. Such procedures shall provide notice at least two months prior to the date on which construction is scheduled to begin, provided that in the case of emergency construction projects, such notice shall be provided as far in advance of the start of construction as is practicable. Such notice shall include information on the

district's obligations under this section to provide a safe school environment during construction projects. Such notice requirement may be met by publication in district newsletters, direct mailings, or holding a public hearing on the project to inform parents, students, school personnel and community members.

(e) General safety and security standards for construction projects.

(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 shall always be locked unless a worker is in attendance to prevent unauthorized entry.

(4) During exterior renovation work, overhead protection shall be provided for any sidewalks or areas immediately beneath the work site or such areas shall be fenced off and provided with warning signs to prevent entry.

(5) Workers shall be required to wear photo identification badges at all times for identification and security purposes while working at occupied sites.

(f) 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.

(1) A specific stairwell and/or elevator should be assigned for construction worker use during work hours. In general, workers may not use corridors, stairs or elevators designated for students or school staff.

(2) Large amounts of debris must be removed by using enclosed chutes or a similar sealed system. There shall be no movement of debris through halls of occupied spaces of the building. No material shall be dropped or thrown outside the walls of the building.

(3) All occupied parts of the building affected by renovation activity shall be cleaned at the close of each workday. School buildings occupied during a construction project shall maintain required health, safety and educational capabilities at all times that classes are in session.

(g) Maintaining exiting and ventilation during school construction projects.

The following information shall be included in all plans and specifications for school building projects:

(1) A plan detailing how exiting required by the applicable building code will be maintained during construction. The plan shall indicate temporary construction required to isolate construction equipment, materials, people, dust, fumes, odors, and noise during the construction period. Temporary construction details shall meet code-required fire ratings for separation and corridor enclosure. At a minimum, required exits, temporary stairs, ramps, exit signs, and door hardware shall be provided at all times.

A plan detailing how adequate ventilation will be maintained during construction. The plan shall indicate ductwork which must be rerouted, disconnected, or capped in order to prevent contaminants from the construction area from entering the occupied areas of the building. The plan shall also indicate how required ventilation to occupied spaces affected by construction will be maintained during the project.

(h) 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:

(1) No smoking is allowed on public school property, including construction areas.

(2) During construction daily inspections of district occupied areas shall be conducted by school district personnel to assure that construction materials, equipment or debris not block fire exits or emergency egress windows.

(3) Proper operation of fire extinguishers, fire alarm, and smoke/fire detection systems shall be maintained throughout the project.

(i) 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.

The district should anticipate those times when construction noise is unacceptable and incorporate "no work" periods into the bid specifications.

(j) Control of chemical fumes, gases, and other contaminants during construction and maintenance projects.

The bid specifications and construction contracts for each construction project shall indicate how and where welding, gasoline engine, roofing, paving, painting or other fumes will be exhausted. Care must be taken to assure fresh air intakes do not draw in such fumes.

(1) The bid specifications shall require schedules of work on construction and maintenance projects which include time for off-gassing of volatile organic compounds introduced during construction before occupancy is allowed. Specific attention is warranted for activities including glues, paint, furniture, carpeting, wall coverings, and drapery. Manufacturers shall be contacted to obtain information regarding appropriate temperatures and times needed to cure or ventilate the product during use and before safe occupancy of a space can be assured. Building materials or furnishings which off-gas chemical fumes, gases, or other contaminants shall be aired out in a well ventilated heated warehouse before it is brought to the project for installation or the manufacturer's recommended off-gassing periods must be scheduled between installation and use of the space. If the work will generate toxic gases that cannot be contained in an isolated area, the work must be done when school classes and programs are not in session. The building must be properly ventilated and the material must be given proper time to cure or off-gas before re-occupancy.

(2) Manufacturer's material safety data sheets (MSD) shall be maintained at the site for all products used in the project. MSDS must be provided to anyone who requests them. MSDS indicate chemicals used in the product, product toxicity, typical side effects of exposure to the product and safe procedures for use of the product.

(k) 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). Large and small asbestos projects as defined by 12 NYCRR 56 shall not be performed while the building is occupied. Minor asbestos projects defined by 12 NYCRR 56 as an asbestos project involving the removal, disturbance, repair, encapsulation, enclosure or handling of 10 square feet or less of asbestos or asbestos material, or 25 linear feet or less of asbestos or asbestos material may be performed in unoccupied areas of an occupied building in accordance with the above referenced regulations.

(l) Lead paint.

Any construction or maintenance operations which will disturb lead based paint will require abatement of those areas pursuant to protocols detailed in the "Guidelines for the Evaluation and Control of Lead-Based Paint Hazards in Housing" (June 1995; U.S. Department of Housing and Urban Development, Washington, D.C. 20410; available at the Office of Facilities Planning, Education Building Annex, Room

1060, State Education Department, Albany, NY 12234). All areas scheduled for construction as well as areas of flaking and peeling paint shall be tested for the presence of lead and abated or encapsulated in accordance with the above noted guidelines.

(m) Radon.

Districts shall take responsibility to be aware of the geological potential for high levels of radon and to test and mitigate as appropriate. This information is available from the New York State Department of Health Radon Measurement Database.

(n) 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.

SECTION 005213
AGREEMENT - AIA A101

1.1 AGREEMENT

AIA Document A101 - 2017 - Standard Form of Agreement Between Owner and Contractor where the basis of payment is a Stipulated Sum, forms the Contract Between the Owner and Contractor, and is enclosed following this page.

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)
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§ 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
--------	-------	------

.6 Specifications

Section	Title	Date	Pages
---------	-------	------	-------

.7 Addenda, if any:

Number	Date	Pages
--------	------	-------

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

.8 Other Exhibits:

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

Init.

/

[] 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
-------	------	-------

[] Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages
----------	-------	------	-------

.9 Other documents, if any, listed below:

(List here any additional documents that are intended to form part of the Contract Documents. AIA Document 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)

CONTRACTOR (Signature)

(Printed name and title)

(Printed name and title)

SECTION 006113
PERFORMANCE BOND – AIA A312

1.1 PERFORMANCE BOND

AIA Document A312 Performance Bond is enclosed following this page.



AIA[®] Document A312[™] – 2010

Performance Bond

CONTRACTOR:

(Name, legal status and address)

SURETY:

(Name, legal status and principal place of business)

OWNER:

(Name, legal status and address)

CONSTRUCTION CONTRACT

Date:

Amount: \$

Description:

(Name and location)

BOND

Date:

(Not earlier than Construction Contract Date)

Amount: \$

Modifications to this Bond:

None

See Section 16

CONTRACTOR AS PRINCIPAL

Company: (Corporate Seal)

SURETY

Company: (Corporate Seal)

Signature: _____

Name and

Title:

(Any additional signatures appear on the last page of this Performance Bond.)

Signature: _____

Name and

Title:

(FOR INFORMATION ONLY — Name, address and telephone)

AGENT or BROKER:**OWNER'S REPRESENTATIVE:**

(Architect, Engineer or other party:)

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

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

§ 1 The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner for the performance of the Construction Contract, which is incorporated herein by reference.

§ 2 If the Contractor performs the Construction Contract, the Surety and the Contractor shall have no obligation under this Bond, except when applicable to participate in a conference as provided in Section 3.

§ 3 If there is no Owner Default under the Construction Contract, the Surety's obligation under this Bond shall arise after

- .1 the Owner first provides notice to the Contractor and the Surety that the Owner is considering declaring a Contractor Default. Such notice shall indicate whether the Owner is requesting a conference among the Owner, Contractor and Surety to discuss the Contractor's performance. If the Owner does not request a conference, the Surety may, within five (5) business days after receipt of the Owner's notice, request such a conference. If the Surety timely requests a conference, the Owner shall attend. Unless the Owner agrees otherwise, any conference requested under this Section 3.1 shall be held within ten (10) business days of the Surety's receipt of the Owner's notice. If the Owner, the Contractor and the Surety agree, the Contractor shall be allowed a reasonable time to perform the Construction Contract, but such an agreement shall not waive the Owner's right, if any, subsequently to declare a Contractor Default;
- .2 the Owner declares a Contractor Default, terminates the Construction Contract and notifies the Surety; and
- .3 the Owner has agreed to pay the Balance of the Contract Price in accordance with the terms of the Construction Contract to the Surety or to a contractor selected to perform the Construction Contract.

§ 4 Failure on the part of the Owner to comply with the notice requirement in Section 3.1 shall not constitute a failure to comply with a condition precedent to the Surety's obligations, or release the Surety from its obligations, except to the extent the Surety demonstrates actual prejudice.

§ 5 When the Owner has satisfied the conditions of Section 3, the Surety shall promptly and at the Surety's expense take one of the following actions:

§ 5.1 Arrange for the Contractor, with the consent of the Owner, to perform and complete the Construction Contract;

§ 5.2 Undertake to perform and complete the Construction Contract itself, through its agents or independent contractors;

§ 5.3 Obtain bids or negotiated proposals from qualified contractors acceptable to the Owner for a contract for performance and completion of the Construction Contract, arrange for a contract to be prepared for execution by the Owner and a contractor selected with the Owner's concurrence, to be secured with performance and payment bonds executed by a qualified surety equivalent to the bonds issued on the Construction Contract, and pay to the Owner the amount of damages as described in Section 7 in excess of the Balance of the Contract Price incurred by the Owner as a result of the Contractor Default; or

§ 5.4 Waive its right to perform and complete, arrange for completion, or obtain a new contractor and with reasonable promptness under the circumstances:

- .1 After investigation, determine the amount for which it may be liable to the Owner and, as soon as practicable after the amount is determined, make payment to the Owner; or
- .2 Deny liability in whole or in part and notify the Owner, citing the reasons for denial.

§ 6 If the Surety does not proceed as provided in Section 5 with reasonable promptness, the Surety shall be deemed to be in default on this Bond seven days after receipt of an additional written notice from the Owner to the Surety demanding that the Surety perform its obligations under this Bond, and the Owner shall be entitled to enforce any remedy available to the Owner. If the Surety proceeds as provided in Section 5.4, and the Owner refuses the payment or the Surety has denied liability, in whole or in part, without further notice the Owner shall be entitled to enforce any remedy available to the Owner.

§ 7 If the Surety elects to act under Section 5.1, 5.2 or 5.3, then the responsibilities of the Surety to the Owner shall not be greater than those of the Contractor under the Construction Contract, and the responsibilities of the Owner to the Surety shall not be greater than those of the Owner under the Construction Contract. Subject to the commitment by the Owner to pay the Balance of the Contract Price, the Surety is obligated, without duplication, for

- .1 the responsibilities of the Contractor for correction of defective work and completion of the Construction Contract;
- .2 additional legal, design professional and delay costs resulting from the Contractor's Default, and resulting from the actions or failure to act of the Surety under Section 5; and
- .3 liquidated damages, or if no liquidated damages are specified in the Construction Contract, actual damages caused by delayed performance or non-performance of the Contractor.

§ 8 If the Surety elects to act under Section 5.1, 5.3 or 5.4, the Surety's liability is limited to the amount of this Bond.

§ 9 The Surety shall not be liable to the Owner or others for obligations of the Contractor that are unrelated to the Construction Contract, and the Balance of the Contract Price shall not be reduced or set off on account of any such unrelated obligations. No right of action shall accrue on this Bond to any person or entity other than the Owner or its heirs, executors, administrators, successors and assigns.

§ 10 The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.

§ 11 Any proceeding, legal or equitable, under this Bond may be instituted in any court of competent jurisdiction in the location in which the work or part of the work is located and shall be instituted within two years after a declaration of Contractor Default or within two years after the Contractor ceased working or within two years after the Surety refuses or fails to perform its obligations under this Bond, whichever occurs first. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

§ 12 Notice to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears.

§ 13 When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

§ 14 Definitions

§ 14.1 **Balance of the Contract Price.** The total amount payable by the Owner to the Contractor under the Construction Contract after all proper adjustments have been made, including allowance to the Contractor of any amounts received or to be received by the Owner in settlement of insurance or other claims for damages to which the Contractor is entitled, reduced by all valid and proper payments made to or on behalf of the Contractor under the Construction Contract.

§ 14.2 **Construction Contract.** The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and changes made to the agreement and the Contract Documents.

§ 14.3 **Contractor Default.** Failure of the Contractor, which has not been remedied or waived, to perform or otherwise to comply with a material term of the Construction Contract.

§ 14.4 **Owner Default.** Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

§ 14.5 **Contract Documents.** All the documents that comprise the agreement between the Owner and Contractor.

§ 15 If this Bond is issued for an agreement between a Contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

§ 16 Modifications to this bond are as follows:

(Space is provided below for additional signatures of added parties, other than those appearing on the cover page.)

CONTRACTOR AS PRINCIPAL

Company: _____
(Corporate Seal)

Signature: _____
Name and Title: _____
Address: _____

SURETY

Company: _____
(Corporate Seal)

Signature: _____
Name and Title: _____
Address: _____



Init.

SECTION 006114
PAYMENT BOND – AIA A312

1.1 PAYMENT BOND

AIA Document A312 Payment Bond is enclosed following this page.



AIA[®]

Document A312™ – 2010

Payment Bond

CONTRACTOR:

(Name, legal status and address)

SURETY:

(Name, legal status and principal place of business)

OWNER:

(Name, legal status and address)

CONSTRUCTION CONTRACT

Date:

Amount: \$

Description:

(Name and location)

BOND

Date:

(Not earlier than Construction Contract Date)

Amount: \$

Modifications to this Bond:

None

See Section 18

CONTRACTOR AS PRINCIPAL

Company: *(Corporate Seal)*

SURETY

Company: *(Corporate Seal)*

Signature: _____

Name and

Title:

(Any additional signatures appear on the last page of this Payment Bond.)

Signature: _____

Name and

Title:

(FOR INFORMATION ONLY — Name, address and telephone)

AGENT or BROKER:

OWNER'S REPRESENTATIVE:

(Architect, Engineer or other party:)

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

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

§ 1 The Contractor and Surety, jointly and severally, bind themselves, their heirs, executors, administrators, successors and assigns to the Owner to pay for labor, materials and equipment furnished for use in the performance of the Construction Contract, which is incorporated herein by reference, subject to the following terms.

§ 2 If the Contractor promptly makes payment of all sums due to Claimants, and defends, indemnifies and holds harmless the Owner from claims, demands, liens or suits by any person or entity seeking payment for labor, materials or equipment furnished for use in the performance of the Construction Contract, then the Surety and the Contractor shall have no obligation under this Bond.

§ 3 If there is no Owner Default under the Construction Contract, the Surety's obligation to the Owner under this Bond shall arise after the Owner has promptly notified the Contractor and the Surety (at the address described in Section 13) of claims, demands, liens or suits against the Owner or the Owner's property by any person or entity seeking payment for labor, materials or equipment furnished for use in the performance of the Construction Contract and tendered defense of such claims, demands, liens or suits to the Contractor and the Surety.

§ 4 When the Owner has satisfied the conditions in Section 3, the Surety shall promptly and at the Surety's expense defend, indemnify and hold harmless the Owner against a duly tendered claim, demand, lien or suit.

§ 5 The Surety's obligations to a Claimant under this Bond shall arise after the following:

§ 5.1 Claimants, who do not have a direct contract with the Contractor,

- .1 have furnished a written notice of non-payment to the Contractor, stating with substantial accuracy the amount claimed and the name of the party to whom the materials were, or equipment was, furnished or supplied or for whom the labor was done or performed, within ninety (90) days after having last performed labor or last furnished materials or equipment included in the Claim; and
- .2 have sent a Claim to the Surety (at the address described in Section 13).

§ 5.2 Claimants, who are employed by or have a direct contract with the Contractor, have sent a Claim to the Surety (at the address described in Section 13).

§ 6 If a notice of non-payment required by Section 5.1.1 is given by the Owner to the Contractor, that is sufficient to satisfy a Claimant's obligation to furnish a written notice of non-payment under Section 5.1.1.

§ 7 When a Claimant has satisfied the conditions of Sections 5.1 or 5.2, whichever is applicable, the Surety shall promptly and at the Surety's expense take the following actions:

§ 7.1 Send an answer to the Claimant, with a copy to the Owner, within sixty (60) days after receipt of the Claim, stating the amounts that are undisputed and the basis for challenging any amounts that are disputed; and

§ 7.2 Pay or arrange for payment of any undisputed amounts.

§ 7.3 The Surety's failure to discharge its obligations under Section 7.1 or Section 7.2 shall not be deemed to constitute a waiver of defenses the Surety or Contractor may have or acquire as to a Claim, except as to undisputed amounts for which the Surety and Claimant have reached agreement. If, however, the Surety fails to discharge its obligations under Section 7.1 or Section 7.2, the Surety shall indemnify the Claimant for the reasonable attorney's fees the Claimant incurs thereafter to recover any sums found to be due and owing to the Claimant.

§ 8 The Surety's total obligation shall not exceed the amount of this Bond, plus the amount of reasonable attorney's fees provided under Section 7.3, and the amount of this Bond shall be credited for any payments made in good faith by the Surety.

§ 9 Amounts owed by the Owner to the Contractor under the Construction Contract shall be used for the performance of the Construction Contract and to satisfy claims, if any, under any construction performance bond. By the Contractor furnishing and the Owner accepting this Bond, they agree that all funds earned by the Contractor in the performance of the Construction Contract are dedicated to satisfy obligations of the Contractor and Surety under this Bond, subject to the Owner's priority to use the funds for the completion of the work.

§ 10 The Surety shall not be liable to the Owner, Claimants or others for obligations of the Contractor that are unrelated to the Construction Contract. The Owner shall not be liable for the payment of any costs or expenses of any Claimant under this Bond, and shall have under this Bond no obligation to make payments to, or give notice on behalf of, Claimants or otherwise have any obligations to Claimants under this Bond.

§ 11 The Surety hereby waives notice of any change, including changes of time, to the Construction Contract or to related subcontracts, purchase orders and other obligations.

§ 12 No suit or action shall be commenced by a Claimant under this Bond other than in a court of competent jurisdiction in the state in which the project that is the subject of the Construction Contract is located or after the expiration of one year from the date (1) on which the Claimant sent a Claim to the Surety pursuant to Section 5.1.2 or 5.2, or (2) on which the last labor or service was performed by anyone or the last materials or equipment were furnished by anyone under the Construction Contract, whichever of (1) or (2) first occurs. If the provisions of this Paragraph are void or prohibited by law, the minimum period of limitation available to sureties as a defense in the jurisdiction of the suit shall be applicable.

§ 13 Notice and Claims to the Surety, the Owner or the Contractor shall be mailed or delivered to the address shown on the page on which their signature appears. Actual receipt of notice or Claims, however accomplished, shall be sufficient compliance as of the date received.

§ 14 When this Bond has been furnished to comply with a statutory or other legal requirement in the location where the construction was to be performed, any provision in this Bond conflicting with said statutory or legal requirement shall be deemed deleted herefrom and provisions conforming to such statutory or other legal requirement shall be deemed incorporated herein. When so furnished, the intent is that this Bond shall be construed as a statutory bond and not as a common law bond.

§ 15 Upon request by any person or entity appearing to be a potential beneficiary of this Bond, the Contractor and Owner shall promptly furnish a copy of this Bond or shall permit a copy to be made.

§ 16 Definitions

§ 16.1 Claim. A written statement by the Claimant including at a minimum:

- .1 the name of the Claimant;
- .2 the name of the person for whom the labor was done, or materials or equipment furnished;
- .3 a copy of the agreement or purchase order pursuant to which labor, materials or equipment was furnished for use in the performance of the Construction Contract;
- .4 a brief description of the labor, materials or equipment furnished;
- .5 the date on which the Claimant last performed labor or last furnished materials or equipment for use in the performance of the Construction Contract;
- .6 the total amount earned by the Claimant for labor, materials or equipment furnished as of the date of the Claim;
- .7 the total amount of previous payments received by the Claimant; and
- .8 the total amount due and unpaid to the Claimant for labor, materials or equipment furnished as of the date of the Claim.

§ 16.2 Claimant. An individual or entity having a direct contract with the Contractor or with a subcontractor of the Contractor to furnish labor, materials or equipment for use in the performance of the Construction Contract. The term Claimant also includes any individual or entity that has rightfully asserted a claim under an applicable mechanic's lien or similar statute against the real property upon which the Project is located. The intent of this Bond shall be to include without limitation in the terms "labor, materials or equipment" that part of water, gas, power, light, heat, oil, gasoline, telephone service or rental equipment used in the Construction Contract, architectural and engineering services required for performance of the work of the Contractor and the Contractor's subcontractors, and all other items for which a mechanic's lien may be asserted in the jurisdiction where the labor, materials or equipment were furnished.

§ 16.3 Construction Contract. The agreement between the Owner and Contractor identified on the cover page, including all Contract Documents and all changes made to the agreement and the Contract Documents.

Init.

§ 16.4 **Owner Default.** Failure of the Owner, which has not been remedied or waived, to pay the Contractor as required under the Construction Contract or to perform and complete or comply with the other material terms of the Construction Contract.

§ 16.5 **Contract Documents.** All the documents that comprise the agreement between the Owner and Contractor.

§ 17 If this Bond is issued for an agreement between a Contractor and subcontractor, the term Contractor in this Bond shall be deemed to be Subcontractor and the term Owner shall be deemed to be Contractor.

§ 18 Modifications to this bond are as follows:

(Space is provided below for additional signatures of added parties, other than those appearing on the cover page.)

CONTRACTOR AS PRINCIPAL

SURETY

Company: _____ (Corporate Seal)

Company: _____ (Corporate Seal)

Signature: _____

Signature: _____

Name and Title: _____

Name and Title: _____

Address: _____

Address: _____

Init.

SECTION 006211
SUBMITTAL PROCEDURES

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Submittal procedures.
- B. Construction progress schedules.
- C. Product data.
- D. Shop drawings.
- E. Samples.

1.2 SUBMITTAL PROCEDURES

- A. Within two weeks of date of commencement, submit to the Architect a submittal schedule indicating the anticipated dates and sequence for submission of all product data, shop drawings and samples for the project. The Architect will review the proposed submittal schedule with the Architect and return an edited and/or approved copy for use on the project.
- B. Transmit each submittal with a transmittal form to the Architect. **Utilize Submittal Cover Sheet** (copy attached following this section).
- C. Sequentially number submittals. Revise submittals with original number and a sequential alphabetic suffix as necessary for resubmittals.
- D. Identify Project, Contractor, subcontractor and supplier; pertinent drawing and detail number, and specification section number, as appropriate. Specifically identify locations at which materials/systems/equipment are to be installed.
- E. Apply Contractor's stamp, signed or initialed certifying that review, approval, 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.
- F. Schedule submittals to expedite the Project, and deliver to Architect at business address. Coordinate submission of related items (similar items shall be submitted at one time). Where submittals include similar items, such as fixtures, luminaires, or other repetitive equipment, submit in a bound brochure form.
- G. For each submittal for review, allow 15 calendar days excluding delivery time to and from the Contractor.
- H. Identify variations from Contract Documents and product or system limitations which may be detrimental to successful performance of the completed Work.
- I. When revised for resubmission, identify all changes made since previous submission.

- J. Distribute copies of reviewed submittals as appropriate. Instruct parties to promptly report any inability to comply with requirements.
- K. Submittals not requested will not be recognized or processed.
- L. Items submitted for review that have not corresponded to the above procedures, including the attached cover sheet, completed in full, will be returned without review.
- M. Shop Drawings will be given a general review only. Corrections or comments made on the Shop Drawings during the review do not relieve the Contractor from compliance with the requirements of the Drawings and Specifications. Shop drawing check is intended solely for review of general conformance with the design concept of the project and general compliance with the information given in the Contract Documents. The Contractor is responsible for: confirming and correcting all quantities; checking electrical characteristics; checking and verifying system, material and field dimensions; selecting fabrication processes and techniques of construction; coordinating his work with that of all other trades; and performing his work in a safe and satisfactory manner.
- N. Submit Operating and Maintenance Manuals and Parts Lists.

1.3 CONSTRUCTION PROGRESS SCHEDULES

- A. Submit progress schedule to Architect within 15 calendar days after date established in Notice to Proceed.
- B. Submit revised Progress Schedule with each Application for Payment.
- C. Show complete sequence of construction by activity, identifying Work of separate stages and other logically grouped activities.

1.4 PRODUCT DATA

- A. Product Data: Submit to Architect for review for the limited purpose of checking for conformance with information given and the design concept expressed in the contract documents. Provide copies and distribute in accordance with SUBMITTAL PROCEDURES article and for record documents purposes.
- B. Submit three copies of product data; two copies will be retained (Architect File, and Owner copies), and one will be returned to the Contractor. Any additional copies submitted will not be returned.
- C. Mark each copy to identify applicable products, models, options, and other data. Supplement manufacturers' standard data to provide information specific to this Project.
- D. After review distribute in accordance with the Submittal Procedures article above and provide copies for record documents.

1.5 SHOP DRAWINGS

- A. Shop Drawings: Submit to Architect for review for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. Produce copies and distribute in accordance with SUBMITTAL PROCEDURES article and for record documents purposes.
- B. Submit three opaque reproductions. One will be for the Architect File, one for the Owner, and one will be returned to the Contractor for their use / transmission to subcontractors or suppliers. Any additional copies submitted will not be returned.

1.6 SAMPLES

- A. Samples: Submit to Architect for review for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. Produce duplicates and distribute in accordance with SUBMITTAL PROCEDURES article and for record documents purposes.
- B. Samples for Selection as Specified in Product Sections:
 - 1. Submit for aesthetic, color, or finish selection.
 - 2. Submit samples of finishes from the full range of manufacturers' standard colors, textures, and patterns for Architect selection.
- C. Submit samples to illustrate functional and aesthetic characteristics of the product, with integral parts and attachment devices. Coordinate sample submittals for interfacing work. Coordinate samples so that comprehensive color schemes may be developed utilizing actual product information. Delay in submitting one material in a space may hold up review of other submittals.
- D. Include identification on each sample, with full Project information.
- E. Submit the number of samples specified in individual specification sections.

PART 2 PRODUCTS

Not Used.

PART 3 EXECUTION

Not Used.

END OF SECTION

REQUIRED SUBMITTAL COVER SHEET FOLLOWS THIS SECTION

SUBMITTAL COVER SHEET

Specification Section _____

PROJECT:

Stand-by Generator Project at
The Nanuet Public Library
149 Church Street
Nanuet, New York 10954

ARCHITECT:

Butler Rowland Mays Architects, LLP
57 West High Street
Ballston Spa, NY 12020

SED 50-01-08-03-005-006

BRMA Project No.: 23•46•11

SUBMITTAL No.: _____ Date: _____

CONTRACTOR: _____
(Name & Address) _____

DESCRIPTION: _____

REMARKS: _____

REFERENCE: Spec Section: _____ Drawing No.: _____

Contractor Submittal Review: In making this submittal, we represent that we have reviewed the information contained herein and have determined and verified materials, field measurements, quantities, and field construction criteria related thereto, and that we have checked and coordinated the information contained in the submittal with the requirements of the Work and the Contract documents.

Contractor's Signature

Date

Vendor/Subcontractor: _____

ARCHITECT'S REVIEW STAMP

____ Approved ____ Furnish as Corrected
____ Rejected ____ Revise and Resubmit
____ Submit Specified Item

REVIEW IS FOR GENERAL CONFORMANCE WITH THE DESIGN CONCEPT OF THE PROJECT AND GENERAL COMPLIANCE WITH INFORMATION GIVEN IN THE CONSTRUCTION DOCUMENTS. ANY ACTION SHOWN DOES NOT RELIEVE THE CONTRACTOR FROM COMPLIANCE WITH THE REQUIREMENTS OF THE DRAWINGS AND SPECIFICATIONS. APPROVAL OF A SPECIFIC ITEM DOES NOT INCLUDE APPROVAL OF THE ASSEMBLY OF WHICH THE ITEM IS A COMPONENT. CONTRACTOR IS RESPONSIBLE FOR: DIMENSIONS WHICH SHALL BE CONFIRMED AND CORRELATED AT THE JOBSITE; FABRICATION PROCESSES, MEANS, METHODS AND TECHNIQUES OF CONSTRUCTION; COORDINATION OF THE WORK WITH ALL OTHER TRADES; AND THE SAFE AND SATISFACTORY PERFORMANCE OF THE WORK.

BUTLER ROWLAND MAYS ARCHITECTS, LLP

Signed: _____ Date: _____

SECTION 007213
GENERAL CONDITIONS – AIA A201

1.1 GENERAL CONDITIONS

AIA Document A201 - 2017 - General Conditions of the Contract for Construction, provides the General Conditions between the Owner and Contractor, and is enclosed following this page.

1.2 SUPPLEMENTARY CONDITIONS

Refer to Document 007214 for amendments to these General Conditions.



AIA[®] Document A201[™] – 2017

General Conditions of the Contract for Construction

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

THE OWNER:
(Name, legal status and address)

THE ARCHITECT:
(Name, legal status and address)

TABLE OF ARTICLES

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ARTICLE 1 GENERAL PROVISIONS

§ 1.1 Basic Definitions

§ 1.1.1 The Contract Documents

The Contract Documents are enumerated in the Agreement between the Owner and Contractor (hereinafter the Agreement) and consist of the Agreement, Conditions of the Contract (General, Supplementary and other Conditions), Drawings, Specifications, Addenda issued prior to execution of the Contract, other documents listed in the Agreement, and Modifications issued after execution of the Contract. A Modification is (1) a written amendment to the Contract signed by both parties, (2) a Change Order, (3) a Construction Change Directive, or (4) a written order for a minor change in the Work issued by the Architect. Unless specifically enumerated in the Agreement, the Contract Documents do not include the advertisement or invitation to bid, Instructions to Bidders, sample forms, other information furnished by the Owner in anticipation of receiving bids or proposals, the Contractor's bid or proposal, or portions of Addenda relating to bidding or proposal requirements.

§ 1.1.2 The Contract

The Contract Documents form the Contract for Construction. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. The Contract may be amended or modified only by a Modification. The Contract Documents shall not be construed to create a contractual relationship of any kind (1) between the Contractor and the Architect or the Architect's consultants, (2) between the Owner and a Subcontractor or a Sub-subcontractor, (3) between the Owner and the Architect or the Architect's consultants, or (4) between any persons or entities other than the Owner and the Contractor. The Architect shall, however, be entitled to performance and enforcement of obligations under the Contract intended to facilitate performance of the Architect's duties.

§ 1.1.3 The Work

The term "Work" means the construction and services required by the Contract Documents, whether completed or partially completed, and includes all other labor, materials, equipment, and services provided or to be provided by the Contractor to fulfill the Contractor's obligations. The Work may constitute the whole or a part of the Project.

§ 1.1.4 The Project

The Project is the total construction of which the Work performed under the Contract Documents may be the whole or a part and which may include construction by the Owner and by Separate Contractors.

§ 1.1.5 The Drawings

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

§ 1.1.6 The Specifications

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

§ 1.1.7 Instruments of Service

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

§ 1.1.8 Initial Decision Maker

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

§ 1.2 Correlation and Intent of the Contract Documents

§ 1.2.1 The intent of the Contract Documents is to include all items necessary for the proper execution and completion of the Work by the Contractor. The Contract Documents are complementary, and what is required by one shall be as binding as if required by all; performance by the Contractor shall be required only to the extent consistent with the Contract Documents and reasonably inferable from them as being necessary to produce the indicated results.

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§ 1.2.1.1 The invalidity of any provision of the Contract Documents shall not invalidate the Contract or its remaining provisions. If it is determined that any provision of the Contract Documents violates any law, or is otherwise invalid or unenforceable, then that provision shall be revised to the extent necessary to make that provision legal and enforceable. In such case the Contract Documents shall be construed, to the fullest extent permitted by law, to give effect to the parties' intentions and purposes in executing the Contract.

§ 1.2.2 Organization of the Specifications into divisions, sections and articles, and arrangement of Drawings shall not control the Contractor in dividing the Work among Subcontractors or in establishing the extent of Work to be performed by any trade.

§ 1.2.3 Unless otherwise stated in the Contract Documents, words that have well-known technical or construction industry meanings are used in the Contract Documents in accordance with such recognized meanings.

§ 1.3 Capitalization

Terms capitalized in these General Conditions include those that are (1) specifically defined, (2) the titles of numbered articles, or (3) the titles of other documents published by the American Institute of Architects.

§ 1.4 Interpretation

In the interest of brevity the Contract Documents frequently omit modifying words such as "all" and "any" and articles such as "the" and "an," but the fact that a modifier or an article is absent from one statement and appears in another is not intended to affect the interpretation of either statement.

§ 1.5 Ownership and Use of Drawings, Specifications, and Other Instruments of Service

§ 1.5.1 The Architect and the Architect's consultants shall be deemed the authors and owners of their respective Instruments of Service, including the Drawings and Specifications, and retain all common law, statutory, and other reserved rights in their Instruments of Service, including copyrights. The Contractor, Subcontractors, Sub-subcontractors, and suppliers shall not own or claim a copyright in the Instruments of Service. Submittal or distribution to meet official regulatory requirements or for other purposes in connection with the Project is not to be construed as publication in derogation of the Architect's or Architect's consultants' reserved rights.

§ 1.5.2 The Contractor, Subcontractors, Sub-subcontractors, and suppliers are authorized to use and reproduce the Instruments of Service provided to them, subject to any protocols established pursuant to Sections 1.7 and 1.8, solely and exclusively for execution of the Work. All copies made under this authorization shall bear the copyright notice, if any, shown on the Instruments of Service. The Contractor, Subcontractors, Sub-subcontractors, and suppliers may not use the Instruments of Service on other projects or for additions to the Project outside the scope of the Work without the specific written consent of the Owner, Architect, and the Architect's consultants.

§ 1.6 Notice

§ 1.6.1 Except as otherwise provided in Section 1.6.2, where the Contract Documents require one party to notify or give notice to the other party, such notice shall be provided in writing to the designated representative of the party to whom the notice is addressed and shall be deemed to have been duly served if delivered in person, by mail, by courier, or by electronic transmission if a method for electronic transmission is set forth in the Agreement.

§ 1.6.2 Notice of Claims as provided in Section 15.1.3 shall be provided in writing and shall be deemed to have been duly served only if delivered to the designated representative of the party to whom the notice is addressed by certified or registered mail, or by courier providing proof of delivery.

§ 1.7 Digital Data Use and Transmission

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

§ 1.8 Building Information Models Use and Reliance

Any use of, or reliance on, all or a portion of a building information model without agreement to protocols governing the use of, and reliance on, the information contained in the model and without having those protocols set forth in AIA Document E203™-2013, Building Information Modeling and Digital Data Exhibit, and the requisite AIA Document

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G202™–2013, Project Building Information Modeling Protocol Form, shall be at the using or relying party's sole risk and without liability to the other party and its contractors or consultants, the authors of, or contributors to, the building information model, and each of their agents and employees.

ARTICLE 2 OWNER

§ 2.1 General

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

§ 2.1.2 The Owner shall furnish to the Contractor, within fifteen days after receipt of a written request, information necessary and relevant for the Contractor to evaluate, give notice of, or enforce mechanic's lien rights. Such information shall include a correct statement of the record legal title to the property on which the Project is located, usually referred to as the site, and the Owner's interest therein.

§ 2.2 Evidence of the Owner's Financial Arrangements

§ 2.2.1 Prior to commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract. The Contractor shall have no obligation to commence the Work until the Owner provides such evidence. If commencement of the Work is delayed under this Section 2.2.1, the Contract Time shall be extended appropriately.

§ 2.2.2 Following commencement of the Work and upon written request by the Contractor, the Owner shall furnish to the Contractor reasonable evidence that the Owner has made financial arrangements to fulfill the Owner's obligations under the Contract only if (1) the Owner fails to make payments to the Contractor as the Contract Documents require; (2) the Contractor identifies in writing a reasonable concern regarding the Owner's ability to make payment when due; or (3) a change in the Work materially changes the Contract Sum. If the Owner fails to provide such evidence, as required, within fourteen days of the Contractor's request, the Contractor may immediately stop the Work and, in that event, shall notify the Owner that the Work has stopped. However, if the request is made because a change in the Work materially changes the Contract Sum under (3) above, the Contractor may immediately stop only that portion of the Work affected by the change until reasonable evidence is provided. If the Work is stopped under this Section 2.2.2, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided in the Contract Documents.

§ 2.2.3 After the Owner furnishes evidence of financial arrangements under this Section 2.2, the Owner shall not materially vary such financial arrangements without prior notice to the Contractor.

§ 2.2.4 Where the Owner has designated information furnished under this Section 2.2 as "confidential," the Contractor shall keep the information confidential and shall not disclose it to any other person. However, the Contractor may disclose "confidential" information, after seven (7) days' notice to the Owner, where disclosure is required by law, including a subpoena or other form of compulsory legal process issued by a court or governmental entity, or by court or arbitrator(s) order. The Contractor may also disclose "confidential" information to its employees, consultants, sureties, Subcontractors and their employees, Sub-subcontractors, and others who need to know the content of such information solely and exclusively for the Project and who agree to maintain the confidentiality of such information.

§ 2.3 Information and Services Required of the Owner

§ 2.3.1 Except for permits and fees that are the responsibility of the Contractor under the Contract Documents, including those required under Section 3.7.1, the Owner shall secure and pay for necessary approvals, easements, assessments and charges required for construction, use or occupancy of permanent structures or for permanent changes in existing facilities.

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

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

§ 2.3.4 The Owner shall furnish surveys describing physical characteristics, legal limitations and utility locations for the site of the Project, and a legal description of the site. The Contractor shall be entitled to rely on the accuracy of information furnished by the Owner but shall exercise proper precautions relating to the safe performance of the Work.

§ 2.3.5 The Owner shall furnish information or services required of the Owner by the Contract Documents with reasonable promptness. The Owner shall also furnish any other information or services under the Owner's control and relevant to the Contractor's performance of the Work with reasonable promptness after receiving the Contractor's written request for such information or services.

§ 2.3.6 Unless otherwise provided in the Contract Documents, the Owner shall furnish to the Contractor one copy of the Contract Documents for purposes of making reproductions pursuant to Section 1.5.2.

§ 2.4 Owner's Right to Stop the Work

If the Contractor fails to correct Work that is not in accordance with the requirements of the Contract Documents as required by Section 12.2 or repeatedly fails to carry out Work in accordance with the Contract Documents, the Owner may issue a written order to the Contractor to stop the Work, or any portion thereof, until the cause for such order has been eliminated; however, the right of the Owner to stop the Work shall not give rise to a duty on the part of the Owner to exercise this right for the benefit of the Contractor or any other person or entity, except to the extent required by Section 6.1.3.

§ 2.5 Owner's Right to Carry Out the Work

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents and fails within a ten-day period after receipt of notice from the Owner to commence and continue correction of such default or neglect with diligence and promptness, the Owner may, without prejudice to other remedies the Owner may have, correct such default or neglect. Such action by the Owner and amounts charged to the Contractor are both subject to prior approval of the Architect and the Architect may, pursuant to Section 9.5.1, withhold or nullify a Certificate for Payment in whole or in part, to the extent reasonably necessary to reimburse the Owner for the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Architect's additional services made necessary by such default, neglect, or failure. If current and future payments are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner. If the Contractor disagrees with the actions of the Owner or the Architect, or the amounts claimed as costs to the Owner, the Contractor may file a Claim pursuant to Article 15.

ARTICLE 3 CONTRACTOR

§ 3.1 General

§ 3.1.1 The Contractor is the person or entity identified as such in the Agreement and is referred to throughout the Contract Documents as if singular in number. The Contractor shall be lawfully licensed, if required in the jurisdiction where the Project is located. The Contractor shall designate in writing a representative who shall have express authority to bind the Contractor with respect to all matters under this Contract. The term "Contractor" means the Contractor or the Contractor's authorized representative.

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

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

§ 3.2 Review of Contract Documents and Field Conditions by Contractor

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

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.3.4, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information in such form as the Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents.

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

§ 3.2.4 If the Contractor believes that additional cost or time is involved because of clarifications or instructions the Architect issues in response to the Contractor's notices or requests for information pursuant to Sections 3.2.2 or 3.2.3, the Contractor shall submit Claims as provided in Article 15. If the Contractor fails to perform the obligations of Sections 3.2.2 or 3.2.3, the Contractor shall pay such costs and damages to the Owner, subject to Section 15.1.7, as would have been avoided if the Contractor had performed such obligations. If the Contractor performs those obligations, the Contractor shall not be liable to the Owner or Architect for damages resulting from errors, inconsistencies or omissions in the Contract Documents, for differences between field measurements or conditions and the Contract Documents, or for nonconformities of the Contract Documents to applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities.

§ 3.3 Supervision and Construction Procedures

§ 3.3.1 The Contractor shall supervise and direct the Work, using the Contractor's best skill and attention. The Contractor shall be solely responsible for, and have control over, construction means, methods, techniques, sequences, and procedures, and for coordinating all portions of the Work under the Contract. If the Contract Documents give specific instructions concerning construction means, methods, techniques, sequences, or procedures, the Contractor shall evaluate the jobsite safety thereof and shall be solely responsible for the jobsite safety of such means, methods, techniques, sequences, or procedures. If the Contractor determines that such means, methods, techniques, sequences or procedures may not be safe, the Contractor shall give timely notice to the Owner and Architect, and shall propose alternative means, methods, techniques, sequences, or procedures. The Architect shall evaluate the proposed alternative solely for conformance with the design intent for the completed construction. Unless the Architect objects to the Contractor's proposed alternative, the Contractor shall perform the Work using its alternative means, methods, techniques, sequences, or procedures.

§ 3.3.2 The Contractor shall be responsible to the Owner for acts and omissions of the Contractor's employees, Subcontractors and their agents and employees, and other persons or entities performing portions of the Work for, or on behalf of, the Contractor or any of its Subcontractors.

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

§ 3.4 Labor and Materials

§ 3.4.1 Unless otherwise provided in the Contract Documents, the Contractor shall provide and pay for labor, materials, equipment, tools, construction equipment and machinery, water, heat, utilities, transportation, and other facilities and services necessary for proper execution and completion of the Work, whether temporary or permanent and whether or not incorporated or to be incorporated in the Work.

§ 3.4.2 Except in the case of minor changes in the Work approved by the Architect in accordance with Section 3.12.8 or ordered by the Architect in accordance with Section 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect and in accordance with a Change Order or Construction Change Directive.

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§ 3.4.3 The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them.

§ 3.5 Warranty

§ 3.5.1 The Contractor warrants to the Owner and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment.

§ 3.5.2 All material, equipment, or other special warranties required by the Contract Documents shall be issued in the name of the Owner, or shall be transferable to the Owner, and shall commence in accordance with Section 9.8.4.

§ 3.6 Taxes

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

§ 3.7 Permits, Fees, Notices and Compliance with Laws

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

§ 3.7.2 The Contractor shall comply with and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities applicable to performance of the Work.

§ 3.7.3 If the Contractor performs Work knowing it to be contrary to applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, the Contractor shall assume appropriate responsibility for such Work and shall bear the costs attributable to correction.

§ 3.7.4 Concealed or Unknown Conditions

If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner and the Architect before conditions are disturbed and in no event later than 14 days after first observance of the conditions. The Architect will promptly investigate such conditions and, if the Architect determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend that an equitable adjustment be made in the Contract Sum or Contract Time, or both. If the Architect determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner and Contractor, stating the reasons. If either party disputes the Architect's determination or recommendation, that party may submit a Claim as provided in Article 15.

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

§ 3.8 Allowances

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

§ 3.8.2 Unless otherwise provided in the Contract Documents,

- .1 allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
- .2 Contractor's costs for unloading and handling at the site, labor, installation costs, overhead, profit, and other expenses contemplated for stated allowance amounts shall be included in the Contract Sum but not in the allowances; and
- .3 whenever costs are more than or less than allowances, the Contract Sum shall be adjusted accordingly by Change Order. The amount of the Change Order shall reflect (1) the difference between actual costs and the allowances under Section 3.8.2.1 and (2) changes in Contractor's costs under Section 3.8.2.2.

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

§ 3.9 Superintendent

§ 3.9.1 The Contractor shall employ a competent superintendent and necessary assistants who shall be in attendance at the Project site during performance of the Work. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the name and qualifications of a proposed superintendent. Within 14 days of receipt of the information, the Architect may notify the Contractor, stating whether the Owner or the Architect (1) has reasonable objection to the proposed superintendent or (2) requires additional time for review. Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.

§ 3.9.3 The Contractor shall not employ a proposed superintendent to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not change the superintendent without the Owner's consent, which shall not unreasonably be withheld or delayed.

§ 3.10 Contractor's Construction and Submittal Schedules

§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall submit for the Owner's and Architect's information a Contractor's construction schedule for the Work. The schedule shall contain detail appropriate for the Project, including (1) the date of commencement of the Work, interim schedule milestone dates, and the date of Substantial Completion; (2) an apportionment of the Work by construction activity; and (3) the time required for completion of each portion of the Work. The schedule shall provide for the orderly progression of the Work to completion and shall not exceed time limits current under the Contract Documents. The schedule shall be revised at appropriate intervals as required by the conditions of the Work and Project.

§ 3.10.2 The Contractor, promptly after being awarded the Contract and thereafter as necessary to maintain a current submittal schedule, shall submit a submittal schedule for the Architect's approval. The Architect's approval shall not be unreasonably delayed or withheld. The submittal schedule shall (1) be coordinated with the Contractor's construction schedule, and (2) allow the Architect reasonable time to review submittals. If the Contractor fails to submit a submittal schedule, or fails to provide submittals in accordance with the approved submittal schedule, the Contractor shall not be entitled to any increase in Contract Sum or extension of Contract Time based on the time required for review of submittals.

§ 3.10.3 The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner and Architect.

§ 3.11 Documents and Samples at the Site

The Contractor shall make available, at the Project site, the Contract Documents, including Change Orders, Construction Change Directives, and other Modifications, in good order and marked currently to indicate field changes and selections made during construction, and the approved Shop Drawings, Product Data, Samples, and similar required submittals. These shall be in electronic form or paper copy, available to the Architect and Owner, and

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delivered to the Architect for submittal to the Owner upon completion of the Work as a record of the Work as constructed.

§ 3.12 Shop Drawings, Product Data and Samples

§ 3.12.1 Shop Drawings are drawings, diagrams, schedules, and other data specially prepared for the Work by the Contractor or a Subcontractor, Sub-subcontractor, manufacturer, supplier, or distributor to illustrate some portion of the Work.

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

§ 3.12.3 Samples are physical examples that illustrate materials, equipment, or workmanship, and establish standards by which the Work will be judged.

§ 3.12.4 Shop Drawings, Product Data, Samples, and similar submittals are not Contract Documents. Their purpose is to demonstrate how the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review by the Architect is subject to the limitations of Section 4.2.7. Informational submittals upon which the Architect is not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Architect without action.

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

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

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

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

§ 3.12.9 The Contractor shall direct specific attention, in writing or on resubmitted Shop Drawings, Product Data, Samples, or similar submittals, to revisions other than those requested by the Architect on previous submittals. In the absence of such notice, the Architect's approval of a resubmission shall not apply to such revisions.

§ 3.12.10 The Contractor shall not be required to provide professional services that constitute the practice of architecture or engineering unless such services are specifically required by the Contract Documents for a portion of the Work or unless the Contractor needs to provide such services in order to carry out the Contractor's responsibilities for construction means, methods, techniques, sequences, and procedures. The Contractor shall not be required to provide professional services in violation of applicable law.

§ 3.12.10.1 If professional design services or certifications by a design professional related to systems, materials, or equipment are specifically required of the Contractor by the Contract Documents, the Owner and the Architect will specify all performance and design criteria that such services must satisfy. The Contractor shall be entitled to rely

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upon the adequacy and accuracy of the performance and design criteria provided in the Contract Documents. The Contractor shall cause such services or certifications to be provided by an appropriately licensed design professional, whose signature and seal shall appear on all drawings, calculations, specifications, certifications, Shop Drawings, and other submittals prepared by such professional. Shop Drawings, and other submittals related to the Work, designed or certified by such professional, if prepared by others, shall bear such professional's written approval when submitted to the Architect. The Owner and the Architect shall be entitled to rely upon the adequacy and accuracy of the services, certifications, and approvals performed or provided by such design professionals, provided the Owner and Architect have specified to the Contractor the performance and design criteria that such services must satisfy. Pursuant to this Section 3.12.10, the Architect will review and approve or take other appropriate action on submittals only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents.

§ 3.12.10.2 If the Contract Documents require the Contractor's design professional to certify that the Work has been performed in accordance with the design criteria, the Contractor shall furnish such certifications to the Architect at the time and in the form specified by the Architect.

§ 3.13 Use of Site

The Contractor shall confine operations at the site to areas permitted by applicable laws, statutes, ordinances, codes, rules and regulations, lawful orders of public authorities, and the Contract Documents and shall not unreasonably encumber the site with materials or equipment.

§ 3.14 Cutting and Patching

§ 3.14.1 The Contractor shall be responsible for cutting, fitting, or patching required to complete the Work or to make its parts fit together properly. All areas requiring cutting, fitting, or patching shall be restored to the condition existing prior to the cutting, fitting, or patching, unless otherwise required by the Contract Documents.

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

§ 3.15 Cleaning Up

§ 3.15.1 The Contractor shall keep the premises and surrounding area free from accumulation of waste materials and rubbish caused by operations under the Contract. At completion of the Work, the Contractor shall remove waste materials, rubbish, the Contractor's tools, construction equipment, machinery, and surplus materials from and about the Project.

§ 3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner may do so and the Owner shall be entitled to reimbursement from the Contractor.

§ 3.16 Access to Work

The Contractor shall provide the Owner and Architect with access to the Work in preparation and progress wherever located.

§ 3.17 Royalties, Patents and Copyrights

The Contractor shall pay all royalties and license fees. The Contractor shall defend suits or claims for infringement of copyrights and patent rights and shall hold the Owner and Architect harmless from loss on account thereof, but shall not be responsible for defense or loss when a particular design, process, or product of a particular manufacturer or manufacturers is required by the Contract Documents, or where the copyright violations are contained in Drawings, Specifications, or other documents prepared by the Owner or Architect. However, if an infringement of a copyright or patent is discovered by, or made known to, the Contractor, the Contractor shall be responsible for the loss unless the information is promptly furnished to the Architect.

§ 3.18 Indemnification

§ 3.18.1 To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), but only to the extent caused by the negligent acts or omissions of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, regardless of whether or not such claim, damage, loss, or expense is caused in part by a party indemnified hereunder. Such obligation shall not be construed to negate, abridge, or reduce other rights or obligations of indemnity that would otherwise exist as to a party or person described in this Section 3.18.

§ 3.18.2 In claims against any person or entity indemnified under this Section 3.18 by an employee of the Contractor, a Subcontractor, anyone directly or indirectly employed by them, or anyone for whose acts they may be liable, the indemnification obligation under Section 3.18.1 shall not be limited by a limitation on amount or type of damages, compensation, or benefits payable by or for the Contractor or a Subcontractor under workers' compensation acts, disability benefit acts, or other employee benefit acts.

ARTICLE 4 ARCHITECT

§ 4.1 General

§ 4.1.1 The Architect is the person or entity retained by the Owner pursuant to Section 2.3.2 and identified as such in the Agreement.

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

§ 4.2 Administration of the Contract

§ 4.2.1 The Architect will provide administration of the Contract as described in the Contract Documents and will be an Owner's representative during construction until the date the Architect issues the final Certificate for Payment. The Architect will have authority to act on behalf of the Owner only to the extent provided in the Contract Documents.

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

§ 4.2.3 On the basis of the site visits, the Architect will keep the Owner reasonably informed about the progress and quality of the portion of the Work completed, and promptly report to the Owner (1) known deviations from the Contract Documents, (2) known deviations from the most recent construction schedule submitted by the Contractor, and (3) defects and deficiencies observed in the Work. The Architect will not be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. The Architect will not have control over or charge of, and will not be responsible for acts or omissions of, the Contractor, Subcontractors, or their agents or employees, or any other persons or entities performing portions of the Work.

§ 4.2.4 Communications

The Owner and Contractor shall include the Architect in all communications that relate to or affect the Architect's services or professional responsibilities. The Owner shall promptly notify the Architect of the substance of any direct communications between the Owner and the Contractor otherwise relating to the Project. Communications by and with the Architect's consultants shall be through the Architect. Communications by and with Subcontractors and suppliers shall be through the Contractor. Communications by and with Separate Contractors shall be through the Owner. The Contract Documents may specify other communication protocols.

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

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

§ 4.2.7 The Architect will review and approve, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data, and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. Review of such submittals is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5, and 3.12. The Architect's review shall not constitute approval of safety precautions or of any construction means, methods, techniques, sequences, or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

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

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

§ 4.2.10 If the Owner and Architect agree, the Architect will provide one or more Project representatives to assist in carrying out the Architect's responsibilities at the site. The Owner shall notify the Contractor of any change in the duties, responsibilities and limitations of authority of the Project representatives.

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

§ 4.2.12 Interpretations and decisions of the Architect will be consistent with the intent of, and reasonably inferable from, the Contract Documents and will be in writing or in the form of drawings. When making such interpretations and decisions, the Architect will endeavor to secure faithful performance by both Owner and Contractor, will not show partiality to either, and will not be liable for results of interpretations or decisions rendered in good faith.

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

§ 4.2.14 The Architect will review and respond to requests for information about the Contract Documents. The Architect's response to such requests will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

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ARTICLE 5 SUBCONTRACTORS

§ 5.1 Definitions

§ 5.1.1 A Subcontractor is a person or entity who has a direct contract with the Contractor to perform a portion of the Work at the site. The term "Subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Subcontractor or an authorized representative of the Subcontractor. The term "Subcontractor" does not include a Separate Contractor or the subcontractors of a Separate Contractor.

§ 5.1.2 A Sub-subcontractor is a person or entity who has a direct or indirect contract with a Subcontractor to perform a portion of the Work at the site. The term "Sub-subcontractor" is referred to throughout the Contract Documents as if singular in number and means a Sub-subcontractor or an authorized representative of the Sub-subcontractor.

§ 5.2 Award of Subcontracts and Other Contracts for Portions of the Work

§ 5.2.1 Unless otherwise stated in the Contract Documents, the Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect of the persons or entities proposed for each principal portion of the Work, including those who are to furnish materials or equipment fabricated to a special design. Within 14 days of receipt of the information, the Architect may notify the Contractor whether the Owner or the Architect (1) has reasonable objection to any such proposed person or entity or (2) requires additional time for review. Failure of the Architect to provide notice within the 14-day period shall constitute notice of no reasonable objection.

§ 5.2.2 The Contractor shall not contract with a proposed person or entity to whom the Owner or Architect has made reasonable and timely objection. The Contractor shall not be required to contract with anyone to whom the Contractor has made reasonable objection.

§ 5.2.3 If the Owner or Architect has reasonable objection to a person or entity proposed by the Contractor, the Contractor shall propose another to whom the Owner or Architect has no reasonable objection. If the proposed but rejected Subcontractor was reasonably capable of performing the Work, the Contract Sum and Contract Time shall be increased or decreased by the difference, if any, occasioned by such change, and an appropriate Change Order shall be issued before commencement of the substitute Subcontractor's Work. However, no increase in the Contract Sum or Contract Time shall be allowed for such change unless the Contractor has acted promptly and responsively in submitting names as required.

§ 5.2.4 The Contractor shall not substitute a Subcontractor, person, or entity for one previously selected if the Owner or Architect makes reasonable objection to such substitution.

§ 5.3 Subcontractual Relations

By appropriate written agreement, the Contractor shall require each Subcontractor, to the extent of the Work to be performed by the Subcontractor, to be bound to the Contractor by terms of the Contract Documents, and to assume toward the Contractor all the obligations and responsibilities, including the responsibility for safety of the Subcontractor's Work that the Contractor, by these Contract Documents, assumes toward the Owner and Architect. Each subcontract agreement shall preserve and protect the rights of the Owner and Architect under the Contract Documents with respect to the Work to be performed by the Subcontractor so that subcontracting thereof will not prejudice such rights, and shall allow to the Subcontractor, unless specifically provided otherwise in the subcontract agreement, the benefit of all rights, remedies, and redress against the Contractor that the Contractor, by the Contract Documents, has against the Owner. Where appropriate, the Contractor shall require each Subcontractor to enter into similar agreements with Sub-subcontractors. The Contractor shall make available to each proposed Subcontractor, prior to the execution of the subcontract agreement, copies of the Contract Documents to which the Subcontractor will be bound, and, upon written request of the Subcontractor, identify to the Subcontractor terms and conditions of the proposed subcontract agreement that may be at variance with the Contract Documents. Subcontractors will similarly make copies of applicable portions of such documents available to their respective proposed Sub-subcontractors.

§ 5.4 Contingent Assignment of Subcontracts

§ 5.4.1 Each subcontract agreement for a portion of the Work is assigned by the Contractor to the Owner, provided that

- .1 assignment is effective only after termination of the Contract by the Owner for cause pursuant to Section 14.2 and only for those subcontract agreements that the Owner accepts by notifying the Subcontractor and Contractor; and
- .2 assignment is subject to the prior rights of the surety, if any, obligated under bond relating to the Contract.

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When the Owner accepts the assignment of a subcontract agreement, the Owner assumes the Contractor's rights and obligations under the subcontract.

§ 5.4.2 Upon such assignment, if the Work has been suspended for more than 30 days, the Subcontractor's compensation shall be equitably adjusted for increases in cost resulting from the suspension.

§ 5.4.3 Upon assignment to the Owner under this Section 5.4, the Owner may further assign the subcontract to a successor contractor or other entity. If the Owner assigns the subcontract to a successor contractor or other entity, the Owner shall nevertheless remain legally responsible for all of the successor contractor's obligations under the subcontract.

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

§ 6.1 Owner's Right to Perform Construction and to Award Separate Contracts

§ 6.1.1 The term "Separate Contractor(s)" shall mean other contractors retained by the Owner under separate agreements. The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and with Separate Contractors retained under Conditions of the Contract substantially similar to those of this Contract, including those provisions of the Conditions of the Contract related to insurance and waiver of subrogation.

§ 6.1.2 When separate contracts are awarded for different portions of the Project or other construction or operations on the site, the term "Contractor" in the Contract Documents in each case shall mean the Contractor who executes each separate Owner-Contractor Agreement.

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

§ 6.1.4 Unless otherwise provided in the Contract Documents, when the Owner performs construction or operations related to the Project with the Owner's own forces or with Separate Contractors, the Owner or its Separate Contractors shall have the same obligations and rights that the Contractor has under the Conditions of the Contract, including, without excluding others, those stated in Article 3, this Article 6, and Articles 10, 11, and 12.

§ 6.2 Mutual Responsibility

§ 6.2.1 The Contractor shall afford the Owner and Separate Contractors reasonable opportunity for introduction and storage of their materials and equipment and performance of their activities, and shall connect and coordinate the Contractor's construction and operations with theirs as required by the Contract Documents.

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner or a Separate Contractor, the Contractor shall, prior to proceeding with that portion of the Work, promptly notify the Architect of apparent discrepancies or defects in the construction or operations by the Owner or Separate Contractor that would render it unsuitable for proper execution and results of the Contractor's Work. Failure of the Contractor to notify the Architect of apparent discrepancies or defects prior to proceeding with the Work shall constitute an acknowledgment that the Owner's or Separate Contractor's completed or partially completed construction is fit and proper to receive the Contractor's Work. The Contractor shall not be responsible for discrepancies or defects in the construction or operations by the Owner or Separate Contractor that are not apparent.

§ 6.2.3 The Contractor shall reimburse the Owner for costs the Owner incurs that are payable to a Separate Contractor because of the Contractor's delays, improperly timed activities or defective construction. The Owner shall be responsible to the Contractor for costs the Contractor incurs because of a Separate Contractor's delays, improperly timed activities, damage to the Work or defective construction.

§ 6.2.4 The Contractor shall promptly remedy damage that the Contractor wrongfully causes to completed or partially completed construction or to property of the Owner or Separate Contractor as provided in Section 10.2.5.

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§ 6.2.5 The Owner and each Separate Contractor shall have the same responsibilities for cutting and patching as are described for the Contractor in Section 3.14.

§ 6.3 Owner's Right to Clean Up

If a dispute arises among the Contractor, Separate Contractors, and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, the Owner may clean up and the Architect will allocate the cost among those responsible.

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 General

§ 7.1.1 Changes in the Work may be accomplished after execution of the Contract, and without invalidating the Contract, by Change Order, Construction Change Directive or order for a minor change in the Work, subject to the limitations stated in this Article 7 and elsewhere in the Contract Documents.

§ 7.1.2 A Change Order shall be based upon agreement among the Owner, Contractor, and Architect. A Construction Change Directive requires agreement by the Owner and Architect and may or may not be agreed to by the Contractor. An order for a minor change in the Work may be issued by the Architect alone.

§ 7.1.3 Changes in the Work shall be performed under applicable provisions of the Contract Documents. The Contractor shall proceed promptly with changes in the Work, unless otherwise provided in the Change Order, Construction Change Directive, or order for a minor change in the Work.

§ 7.2 Change Orders

§ 7.2.1 A Change Order is a written instrument prepared by the Architect and signed by the Owner, Contractor, and Architect stating their agreement upon all of the following:

- .1 The change in the Work;
- .2 The amount of the adjustment, if any, in the Contract Sum; and
- .3 The extent of the adjustment, if any, in the Contract Time.

§ 7.3 Construction Change Directives

§ 7.3.1 A Construction Change Directive is a written order prepared by the Architect and signed by the Owner and Architect, directing a change in the Work prior to agreement on adjustment, if any, in the Contract Sum or Contract Time, or both. The Owner may by Construction Change Directive, without invalidating the Contract, order changes in the Work within the general scope of the Contract consisting of additions, deletions, or other revisions, the Contract Sum and Contract Time being adjusted accordingly.

§ 7.3.2 A Construction Change Directive shall be used in the absence of total agreement on the terms of a Change Order.

§ 7.3.3 If the Construction Change Directive provides for an adjustment to the Contract Sum, the adjustment shall be based on one of the following methods:

- .1 Mutual acceptance of a lump sum properly itemized and supported by sufficient substantiating data to permit evaluation;
- .2 Unit prices stated in the Contract Documents or subsequently agreed upon;
- .3 Cost to be determined in a manner agreed upon by the parties and a mutually acceptable fixed or percentage fee; or
- .4 As provided in Section 7.3.4.

§ 7.3.4 If the Contractor does not respond promptly or disagrees with the method for adjustment in the Contract Sum, the Architect shall determine the adjustment on the basis of reasonable expenditures and savings of those performing the Work attributable to the change, including, in case of an increase in the Contract Sum, an amount for overhead and profit as set forth in the Agreement, or if no such amount is set forth in the Agreement, a reasonable amount. In such case, and also under Section 7.3.3.3, the Contractor shall keep and present, in such form as the Architect may prescribe, an itemized accounting together with appropriate supporting data. Unless otherwise provided in the Contract Documents, costs for the purposes of this Section 7.3.4 shall be limited to the following:

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- .1 Costs of labor, including applicable payroll taxes, fringe benefits required by agreement or custom, workers' compensation insurance, and other employee costs approved by the Architect;
- .2 Costs of materials, supplies, and equipment, including cost of transportation, whether incorporated or consumed;
- .3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others;
- .4 Costs of premiums for all bonds and insurance, permit fees, and sales, use, or similar taxes, directly related to the change; and
- .5 Costs of supervision and field office personnel directly attributable to the change.

§ 7.3.5 If the Contractor disagrees with the adjustment in the Contract Time, the Contractor may make a Claim in accordance with applicable provisions of Article 15.

§ 7.3.6 Upon receipt of a Construction Change Directive, the Contractor shall promptly proceed with the change in the Work involved and advise the Architect of the Contractor's agreement or disagreement with the method, if any, provided in the Construction Change Directive for determining the proposed adjustment in the Contract Sum or Contract Time.

§ 7.3.7 A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be recorded as a Change Order.

§ 7.3.8 The amount of credit to be allowed by the Contractor to the Owner for a deletion or change that results in a net decrease in the Contract Sum shall be actual net cost as confirmed by the Architect. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

§ 7.3.9 Pending final determination of the total cost of a Construction Change Directive to the Owner, the Contractor may request payment for Work completed under the Construction Change Directive in Applications for Payment. The Architect will make an interim determination for purposes of monthly certification for payment for those costs and certify for payment the amount that the Architect determines, in the Architect's professional judgment, to be reasonably justified. The Architect's interim determination of cost shall adjust the Contract Sum on the same basis as a Change Order, subject to the right of either party to disagree and assert a Claim in accordance with Article 15.

§ 7.3.10 When the Owner and Contractor agree with a determination made by the Architect concerning the adjustments in the Contract Sum and Contract Time, or otherwise reach agreement upon the adjustments, such agreement shall be effective immediately and the Architect will prepare a Change Order. Change Orders may be issued for all or any part of a Construction Change Directive.

§ 7.4 Minor Changes in the Work

The Architect may order minor changes in the Work that are consistent with the intent of the Contract Documents and do not involve an adjustment in the Contract Sum or an extension of the Contract Time. The Architect's order for minor changes shall be in writing. If the Contractor believes that the proposed minor change in the Work will affect the Contract Sum or Contract Time, the Contractor shall notify the Architect and shall not proceed to implement the change in the Work. If the Contractor performs the Work set forth in the Architect's order for a minor change without prior notice to the Architect that such change will affect the Contract Sum or Contract Time, the Contractor waives any adjustment to the Contract Sum or extension of the Contract Time.

ARTICLE 8 TIME

§ 8.1 Definitions

§ 8.1.1 Unless otherwise provided, Contract Time is the period of time, including authorized adjustments, allotted in the Contract Documents for Substantial Completion of the Work.

§ 8.1.2 The date of commencement of the Work is the date established in the Agreement.

§ 8.1.3 The date of Substantial Completion is the date certified by the Architect in accordance with Section 9.8.

§ 8.1.4 The term "day" as used in the Contract Documents shall mean calendar day unless otherwise specifically defined.

§ 8.2 Progress and Completion

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

§ 8.2.2 The Contractor shall not knowingly, except by agreement or instruction of the Owner in writing, commence the Work prior to the effective date of insurance required to be furnished by the Contractor and Owner.

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

§ 8.3 Delays and Extensions of Time

§ 8.3.1 If the Contractor is delayed at any time in the commencement or progress of the Work by (1) an act or neglect of the Owner or Architect, of an employee of either, or of a Separate Contractor; (2) by changes ordered in the Work; (3) by labor disputes, fire, unusual delay in deliveries, unavoidable casualties, adverse weather conditions documented in accordance with Section 15.1.6.2, or other causes beyond the Contractor's control; (4) by delay authorized by the Owner pending mediation and binding dispute resolution; or (5) by other causes that the Contractor asserts, and the Architect determines, justify delay, then the Contract Time shall be extended for such reasonable time as the Architect may determine.

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

§ 8.3.3 This Section 8.3 does not preclude recovery of damages for delay by either party under other provisions of the Contract Documents.

ARTICLE 9 PAYMENTS AND COMPLETION

§ 9.1 Contract Sum

§ 9.1.1 The Contract Sum is stated in the Agreement and, including authorized adjustments, is the total amount payable by the Owner to the Contractor for performance of the Work under the Contract Documents.

§ 9.1.2 If unit prices are stated in the Contract Documents or subsequently agreed upon, and if quantities originally contemplated are materially changed so that application of such unit prices to the actual quantities causes substantial inequity to the Owner or Contractor, the applicable unit prices shall be equitably adjusted.

§ 9.2 Schedule of Values

Where the Contract is based on a stipulated sum or Guaranteed Maximum Price, the Contractor shall submit a schedule of values to the Architect before the first Application for Payment, allocating the entire Contract Sum to the various portions of the Work. The schedule of values shall be prepared in the form, and supported by the data to substantiate its accuracy, required by the Architect. This schedule, unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's Applications for Payment. Any changes to the schedule of values shall be submitted to the Architect and supported by such data to substantiate its accuracy as the Architect may require, and unless objected to by the Architect, shall be used as a basis for reviewing the Contractor's subsequent Applications for Payment.

§ 9.3 Applications for Payment

§ 9.3.1 At least ten days before the date established for each progress payment, the Contractor shall submit to the Architect an itemized Application for Payment prepared in accordance with the schedule of values, if required under Section 9.2, for completed portions of the Work. The application shall be notarized, if required, and supported by all data substantiating the Contractor's right to payment that the Owner or Architect require, such as copies of requisitions, and releases and waivers of liens from Subcontractors and suppliers, and shall reflect retainage if provided for in the Contract Documents.

§ 9.3.1.1 As provided in Section 7.3.9, such applications may include requests for payment on account of changes in the Work that have been properly authorized by Construction Change Directives, or by interim determinations of the Architect, but not yet included in Change Orders.

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§ 9.3.1.2 Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or supplier, unless such Work has been performed by others whom the Contractor intends to pay.

§ 9.3.2 Unless otherwise provided in the Contract Documents, payments shall be made on account of materials and equipment delivered and suitably stored at the site for subsequent incorporation in the Work. If approved in advance by the Owner, payment may similarly be made for materials and equipment suitably stored off the site at a location agreed upon in writing. Payment for materials and equipment stored on or off the site shall be conditioned upon compliance by the Contractor with procedures satisfactory to the Owner to establish the Owner's title to such materials and equipment or otherwise protect the Owner's interest, and shall include the costs of applicable insurance, storage, and transportation to the site, for such materials and equipment stored off the site.

§ 9.3.3 The Contractor warrants that title to all Work covered by an Application for Payment will pass to the Owner no later than the time of payment. The Contractor further warrants that upon submittal of an Application for Payment all Work for which Certificates for Payment have been previously issued and payments received from the Owner shall, to the best of the Contractor's knowledge, information, and belief, be free and clear of liens, claims, security interests, or encumbrances, in favor of the Contractor, Subcontractors, suppliers, or other persons or entities that provided labor, materials, and equipment relating to the Work.

§ 9.4 Certificates for Payment

§ 9.4.1 The Architect will, within seven days after receipt of the Contractor's Application for Payment, either (1) issue to the Owner a Certificate for Payment in the full amount of the Application for Payment, with a copy to the Contractor; or (2) issue to the Owner a Certificate for Payment for such amount as the Architect determines is properly due, and notify the Contractor and Owner of the Architect's reasons for withholding certification in part as provided in Section 9.5.1; or (3) withhold certification of the entire Application for Payment, and notify the Contractor and Owner of the Architect's reason for withholding certification in whole as provided in Section 9.5.1.

§ 9.4.2 The issuance of a Certificate for Payment will constitute a representation by the Architect to the Owner, based on the Architect's evaluation of the Work and the data in the Application for Payment, that, to the best of the Architect's knowledge, information, and belief, the Work has progressed to the point indicated, the quality of the Work is in accordance with the Contract Documents, and that the Contractor is entitled to payment in the amount certified. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and inspections, to correction of minor deviations from the Contract Documents prior to completion, and to specific qualifications expressed by the Architect. However, the issuance of a Certificate for Payment will not be a representation that the Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work; (2) reviewed construction means, methods, techniques, sequences, or procedures; (3) reviewed copies of requisitions received from Subcontractors and suppliers and other data requested by the Owner to substantiate the Contractor's right to payment; or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum.

§ 9.5 Decisions to Withhold Certification

§ 9.5.1 The Architect may withhold a Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Architect's opinion the representations to the Owner required by Section 9.4.2 cannot be made. If the Architect is unable to certify payment in the amount of the Application, the Architect will notify the Contractor and Owner as provided in Section 9.4.1. If the Contractor and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment previously issued, to such extent as may be necessary in the Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from acts and omissions described in Section 3.3.2, because of

- .1 defective Work not remedied;
- .2 third party claims filed or reasonable evidence indicating probable filing of such claims, unless security acceptable to the Owner is provided by the Contractor;
- .3 failure of the Contractor to make payments properly to Subcontractors or suppliers for labor, materials or equipment;

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- .4 reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;
- .5 damage to the Owner or a Separate Contractor;
- .6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or
- .7 repeated failure to carry out the Work in accordance with the Contract Documents.

§ 9.5.2 When either party disputes the Architect's decision regarding a Certificate for Payment under Section 9.5.1, in whole or in part, that party may submit a Claim in accordance with Article 15.

§ 9.5.3 When the reasons for withholding certification are removed, certification will be made for amounts previously withheld.

§ 9.5.4 If the Architect withholds certification for payment under Section 9.5.1.3, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or supplier to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Contractor shall reflect such payment on its next Application for Payment.

§ 9.6 Progress Payments

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

§ 9.6.2 The Contractor shall pay each Subcontractor, no later than seven days after receipt of payment from the Owner, the amount to which the Subcontractor is entitled, reflecting percentages actually retained from payments to the Contractor on account of the Subcontractor's portion of the Work. The Contractor shall, by appropriate agreement with each Subcontractor, require each Subcontractor to make payments to Sub-subcontractors in a similar manner.

§ 9.6.3 The Architect will, on request, furnish to a Subcontractor, if practicable, information regarding percentages of completion or amounts applied for by the Contractor and action taken thereon by the Architect and Owner on account of portions of the Work done by such Subcontractor.

§ 9.6.4 The Owner has the right to request written evidence from the Contractor that the Contractor has properly paid Subcontractors and suppliers amounts paid by the Owner to the Contractor for subcontracted Work. If the Contractor fails to furnish such evidence within seven days, the Owner shall have the right to contact Subcontractors and suppliers to ascertain whether they have been properly paid. Neither the Owner nor Architect shall have an obligation to pay, or to see to the payment of money to, a Subcontractor or supplier, except as may otherwise be required by law.

§ 9.6.5 The Contractor's payments to suppliers shall be treated in a manner similar to that provided in Sections 9.6.2, 9.6.3 and 9.6.4.

§ 9.6.6 A Certificate for Payment, a progress payment, or partial or entire use or occupancy of the Project by the Owner shall not constitute acceptance of Work not in accordance with the Contract Documents.

§ 9.6.7 Unless the Contractor provides the Owner with a payment bond in the full penal sum of the Contract Sum, payments received by the Contractor for Work properly performed by Subcontractors or provided by suppliers shall be held by the Contractor for those Subcontractors or suppliers who performed Work or furnished materials, or both, under contract with the Contractor for which payment was made by the Owner. Nothing contained herein shall require money to be placed in a separate account and not commingled with money of the Contractor, create any fiduciary liability or tort liability on the part of the Contractor for breach of trust, or entitle any person or entity to an award of punitive damages against the Contractor for breach of the requirements of this provision.

§ 9.6.8 Provided the Owner has fulfilled its payment obligations under the Contract Documents, the Contractor shall defend and indemnify the Owner from all loss, liability, damage or expense, including reasonable attorney's fees and litigation expenses, arising out of any lien claim or other claim for payment by any Subcontractor or supplier of any tier. Upon receipt of notice of a lien claim or other claim for payment, the Owner shall notify the Contractor. If approved by the applicable court, when required, the Contractor may substitute a surety bond for the property against which the lien or other claim for payment has been asserted.

§ 9.7 Failure of Payment

If the Architect does not issue a Certificate for Payment, through no fault of the Contractor, within seven days after receipt of the Contractor's Application for Payment, or if the Owner does not pay the Contractor within seven days after the date established in the Contract Documents, the amount certified by the Architect or awarded by binding dispute resolution, then the Contractor may, upon seven additional days' notice to the Owner and Architect, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided for in the Contract Documents.

§ 9.8 Substantial Completion

§ 9.8.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work for its intended use.

§ 9.8.2 When the Contractor considers that the Work, or a portion thereof which the Owner agrees to accept separately, is substantially complete, the Contractor shall prepare and submit to the Architect a comprehensive list of items to be completed or corrected prior to final payment. Failure to include an item on such list does not alter the responsibility of the Contractor to complete all Work in accordance with the Contract Documents.

§ 9.8.3 Upon receipt of the Contractor's list, the Architect will make an inspection to determine whether the Work or designated portion thereof is substantially complete. If the Architect's inspection discloses any item, whether or not included on the Contractor's list, which is not sufficiently complete in accordance with the Contract Documents so that the Owner can occupy or utilize the Work or designated portion thereof for its intended use, the Contractor shall, before issuance of the Certificate of Substantial Completion, complete or correct such item upon notification by the Architect. In such case, the Contractor shall then submit a request for another inspection by the Architect to determine Substantial Completion.

§ 9.8.4 When the Work or designated portion thereof is substantially complete, the Architect will prepare a Certificate of Substantial Completion that shall establish the date of Substantial Completion; establish responsibilities of the Owner and Contractor for security, maintenance, heat, utilities, damage to the Work and insurance; and fix the time within which the Contractor shall finish all items on the list accompanying the Certificate. Warranties required by the Contract Documents shall commence on the date of Substantial Completion of the Work or designated portion thereof unless otherwise provided in the Certificate of Substantial Completion.

§ 9.8.5 The Certificate of Substantial Completion shall be submitted to the Owner and Contractor for their written acceptance of responsibilities assigned to them in the Certificate. Upon such acceptance, and consent of surety if any, the Owner shall make payment of retainage applying to the Work or designated portion thereof. Such payment shall be adjusted for Work that is incomplete or not in accordance with the requirements of the Contract Documents.

§ 9.9 Partial Occupancy or Use

§ 9.9.1 The Owner may occupy or use any completed or partially completed portion of the Work at any stage when such portion is designated by separate agreement with the Contractor, provided such occupancy or use is consented to by the insurer and authorized by public authorities having jurisdiction over the Project. Such partial occupancy or use may commence whether or not the portion is substantially complete, provided the Owner and Contractor have accepted in writing the responsibilities assigned to each of them for payments, retainage, if any, security, maintenance, heat, utilities, damage to the Work and insurance, and have agreed in writing concerning the period for correction of the Work and commencement of warranties required by the Contract Documents. When the Contractor considers a portion substantially complete, the Contractor shall prepare and submit a list to the Architect as provided under Section 9.8.2. Consent of the Contractor to partial occupancy or use shall not be unreasonably withheld. The stage of the progress of the Work shall be determined by written agreement between the Owner and Contractor or, if no agreement is reached, by decision of the Architect.

§ 9.9.2 Immediately prior to such partial occupancy or use, the Owner, Contractor, and Architect shall jointly inspect the area to be occupied or portion of the Work to be used in order to determine and record the condition of the Work.

§ 9.9.3 Unless otherwise agreed upon, partial occupancy or use of a portion or portions of the Work shall not constitute acceptance of Work not complying with the requirements of the Contract Documents.

§ 9.10 Final Completion and Final Payment

§ 9.10.1 Upon receipt of the Contractor's notice that the Work is ready for final inspection and acceptance and upon receipt of a final Application for Payment, the Architect will promptly make such inspection. When the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Architect will promptly issue a final Certificate for Payment stating that to the best of the Architect's knowledge, information and belief, and on the basis of the Architect's on-site visits and inspections, the Work has been completed in accordance with the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Architect's final Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled.

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect, (3) a written statement that the Contractor knows of no reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment, (5) documentation of any special warranties, such as manufacturers' warranties or specific Subcontractor warranties, and (6) if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts and releases and waivers of liens, claims, security interests, or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. If a Subcontractor refuses to furnish a release or waiver required by the Owner, the Contractor may furnish a bond satisfactory to the Owner to indemnify the Owner against such lien, claim, security interest, or encumbrance. If a lien, claim, security interest, or encumbrance remains unsatisfied after payments are made, the Contractor shall refund to the Owner all money that the Owner may be compelled to pay in discharging the lien, claim, security interest, or encumbrance, including all costs and reasonable attorneys' fees.

§ 9.10.3 If, after Substantial Completion of the Work, final completion thereof is materially delayed through no fault of the Contractor or by issuance of Change Orders affecting final completion, and the Architect so confirms, the Owner shall, upon application by the Contractor and certification by the Architect, and without terminating the Contract, make payment of the balance due for that portion of the Work fully completed, corrected, and accepted. If the remaining balance for Work not fully completed or corrected is less than retainage stipulated in the Contract Documents, and if bonds have been furnished, the written consent of the surety to payment of the balance due for that portion of the Work fully completed and accepted shall be submitted by the Contractor to the Architect prior to certification of such payment. Such payment shall be made under terms and conditions governing final payment, except that it shall not constitute a waiver of Claims.

§ 9.10.4 The making of final payment shall constitute a waiver of Claims by the Owner except those arising from

- .1 liens, Claims, security interests, or encumbrances arising out of the Contract and unsettled;
- .2 failure of the Work to comply with the requirements of the Contract Documents;
- .3 terms of special warranties required by the Contract Documents; or
- .4 audits performed by the Owner, if permitted by the Contract Documents, after final payment.

§ 9.10.5 Acceptance of final payment by the Contractor, a Subcontractor, or a supplier, shall constitute a waiver of claims by that payee except those previously made in writing and identified by that payee as unsettled at the time of final Application for Payment.

ARTICLE 10 PROTECTION OF PERSONS AND PROPERTY

§ 10.1 Safety Precautions and Programs

The Contractor shall be responsible for initiating, maintaining, and supervising all safety precautions and programs in connection with the performance of the Contract.

§ 10.2 Safety of Persons and Property

§ 10.2.1 The Contractor shall take reasonable precautions for safety of, and shall provide reasonable protection to prevent damage, injury, or loss to

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- .1 employees on the Work and other persons who may be affected thereby;
- .2 the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody, or control of the Contractor, a Subcontractor, or a Sub-subcontractor; and
- .3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction.

§ 10.2.2 The Contractor shall comply with, and give notices required by applicable laws, statutes, ordinances, codes, rules and regulations, and lawful orders of public authorities, bearing on safety of persons or property or their protection from damage, injury, or loss.

§ 10.2.3 The Contractor shall implement, erect, and maintain, as required by existing conditions and performance of the Contract, reasonable safeguards for safety and protection, including posting danger signs and other warnings against hazards; promulgating safety regulations; and notifying the owners and users of adjacent sites and utilities of the safeguards.

§ 10.2.4 When use or storage of explosives or other hazardous materials or equipment, or unusual methods are necessary for execution of the Work, the Contractor shall exercise utmost care and carry on such activities under supervision of properly qualified personnel.

§ 10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2 and 10.2.1.3 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2 and 10.2.1.3. The Contractor may make a Claim for the cost to remedy the damage or loss to the extent such damage or loss is attributable to acts or omissions of the Owner or Architect or anyone directly or indirectly employed by either of them, or by anyone for whose acts either of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.

§ 10.2.6 The Contractor shall designate a responsible member of the Contractor's organization at the site whose duty shall be the prevention of accidents. This person shall be the Contractor's superintendent unless otherwise designated by the Contractor in writing to the Owner and Architect.

§ 10.2.7 The Contractor shall not permit any part of the construction or site to be loaded so as to cause damage or create an unsafe condition.

§ 10.2.8 Injury or Damage to Person or Property

If either party suffers injury or damage to person or property because of an act or omission of the other party, or of others for whose acts such party is legally responsible, notice of the injury or damage, whether or not insured, shall be given to the other party within a reasonable time not exceeding 21 days after discovery. The notice shall provide sufficient detail to enable the other party to investigate the matter.

§ 10.3 Hazardous Materials and Substances

§ 10.3.1 The Contractor is responsible for compliance with any requirements included in the Contract Documents regarding hazardous materials or substances. If the Contractor encounters a hazardous material or substance not addressed in the Contract Documents and if reasonable precautions will be inadequate to prevent foreseeable bodily injury or death to persons resulting from a material or substance, including but not limited to asbestos or polychlorinated biphenyl (PCB), encountered on the site by the Contractor, the Contractor shall, upon recognizing the condition, immediately stop Work in the affected area and notify the Owner and Architect of the condition.

§ 10.3.2 Upon receipt of the Contractor's notice, the Owner shall obtain the services of a licensed laboratory to verify the presence or absence of the material or substance reported by the Contractor and, in the event such material or substance is found to be present, to cause it to be rendered harmless. Unless otherwise required by the Contract Documents, the Owner shall furnish in writing to the Contractor and Architect the names and qualifications of persons or entities who are to perform tests verifying the presence or absence of the material or substance or who are to perform the task of removal or safe containment of the material or substance. The Contractor and the Architect will

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promptly reply to the Owner in writing stating whether or not either has reasonable objection to the persons or entities proposed by the Owner. If either the Contractor or Architect has an objection to a person or entity proposed by the Owner, the Owner shall propose another to whom the Contractor and the Architect have no reasonable objection. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written agreement of the Owner and Contractor. By Change Order, the Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable additional costs of shutdown, delay, and start-up.

§ 10.3.3 To the fullest extent permitted by law, the Owner shall indemnify and hold harmless the Contractor, Subcontractors, Architect, Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and expenses, including but not limited to attorneys' fees, arising out of or resulting from performance of the Work in the affected area if in fact the material or substance presents the risk of bodily injury or death as described in Section 10.3.1 and has not been rendered harmless, provided that such claim, damage, loss, or expense is attributable to bodily injury, sickness, disease or death, or to injury to or destruction of tangible property (other than the Work itself), except to the extent that such damage, loss, or expense is due to the fault or negligence of the party seeking indemnity.

§ 10.3.4 The Owner shall not be responsible under this Section 10.3 for hazardous materials or substances the Contractor brings to the site unless such materials or substances are required by the Contract Documents. The Owner shall be responsible for hazardous materials or substances required by the Contract Documents, except to the extent of the Contractor's fault or negligence in the use and handling of such materials or substances.

§ 10.3.5 The Contractor shall reimburse the Owner for the cost and expense the Owner incurs (1) for remediation of hazardous materials or substances the Contractor brings to the site and negligently handles, or (2) where the Contractor fails to perform its obligations under Section 10.3.1, except to the extent that the cost and expense are due to the Owner's fault or negligence.

§ 10.3.6 If, without negligence on the part of the Contractor, the Contractor is held liable by a government agency for the cost of remediation of a hazardous material or substance solely by reason of performing Work as required by the Contract Documents, the Owner shall reimburse the Contractor for all cost and expense thereby incurred.

§ 10.4 Emergencies

In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's discretion, to prevent threatened damage, injury, or loss. Additional compensation or extension of time claimed by the Contractor on account of an emergency shall be determined as provided in Article 15 and Article 7.

ARTICLE 11 INSURANCE AND BONDS

§ 11.1 Contractor's Insurance and Bonds

§ 11.1.1 The Contractor shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Contractor shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Owner, Architect, and Architect's consultants shall be named as additional insureds under the Contractor's commercial general liability policy or as otherwise described in the Contract Documents.

§ 11.1.2 The Contractor shall provide surety bonds of the types, for such penal sums, and subject to such terms and conditions as required by the Contract Documents. The Contractor shall purchase and maintain the required bonds from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located.

§ 11.1.3 Upon the request of any person or entity appearing to be a potential beneficiary of bonds covering payment of obligations arising under the Contract, the Contractor shall promptly furnish a copy of the bonds or shall authorize a copy to be furnished.

§ 11.1.4 **Notice of Cancellation or Expiration of Contractor's Required Insurance.** Within three (3) business days of the date the Contractor becomes aware of an impending or actual cancellation or expiration of any insurance required by the Contract Documents, the Contractor shall provide notice to the Owner of such impending or actual cancellation or

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expiration. Upon receipt of notice from the Contractor, the Owner shall, unless the lapse in coverage arises from an act or omission of the Owner, have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by the Contractor. The furnishing of notice by the Contractor shall not relieve the Contractor of any contractual obligation to provide any required coverage.

§ 11.2 Owner's Insurance

§ 11.2.1 The Owner shall purchase and maintain insurance of the types and limits of liability, containing the endorsements, and subject to the terms and conditions, as described in the Agreement or elsewhere in the Contract Documents. The Owner shall purchase and maintain the required insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located.

§ 11.2.2 Failure to Purchase Required Property Insurance. If the Owner fails to purchase and maintain the required property insurance, with all of the coverages and in the amounts described in the Agreement or elsewhere in the Contract Documents, the Owner shall inform the Contractor in writing prior to commencement of the Work. Upon receipt of notice from the Owner, the Contractor may delay commencement of the Work and may obtain insurance that will protect the interests of the Contractor, Subcontractors, and Sub-Subcontractors in the Work. When the failure to provide coverage has been cured or resolved, the Contract Sum and Contract Time shall be equitably adjusted. In the event the Owner fails to procure coverage, the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent the loss to the Owner would have been covered by the insurance to have been procured by the Owner. The cost of the insurance shall be charged to the Owner by a Change Order. If the Owner does not provide written notice, and the Contractor is damaged by the failure or neglect of the Owner to purchase or maintain the required insurance, the Owner shall reimburse the Contractor for all reasonable costs and damages attributable thereto.

§ 11.2.3 Notice of Cancellation or Expiration of Owner's Required Property Insurance. Within three (3) business days of the date the Owner becomes aware of an impending or actual cancellation or expiration of any property insurance required by the Contract Documents, the Owner shall provide notice to the Contractor of such impending or actual cancellation or expiration. Unless the lapse in coverage arises from an act or omission of the Contractor: (1) the Contractor, upon receipt of notice from the Owner, shall have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by either the Owner or the Contractor; (2) the Contract Time and Contract Sum shall be equitably adjusted; and (3) the Owner waives all rights against the Contractor, Subcontractors, and Sub-subcontractors to the extent any loss to the Owner would have been covered by the insurance had it not expired or been cancelled. If the Contractor purchases replacement coverage, the cost of the insurance shall be charged to the Owner by an appropriate Change Order. The furnishing of notice by the Owner shall not relieve the Owner of any contractual obligation to provide required insurance.

§ 11.3 Waivers of Subrogation

§ 11.3.1 The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents, and employees, each of the other; (2) the Architect and Architect's consultants; and (3) Separate Contractors, if any, and any of their subcontractors, sub-subcontractors, agents, and employees, for damages caused by fire, or other causes of loss, to the extent those losses are covered by property insurance required by the Agreement or other property insurance applicable to the Project, except such rights as they have to proceeds of such insurance. The Owner or Contractor, as appropriate, shall require similar written waivers in favor of the individuals and entities identified above from the Architect, Architect's consultants, Separate Contractors, subcontractors, and sub-subcontractors. The policies of insurance purchased and maintained by each person or entity agreeing to waive claims pursuant to this section 11.3.1 shall not prohibit this waiver of subrogation. This waiver of subrogation shall be effective as to a person or entity (1) even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, (2) even though that person or entity did not pay the insurance premium directly or indirectly, or (3) whether or not the person or entity had an insurable interest in the damaged property.

§ 11.3.2 If during the Project construction period the Owner insures properties, real or personal or both, at or adjacent to the site by property insurance under policies separate from those insuring the Project, or if after final payment property insurance is to be provided on the completed Project through a policy or policies other than those insuring the Project during the construction period, to the extent permissible by such policies, the Owner waives all rights in accordance with the terms of Section 11.3.1 for damages caused by fire or other causes of loss covered by this separate property insurance.

§ 11.4 Loss of Use, Business Interruption, and Delay in Completion Insurance

The Owner, at the Owner's option, may purchase and maintain insurance that will protect the Owner against loss of use of the Owner's property, or the inability to conduct normal operations, due to fire or other causes of loss. The Owner waives all rights of action against the Contractor and Architect for loss of use of the Owner's property, due to fire or other hazards however caused.

§11.5 Adjustment and Settlement of Insured Loss

§ 11.5.1 A loss insured under the property insurance required by the Agreement shall be adjusted by the Owner as fiduciary and made payable to the Owner as fiduciary for the insureds, as their interests may appear, subject to requirements of any applicable mortgagee clause and of Section 11.5.2. The Owner shall pay the Architect and Contractor their just shares of insurance proceeds received by the Owner, and by appropriate agreements the Architect and Contractor shall make payments to their consultants and Subcontractors in similar manner.

§ 11.5.2 Prior to settlement of an insured loss, the Owner shall notify the Contractor of the terms of the proposed settlement as well as the proposed allocation of the insurance proceeds. The Contractor shall have 14 days from receipt of notice to object to the proposed settlement or allocation of the proceeds. If the Contractor does not object, the Owner shall settle the loss and the Contractor shall be bound by the settlement and allocation. Upon receipt, the Owner shall deposit the insurance proceeds in a separate account and make the appropriate distributions. Thereafter, if no other agreement is made or the Owner does not terminate the Contract for convenience, the Owner and Contractor shall execute a Change Order for reconstruction of the damaged or destroyed Work in the amount allocated for that purpose. If the Contractor timely objects to either the terms of the proposed settlement or the allocation of the proceeds, the Owner may proceed to settle the insured loss, and any dispute between the Owner and Contractor arising out of the settlement or allocation of the proceeds shall be resolved pursuant to Article 15. Pending resolution of any dispute, the Owner may issue a Construction Change Directive for the reconstruction of the damaged or destroyed Work.

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 Uncovering of Work

§ 12.1.1 If a portion of the Work is covered contrary to the Architect's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by the Architect, be uncovered for the Architect's examination and be replaced at the Contractor's expense without change in the Contract Time.

§ 12.1.2 If a portion of the Work has been covered that the Architect has not specifically requested to examine prior to its being covered, the Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, the Contractor shall be entitled to an equitable adjustment to the Contract Sum and Contract Time as may be appropriate. If such Work is not in accordance with the Contract Documents, the costs of uncovering the Work, and the cost of correction, shall be at the Contractor's expense.

§ 12.2 Correction of Work

§ 12.2.1 Before Substantial Completion

The Contractor shall promptly correct Work rejected by the Architect or failing to conform to the requirements of the Contract Documents, discovered before Substantial Completion and whether or not fabricated, installed or completed. Costs of correcting such rejected Work, including additional testing and inspections, the cost of uncovering and replacement, and compensation for the Architect's services and expenses made necessary thereby, shall be at the Contractor's expense.

§ 12.2.2 After Substantial Completion

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5, if, within one year after the date of Substantial Completion of the Work or designated portion thereof or after the date for commencement of warranties established under Section 9.9.1, or by terms of any applicable special warranty required by the Contract Documents, any of the Work is found to be not in accordance with the requirements of the Contract Documents, the Contractor shall correct it promptly after receipt of notice from the Owner to do so, unless the Owner has previously given the Contractor a written acceptance of such condition. The Owner shall give such notice promptly after discovery of the condition. During the one-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during

that period after receipt of notice from the Owner or Architect, the Owner may correct it in accordance with Section 2.5.

§ 12.2.2.2 The one-year period for correction of Work shall be extended with respect to portions of Work first performed after Substantial Completion by the period of time between Substantial Completion and the actual completion of that portion of the Work.

§ 12.2.2.3 The one-year period for correction of Work shall not be extended by corrective Work performed by the Contractor pursuant to this Section 12.2.

§ 12.2.3 The Contractor shall remove from the site portions of the Work that are not in accordance with the requirements of the Contract Documents and are neither corrected by the Contractor nor accepted by the Owner.

§ 12.2.4 The Contractor shall bear the cost of correcting destroyed or damaged construction of the Owner or Separate Contractors, whether completed or partially completed, caused by the Contractor's correction or removal of Work that is not in accordance with the requirements of the Contract Documents.

§ 12.2.5 Nothing contained in this Section 12.2 shall be construed to establish a period of limitation with respect to other obligations the Contractor has under the Contract Documents. Establishment of the one-year period for correction of Work as described in Section 12.2.2 relates only to the specific obligation of the Contractor to correct the Work, and has no relationship to the time within which the obligation to comply with the Contract Documents may be sought to be enforced, nor to the time within which proceedings may be commenced to establish the Contractor's liability with respect to the Contractor's obligations other than specifically to correct the Work.

§ 12.3 Acceptance of Nonconforming Work

If the Owner prefers to accept Work that is not in accordance with the requirements of the Contract Documents, the Owner may do so instead of requiring its removal and correction, in which case the Contract Sum will be reduced as appropriate and equitable. Such adjustment shall be effected whether or not final payment has been made.

ARTICLE 13 MISCELLANEOUS PROVISIONS

§ 13.1 Governing Law

The Contract shall be governed by the law of the place where the Project is located, excluding that jurisdiction's choice of law rules. If the parties have selected arbitration as the method of binding dispute resolution, the Federal Arbitration Act shall govern Section 15.4.

§ 13.2 Successors and Assigns

§ 13.2.1 The Owner and Contractor respectively bind themselves, their partners, successors, assigns, and legal representatives to covenants, agreements, and obligations contained in the Contract Documents. Except as provided in Section 13.2.2, neither party to the Contract shall assign the Contract as a whole without written consent of the other. If either party attempts to make an assignment without such consent, that party shall nevertheless remain legally responsible for all obligations under the Contract.

§ 13.2.2 The Owner may, without consent of the Contractor, assign the Contract to a lender providing construction financing for the Project, if the lender assumes the Owner's rights and obligations under the Contract Documents. The Contractor shall execute all consents reasonably required to facilitate the assignment.

§ 13.3 Rights and Remedies

§ 13.3.1 Duties and obligations imposed by the Contract Documents and rights and remedies available thereunder shall be in addition to and not a limitation of duties, obligations, rights, and remedies otherwise imposed or available by law.

§ 13.3.2 No action or failure to act by the Owner, Architect, or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach thereunder, except as may be specifically agreed upon in writing.

§ 13.4 Tests and Inspections

§ 13.4.1 Tests, inspections, and approvals of portions of the Work shall be made as required by the Contract Documents and by applicable laws, statutes, ordinances, codes, rules, and regulations or lawful orders of public authorities. Unless otherwise provided, the Contractor shall make arrangements for such tests, inspections, and approvals with an independent testing laboratory or entity acceptable to the Owner, or with the appropriate public authority, and shall bear all related costs of tests, inspections, and approvals. The Contractor shall give the Architect timely notice of when and where tests and inspections are to be made so that the Architect may be present for such procedures. The Owner shall bear costs of tests, inspections, or approvals that do not become requirements until after bids are received or negotiations concluded. The Owner shall directly arrange and pay for tests, inspections, or approvals where building codes or applicable laws or regulations so require.

§ 13.4.2 If the Architect, Owner, or public authorities having jurisdiction determine that portions of the Work require additional testing, inspection, or approval not included under Section 13.4.1, the Architect will, upon written authorization from the Owner, instruct the Contractor to make arrangements for such additional testing, inspection, or approval, by an entity acceptable to the Owner, and the Contractor shall give timely notice to the Architect of when and where tests and inspections are to be made so that the Architect may be present for such procedures. Such costs, except as provided in Section 13.4.3, shall be at the Owner's expense.

§ 13.4.3 If procedures for testing, inspection, or approval under Sections 13.4.1 and 13.4.2 reveal failure of the portions of the Work to comply with requirements established by the Contract Documents, all costs made necessary by such failure, including those of repeated procedures and compensation for the Architect's services and expenses, shall be at the Contractor's expense.

§ 13.4.4 Required certificates of testing, inspection, or approval shall, unless otherwise required by the Contract Documents, be secured by the Contractor and promptly delivered to the Architect.

§ 13.4.5 If the Architect is to observe tests, inspections, or approvals required by the Contract Documents, the Architect will do so promptly and, where practicable, at the normal place of testing.

§ 13.4.6 Tests or inspections conducted pursuant to the Contract Documents shall be made promptly to avoid unreasonable delay in the Work.

§ 13.5 Interest

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

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 Termination by the Contractor

§ 14.1.1 The Contractor may terminate the Contract if the Work is stopped for a period of 30 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, for any of the following reasons:

- .1 Issuance of an order of a court or other public authority having jurisdiction that requires all Work to be stopped;
- .2 An act of government, such as a declaration of national emergency, that requires all Work to be stopped;
- .3 Because the Architect has not issued a Certificate for Payment and has not notified the Contractor of the reason for withholding certification as provided in Section 9.4.1, or because the Owner has not made payment on a Certificate for Payment within the time stated in the Contract Documents; or
- .4 The Owner has failed to furnish to the Contractor reasonable evidence as required by Section 2.2.

§ 14.1.2 The Contractor may terminate the Contract if, through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, their agents or employees, or any other persons or entities performing portions of the Work, repeated suspensions, delays, or interruptions of the entire Work by the Owner as described in Section 14.3, constitute in the aggregate more than 100 percent of the total number of days scheduled for completion, or 120 days in any 365-day period, whichever is less.

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§ 14.1.3 If one of the reasons described in Section 14.1.1 or 14.1.2 exists, the Contractor may, upon seven days' notice to the Owner and Architect, terminate the Contract and recover from the Owner payment for Work executed, as well as reasonable overhead and profit on Work not executed, and costs incurred by reason of such termination.

§ 14.1.4 If the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor, a Subcontractor, a Sub-subcontractor, or their agents or employees or any other persons or entities performing portions of the Work because the Owner has repeatedly failed to fulfill the Owner's obligations under the Contract Documents with respect to matters important to the progress of the Work, the Contractor may, upon seven additional days' notice to the Owner and the Architect, terminate the Contract and recover from the Owner as provided in Section 14.1.3.

§ 14.2 Termination by the Owner for Cause

§ 14.2.1 The Owner may terminate the Contract if the Contractor

- .1 repeatedly refuses or fails to supply enough properly skilled workers or proper materials;
- .2 fails to make payment to Subcontractors or suppliers in accordance with the respective agreements between the Contractor and the Subcontractors or suppliers;
- .3 repeatedly disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or
- .4 otherwise is guilty of substantial breach of a provision of the Contract Documents.

§ 14.2.2 When any of the reasons described in Section 14.2.1 exist, and upon certification by the Architect that sufficient cause exists to justify such action, the Owner may, without prejudice to any other rights or remedies of the Owner and after giving the Contractor and the Contractor's surety, if any, seven days' notice, terminate employment of the Contractor and may, subject to any prior rights of the surety:

- .1 Exclude the Contractor from the site and take possession of all materials, equipment, tools, and construction equipment and machinery thereon owned by the Contractor;
- .2 Accept assignment of subcontracts pursuant to Section 5.4; and
- .3 Finish the Work by whatever reasonable method the Owner may deem expedient. Upon written request of the Contractor, the Owner shall furnish to the Contractor a detailed accounting of the costs incurred by the Owner in finishing the Work.

§ 14.2.3 When the Owner terminates the Contract for one of the reasons stated in Section 14.2.1, the Contractor shall not be entitled to receive further payment until the Work is finished.

§ 14.2.4 If the unpaid balance of the Contract Sum exceeds costs of finishing the Work, including compensation for the Architect's services and expenses made necessary thereby, and other damages incurred by the Owner and not expressly waived, such excess shall be paid to the Contractor. If such costs and damages exceed the unpaid balance, the Contractor shall pay the difference to the Owner. The amount to be paid to the Contractor or Owner, as the case may be, shall be certified by the Initial Decision Maker, upon application, and this obligation for payment shall survive termination of the Contract.

§ 14.3 Suspension by the Owner for Convenience

§ 14.3.1 The Owner may, without cause, order the Contractor in writing to suspend, delay or interrupt the Work, in whole or in part for such period of time as the Owner may determine.

§ 14.3.2 The Contract Sum and Contract Time shall be adjusted for increases in the cost and time caused by suspension, delay, or interruption under Section 14.3.1. Adjustment of the Contract Sum shall include profit. No adjustment shall be made to the extent

- .1 that performance is, was, or would have been, so suspended, delayed, or interrupted, by another cause for which the Contractor is responsible; or
- .2 that an equitable adjustment is made or denied under another provision of the Contract.

§ 14.4 Termination by the Owner for Convenience

§ 14.4.1 The Owner may, at any time, terminate the Contract for the Owner's convenience and without cause.

§ 14.4.2 Upon receipt of notice from the Owner of such termination for the Owner's convenience, the Contractor shall

- .1 cease operations as directed by the Owner in the notice;

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- 2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and
- 3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

§ 14.4.3 In case of such termination for the Owner's convenience, the Owner shall pay the Contractor for Work properly executed; costs incurred by reason of the termination, including costs attributable to termination of Subcontracts; and the termination fee, if any, set forth in the Agreement.

ARTICLE 15 CLAIMS AND DISPUTES

§ 15.1 Claims

§ 15.1.1 Definition

A Claim is a demand or assertion by one of the parties seeking, as a matter of right, payment of money, a change in the Contract Time, or other relief with respect to the terms of the Contract. The term "Claim" also includes other disputes and matters in question between the Owner and Contractor arising out of or relating to the Contract. The responsibility to substantiate Claims shall rest with the party making the Claim. This Section 15.1.1 does not require the Owner to file a Claim in order to impose liquidated damages in accordance with the Contract Documents.

§ 15.1.2 Time Limits on Claims

The Owner and Contractor shall commence all Claims and causes of action against the other and arising out of or related to the Contract, whether in contract, tort, breach of warranty or otherwise, in accordance with the requirements of the binding dispute resolution method selected in the Agreement and within the period specified by applicable law, but in any case not more than 10 years after the date of Substantial Completion of the Work. The Owner and Contractor waive all Claims and causes of action not commenced in accordance with this Section 15.1.2.

§ 15.1.3 Notice of Claims

§ 15.1.3.1 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered prior to expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party and to the Initial Decision Maker with a copy sent to the Architect, if the Architect is not serving as the Initial Decision Maker. Claims by either party under this Section 15.1.3.1 shall be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.

§ 15.1.3.2 Claims by either the Owner or Contractor, where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2, shall be initiated by notice to the other party. In such event, no decision by the Initial Decision Maker is required.

§ 15.1.4 Continuing Contract Performance

§ 15.1.4.1 Pending final resolution of a Claim, except as otherwise agreed in writing or as provided in Section 9.7 and Article 14, the Contractor shall proceed diligently with performance of the Contract and the Owner shall continue to make payments in accordance with the Contract Documents.

§ 15.1.4.2 The Contract Sum and Contract Time shall be adjusted in accordance with the Initial Decision Maker's decision, subject to the right of either party to proceed in accordance with this Article 15. The Architect will issue Certificates for Payment in accordance with the decision of the Initial Decision Maker.

§ 15.1.5 Claims for Additional Cost

If the Contractor wishes to make a Claim for an increase in the Contract Sum, notice as provided in Section 15.1.3 shall be given before proceeding to execute the portion of the Work that is the subject of the Claim. Prior notice is not required for Claims relating to an emergency endangering life or property arising under Section 10.4.

§ 15.1.6 Claims for Additional Time

§ 15.1.6.1 If the Contractor wishes to make a Claim for an increase in the Contract Time, notice as provided in Section 15.1.3 shall be given. The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay, only one Claim is necessary.

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§ 15.1.6.2 If adverse weather conditions are the basis for a Claim for additional time, such Claim shall be documented by data substantiating that weather conditions were abnormal for the period of time, could not have been reasonably anticipated, and had an adverse effect on the scheduled construction.

§ 15.1.7 Waiver of Claims for Consequential Damages

The Contractor and Owner waive Claims against each other for consequential damages arising out of or relating to this Contract. This mutual waiver includes

- .1 damages incurred by the Owner for rental expenses, for losses of use, income, profit, financing, business and reputation, and for loss of management or employee productivity or of the services of such persons; and
- .2 damages incurred by the Contractor for principal office expenses including the compensation of personnel stationed there, for losses of financing, business and reputation, and for loss of profit, except anticipated profit arising directly from the Work.

This mutual waiver is applicable, without limitation, to all consequential damages due to either party's termination in accordance with Article 14. Nothing contained in this Section 15.1.7 shall be deemed to preclude assessment of liquidated damages, when applicable, in accordance with the requirements of the Contract Documents.

§ 15.2 Initial Decision

§ 15.2.1 Claims, excluding those where the condition giving rise to the Claim is first discovered after expiration of the period for correction of the Work set forth in Section 12.2.2 or arising under Sections 10.3, 10.4, and 11.5, shall be referred to the Initial Decision Maker for initial decision. The Architect will serve as the Initial Decision Maker, unless otherwise indicated in the Agreement. Except for those Claims excluded by this Section 15.2.1, an initial decision shall be required as a condition precedent to mediation of any Claim. If an initial decision has not been rendered within 30 days after the Claim has been referred to the Initial Decision Maker, the party asserting the Claim may demand mediation and binding dispute resolution without a decision having been rendered. Unless the Initial Decision Maker and all affected parties agree, the Initial Decision Maker will not decide disputes between the Contractor and persons or entities other than the Owner.

§ 15.2.2 The Initial Decision Maker will review Claims and within ten days of the receipt of a Claim take one or more of the following actions: (1) request additional supporting data from the claimant or a response with supporting data from the other party, (2) reject the Claim in whole or in part, (3) approve the Claim, (4) suggest a compromise, or (5) advise the parties that the Initial Decision Maker is unable to resolve the Claim if the Initial Decision Maker lacks sufficient information to evaluate the merits of the Claim or if the Initial Decision Maker concludes that, in the Initial Decision Maker's sole discretion, it would be inappropriate for the Initial Decision Maker to resolve the Claim.

§ 15.2.3 In evaluating Claims, the Initial Decision Maker may, but shall not be obligated to, consult with or seek information from either party or from persons with special knowledge or expertise who may assist the Initial Decision Maker in rendering a decision. The Initial Decision Maker may request the Owner to authorize retention of such persons at the Owner's expense.

§ 15.2.4 If the Initial Decision Maker requests a party to provide a response to a Claim or to furnish additional supporting data, such party shall respond, within ten days after receipt of the request, and shall either (1) provide a response on the requested supporting data, (2) advise the Initial Decision Maker when the response or supporting data will be furnished, or (3) advise the Initial Decision Maker that no supporting data will be furnished. Upon receipt of the response or supporting data, if any, the Initial Decision Maker will either reject or approve the Claim in whole or in part.

§ 15.2.5 The Initial Decision Maker will render an initial decision approving or rejecting the Claim, or indicating that the Initial Decision Maker is unable to resolve the Claim. This initial decision shall (1) be in writing; (2) state the reasons therefor; and (3) notify the parties and the Architect, if the Architect is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties but subject to mediation and, if the parties fail to resolve their dispute through mediation, to binding dispute resolution.

§ 15.2.6 Either party may file for mediation of an initial decision at any time, subject to the terms of Section 15.2.6.1.

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§ 15.2.6.1 Either party may, within 30 days from the date of receipt of an initial decision, demand in writing that the other party file for mediation. If such a demand is made and the party receiving the demand fails to file for mediation within 30 days after receipt thereof, then both parties waive their rights to mediate or pursue binding dispute resolution proceedings with respect to the initial decision.

§ 15.2.7 In the event of a Claim against the Contractor, the Owner may, but is not obligated to, notify the surety, if any, of the nature and amount of the Claim. If the Claim relates to a possibility of a Contractor's default, the Owner may, but is not obligated to, notify the surety and request the surety's assistance in resolving the controversy.

§ 15.2.8 If a Claim relates to or is the subject of a mechanic's lien, the party asserting such Claim may proceed in accordance with applicable law to comply with the lien notice or filing deadlines.

§ 15.3 Mediation

§ 15.3.1 Claims, disputes, or other matters in controversy arising out of or related to the Contract, except those waived as provided for in Sections 9.10.4, 9.10.5, and 15.1.7, shall be subject to mediation as a condition precedent to binding dispute resolution.

§ 15.3.2 The parties shall endeavor to resolve their Claims by mediation which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Mediation Procedures in effect on the date of the Agreement. A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order. If an arbitration is stayed pursuant to this Section 15.3.2, the parties may nonetheless proceed to the selection of the arbitrator(s) and agree upon a schedule for later proceedings.

§ 15.3.3 Either party may, within 30 days from the date that mediation has been concluded without resolution of the dispute or 60 days after mediation has been demanded without resolution of the dispute, demand in writing that the other party file for binding dispute resolution. If such a demand is made and the party receiving the demand fails to file for binding dispute resolution within 60 days after receipt thereof, then both parties waive their rights to binding dispute resolution proceedings with respect to the initial decision.

§ 15.3.4 The parties shall share the mediator's fee and any filing fees equally. The mediation shall be held in the place where the Project is located, unless another location is mutually agreed upon. Agreements reached in mediation shall be enforceable as settlement agreements in any court having jurisdiction thereof.

§ 15.4 Arbitration

§ 15.4.1 If the parties have selected arbitration as the method for binding dispute resolution in the Agreement, any Claim subject to, but not resolved by, mediation shall be subject to arbitration which, unless the parties mutually agree otherwise, shall be administered by the American Arbitration Association in accordance with its Construction Industry Arbitration Rules in effect on the date of the Agreement. The Arbitration shall be conducted in the place where the Project is located, unless another location is mutually agreed upon. A demand for arbitration shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the arbitration. The party filing a notice of demand for arbitration must assert in the demand all Claims then known to that party on which arbitration is permitted to be demanded.

§ 15.4.1.1 A demand for arbitration shall be made no earlier than concurrently with the filing of a request for mediation, but in no event shall it be made after the date when the institution of legal or equitable proceedings based on the Claim would be barred by the applicable statute of limitations. For statute of limitations purposes, receipt of a written demand for arbitration by the person or entity administering the arbitration shall constitute the institution of legal or equitable proceedings based on the Claim.

§ 15.4.2 The award rendered by the arbitrator or arbitrators shall be final, and judgment may be entered upon it in accordance with applicable law in any court having jurisdiction thereof.

§ 15.4.3 The foregoing agreement to arbitrate and other agreements to arbitrate with an additional person or entity duly consented to by parties to the Agreement, shall be specifically enforceable under applicable law in any court having jurisdiction thereof.

§ 15.4.4 Consolidation or Joinder

§ 15.4.4.1 Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party may consolidate an arbitration conducted under this Agreement with any other arbitration to which it is a party provided that (1) the arbitration agreement governing the other arbitration permits consolidation, (2) the arbitrations to be consolidated substantially involve common questions of law or fact, and (3) the arbitrations employ materially similar procedural rules and methods for selecting arbitrator(s).

§ 15.4.4.2 Subject to the rules of the American Arbitration Association or other applicable arbitration rules, either party may include by joinder persons or entities substantially involved in a common question of law or fact whose presence is required if complete relief is to be accorded in arbitration, provided that the party sought to be joined consents in writing to such joinder. Consent to arbitration involving an additional person or entity shall not constitute consent to arbitration of any claim, dispute or other matter in question not described in the written consent.

§ 15.4.4.3 The Owner and Contractor grant to any person or entity made a party to an arbitration conducted under this Section 15.4, whether by joinder or consolidation, the same rights of joinder and consolidation as those of the Owner and Contractor under this Agreement.

SECTION 007214
SUPPLEMENTARY CONDITIONS to AIA A201-2017

GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION

The "Standard Form of Agreement between Owner and Contractor", AIA Document A101, and the "General Conditions of the Contract for Construction", AIA Document A201, (the "Agreement"), shall govern the relationship between Owner and Contractor except as A201 is amended and supplemented by these Supplementary Conditions. The Purpose of these Supplementary Conditions is to amend and supplement and, in some cases, void, portions of A201. Accordingly, A201 is hereby amended and supplemented (or voided) as hereinafter set forth and, except as hereby amended and supplemented (or voided), shall remain in full force and effect. The Article and Paragraph numbers set forth in these Supplementary Conditions correspond to the Article and Paragraph numbers set forth in A201. Any term used herein with initial capital letters that is not otherwise defined herein shall have the same meaning ascribed to such term as defined in A201.

Delete all references to Mediation or Arbitration.

ARTICLE 1 GENERAL PROVISIONS

Article 1, Paragraph 1.7: Delete paragraph 1.7 and substitute the following:

"§ 1.7 Transmission of Data in Digital Form

The Architect may, at the Architect's sole discretion, furnish electronic versions of some of the Instruments of Service to the Contractor. The Contractor shall comply with any conditions set by the Architect for the use of these electronic documents, including compensation to the Architect or the Architect's consultants. The Contract Documents shall take precedence over any electronic versions of the Instruments of Service that are furnished to the Contractor. The Contractor shall be responsible for identifying and correlating any discrepancies between the Contract Documents, approved submittals, changes in the work, field conditions and any electronic versions of the Instruments of Service.

§ 1.7.1 The Contractor shall not transfer or reuse electronic versions of the Instruments of Service in electronic or machine readable form without the prior written consent of the Architect."

ARTICLE 2 OWNER

Article 2, Paragraph 2.5: Delete paragraph 2.5 in its entirety and replace with the following:

"§ 2.5 Owners Right to Carry Out the Work

If the Contractor defaults or neglects to carry out the Work in accordance with the Contract Documents (as determined by the Architect and/or Owner) and fails within a seven (7) day period after receipt of written notice from the Owner or Architect to commence and continue correction of such default or neglect with diligence and promptness (to the satisfaction of Architect and/or Owner), the Owner may, after such seven (7) day period, without prejudice to other remedies the Owner may have, immediately correct such deficiencies and continue to carry out any portion or all of the Work. In such case an appropriate Change Order shall be issued deducting from payments then or thereafter due the Contractor the cost of correcting such deficiencies, including compensation for the Architect's additional services and expenses made necessary by such default, neglect or failure, including without limitation, the Owner's reasonable attorneys' fees. Such Change Order shall be deemed to have been executed by the Contractor, whether or not actually signed by the Contractor. If payments then or thereafter due the Contractor are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner. The right of the Owner to stop and carry out the Work (or any portions thereof) pursuant to this paragraph 2.5 shall not give rise to any duty on the part of the Owner to exercise this right for its benefit or the benefit of the Contractor or any other person or entity. Nothing stated or contained herein shall waive or limit any of the Owner's rights and/or remedies against the Contractor, whether at law or in equity."

ARTICLE 3 CONTRACTOR

Article 3.5 Warranty, Paragraph 3.5.3: Add paragraph 3.5.3 as follows:

"§ 3.5.3 Contractor shall submit to the Architect a written warranty as defined in Paragraph 3.5.1. Warranty period shall be for one (1) calendar year and shall commence on the Date of Substantial Completion."

Article 3.6 Taxes, Paragraph 3.6: Delete paragraph 3.6 in its entirety and replace with the following:

"§ 3.6 "The Owner, Nanuet Public Library, is an exempt organization under the New York State Sales Tax Law. A certificate thereof will be provided to the successful bidder. The exemption shall accrue for the benefit of the Owner. The Contractor shall be responsible for claiming and obtaining the exemption. Such exemption covers all tangible personal property sold to the Contractor or sub-contractor for use in erecting or repairing structures."

Article 3.7 Permits, Fees, Notices and Compliance with Laws, Paragraph 3.7.1: Modify paragraph 3.7.1 with new sentence at the end:

"The building permit will be provided by the Owner, as issued by NYSED, at no charge to the Contractor."

Article 3.10 Contractor's Construction and Submittal Schedules, Paragraph 3.10.4: Add paragraph 3.10.4 as follows:

"§ 3.10.4 The Contractor shall be responsible for coordinating and expediting its fabrication and delivery schedules and keeping the Owner's Representative informed in writing as to its progress and its anticipated ability to stay on schedule."

Article 3.12 Use of Site, Paragraph 3.13: Add paragraph 3.13.1 as follows:

"§ 3.13.1 Owner shall be occupying the building during construction. Contractor shall notify the Owner of all anticipated work at least 48 hours prior to start of work so that appropriate removal of patrons from affected areas can occur."

Article 3.12 Use of Site, Paragraph 3.13: Add paragraph 3.13.2 as follows:

"§ 3.13.2 Contractor shall maintain free and unobstructed access to existing main entrance to the building during construction, as well as to any other points of ingress or egress. Contractor shall provide fencing or barricades as necessary to protect building elements from damage, and from patron access to work site."

ARTICLE 7 CHANGES IN THE WORK

Article 7.2 Change Orders, Paragraph 7.2.1: Add new line item 7.2.1.4 as follows:

“.4 When the Architect establishes that the method of valuation for Changes in the Work will be net cost plus a percentage fee in accordance with General Conditions, the percentage fee will be:

A maximum of 10 percent markup for overhead on the net cost of the Prime Contractor's own Work;

A maximum of 5 percent markup for profit on the net cost of the Prime Contractor's own work;

A maximum of 5 percent markup on the cost of work done by any Subcontractor."

ARTICLE 8 TIME

Article 8.1 Definitions, Paragraph 8.1.3: Add the following paragraph 8.1.3:

"§ 8.1.3 Substantial Completion shall be obtained by March 23, 2020. Final Completion shall be achieved within 14 days from Substantial Completion."

Article 8.2 Progress and Completion, Paragraph 8.2.1: At the end of paragraph 8.2.1, add the following:

"§ 8.2.1 Contractor recognizes that the Project Schedule is of critical importance to the Owner. All aspects of construction must reflect a 'time is of the essence' construction strategy. The 'Bid Schedules' serve as a guide of critical milestone dates to the Project. Failure to meet intermediate milestone dates will jeopardize the overall Project Schedule. This failure will mandate Contractor(s) to increase staff, work overtime, or use other means to recover time, at the costs of those Contractor(s) responsible for such delays. In addition, all costs due to delays in completion of the Work shall be borne by the Contractor and any Contractor(s) responsible for delays."

Article 8.3 Delays and Extensions of Time, Paragraph 8.3.3: At the end of paragraph 8.3.3, add the following:

"§ 8.3.3 In no event shall the Contractor be entitled to damages for delay under the Contract."

Article 8.5 Insurance and Bonds, Paragraph 8.5.1: At the end of paragraph 8.5.1, add the following:

"§ 8.5.1 In addition to and not in lieu of any and all other insurance required hereunder, the Contractor shall, for the entire duration of the Project and for an additional period of one (1) year from the date of the Owner's final acceptance of all of the Work at the Project, at its own cost and expense, pay for, provide, and maintain in full force and effect any and all insurances listed on Exhibit "A", which is incorporated herein specifically by reference and made a part hereof. Any and all such insurance to be provided by the Contractor shall name as additional insureds the Nanuet Public Library, the Nanuet Union Free School District, the Architect, the Architect's Consultants, and any construction lender of the Owner as may be named or to be named by the Owner from time to time."

ARTICLE 9 PAYMENTS AND COMPLETION

Article §9.2 Schedule of Values, Paragraph 9.2: At the end of paragraph 9.2, add the following:

"§ 9.2 Contractor shall enumerate the Schedule of Values into both Materials and Labor pricing for each scope of work area."

Article 9.2 Schedule of Values, Paragraph 9.2.1: Add the following paragraph 9.2.1 to paragraph 9.2:

"9.2.1 A retainage of five (5%) percent of each payment amount certified by the Architect shall be withheld and retained by Owner, and shall be released and paid to Contractor pursuant to Section 9.8.5."

Article 9.10 Final Completion and Final Payment, Paragraph 9.10.1.1: Add the following paragraph 9.10.1.1 to paragraph 9.10.1:

"§ 9.10.1.1 Except with the written consent of the Owner, the Architect will perform no more than two (2) inspections to determine whether the Work or a designated portion thereof has attained Final 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."

Article 9.10 Final Completion and Final Payment, Paragraph 9.10.6: Add paragraph 9.10.6, as follows:

"§ 9.10.6 In the event the Contractor fails to achieve Final Completion within fourteen (14) days after the date of Substantial Completion, allowing for any approved extensions of the Contract Time, Contractor shall not be entitled to any further payment from the Owner, and Contractor hereby agrees that such failure to complete the Work within the time set forth above shall constitute a waiver of any and all Claims by the Contractor to any money that may be due. This provision shall not operate as a waiver by the Owner of any Claims or remedies of any nature against the Contractor arising out of the Contract, whether at law or in equity."

ARTICLE 11 INSURANCE AND BONDS

Article 11 Contractor's Insurance and Bonds, Paragraph 11.1.1: Add the following paragraphs:

"§ 11.1.1.1 Sample insurance certificate identified in 11.1.1 follows this page."

§ 11.1.1.2 Workers' Compensation Insurance: A Certificate of Proof of Coverage shall be submitted before the contract is signed.

§ 11.1.1.3 Certificate of Insurance: A Certificate of Insurance is to be issued by the insurance company involved. It must:

- a. Name the Certificate Holder as the Nanuet Public Library
- b. Name the following entities as additional insured:
 1. Nanuet Public Library
 2. Butler Rowland Mays Architects, LLP
 3. Nanuet Union Free School District
 4. Architect's Consultants – M/E Engineering
 5. Any construction lender named or to be identified by the Owner
- c. Specify starting and ending dates of the policy.
- d. Include a thirty (30) days-notice of non-renewal or cancellation."

Article 11 Contractor's Insurance and Bonds, Paragraph 11.1.5: Add paragraph 11.1.5, and subparagraphs, as follows:

"§ 11.1.5 Performance Bond and Labor & Material Payment Bond: A Performance Bond is required in the amount of 100% of the Contract Sum, and a Labor & Material Payment Bond is required in the amount of 100% of the Contract Sum, each of which shall be submitted and executed on AIA Document Form Document A312, there are to be two separate Bonds. All sureties must be licensed to do business in the State of New York.

§ 11.1.5.1 Every bond must display the Surety's Bond Number.

§ 11.1.5.2 A rider including the following provisions shall be attached to each Bond:

.1 Surety hereby agrees that it consents to and waives notice of any addition, alteration, omission, change, or other modification of the Contract Documents. Such addition, alteration, change, extension of time, or other modification of the Contract Documents, or a forbearance on the part of either the Owner or the Contractor to the other, shall not release the Surety of its obligations hereunder and notice to the Surety of such matters is hereby waived.

.2 Surety agrees that it is obligated under the bonds to any successor, grantee or assignee of the Owner.

§ 11.1.5.3 The Contractor shall deliver the required bonds to the Owner prior to beginning construction activity at the site, but no later than seven (7) days after execution of the Contract. Said bonds shall be issued on form AIA Document A312.

§ 11.1.5.4 The Owner may, in the Owner's sole discretion and without prior notice to the Contractor, inform surety of the progress of the Contractor's Work and obtain consents as necessary to protect the Owner's rights, interest, privileges and benefits under and pursuant to any bond issued in connection with the Contractor's Work.

§ 11.1.5.5 If the surety on any Bond furnished by the Contractor is declared a bankrupt or becomes insolvent or its right to do business is terminated in any state where any part of the Project is located or it ceases to meet the requirements of this Article, the Contractor shall within ten (10) days thereafter substitute another Performance and Payment Bond and surety, both of which must be acceptable to the Owner.”

Add the following new Article:

ARTICLE 16 WAGES AND BENEFITS

§ 16.1 Prevailing Wages and Prevailing Supplemental Benefits

§ 16.1.1 The labor on this contract shall be performed in all respects in full accordance with the Labor Law of the State of New York. In accordance with Section 220, Subdivision 3, and Section 220-D, of the Labor Law, as amended, the Industrial Commissioner has designated as the minimum hourly rates for prevailing wages and prevailing supplemental benefits to be paid to employees, workers, laborers, and mechanics on the Work the rates shown on the attached schedules which shall be posted in a prominent and convenient place for the inspection of the Contractor's employees. Such schedules shall change from time to time, and the amounts to be paid in connection therewith shall change accordingly. Article 8, Section 220 of the Labor Law, as amended by Chapter 750 of the Laws of 1956, provides, among other things, that it shall be the duty of the fiscal officer to make a determination of the schedule of prevailing wages and prevailing supplemental benefits to be paid to all laborers, workers and mechanics employed on public works projects. The amount of prevailing supplemental benefits listed on the attached schedule does not necessarily include all types of prevailing supplements.

§ 16.1.2 The prevailing wage rate and prevailing supplemental benefit rate, as determined by the New York State Department of Labor, Bureau of Public Work, under Article 8 (Sections 220-223, *et seq.*) of the Labor Law of the State of New York, as amended, are hereby incorporated herein specifically by reference thereto, and are made a part of this Agreement, as if they were included fully at length herein. At all times, Contractor shall comply with the then most current prevailing wage and prevailing supplemental benefit rates to be paid for or in connection with the Work on the Project. Penalties, as determined by the Commissioner of Labor of the State of New York, shall be assessed against the Contractor if the Contractor fails to comply with all or any part of the Labor Law of the State of New York.

§ 16.1.3 All employees, workers, laborers and mechanics performing Work on or at the subject Project shall be paid at the applicable prevailing wage rates and supplemental benefit rates then in effect at the time the Work is performed, as such rates have been determined by the New York State Department of Labor, Bureau of Public Work. The Contractor is responsible for obtaining directly from the New York State Department of Labor, Bureau of Public Work, all updated and then current copies of the prevailing wage and prevailing supplemental benefits schedule, as well as the list of employers ineligible to bid on or be awarded public work contracts.

The current Prevailing Wage and Benefit Schedule is included in Specification Section 007343.

(Sample Certificate of Insurance Follows this Page)

END OF SECTION



CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER	CONTACT NAME:		FAX (A/C, No):	
INSURANCE AGENT	PHONE (A/C, No, Ext):		E-MAIL ADDRESS:	
	INSURER(S) AFFORDING COVERAGE		NAIC #	
	INSURER A : GENERAL LIABILITY INSURANCE COMPANY			
INSURED	INSURER B : AUTOMOBILE INSURANCE COMPANY			
CONTRACTOR	INSURER C : UMBRELLA INSURANCE COMPANY			
	INSURER D : WORKERS' COMP. INSURANCE COMPANY			
	INSURER E :			
	INSURER F :			

COVERAGES

CERTIFICATE NUMBER:

REVISION NUMBER:

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSR	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS
A	GENERAL LIABILITY						EACH OCCURRENCE \$2,000,000
	<input checked="" type="checkbox"/> COMMERCIAL GENERAL LIABILITY	<input type="checkbox"/>	<input type="checkbox"/>				DAMAGE TO RENTED PREMISES (Ea occurrence) \$ 300,000
	<input type="checkbox"/> CLAIMS-MADE <input checked="" type="checkbox"/> OCCUR	<input type="checkbox"/>	<input type="checkbox"/>				MED EXP (Any one person) \$ 5,000
	<input checked="" type="checkbox"/> CONTRACTUAL						PERSONAL & ADV INJURY \$2,000,000
	GEN'L AGGREGATE LIMIT APPLIES PER:						GENERAL AGGREGATE \$4,000,000
	<input type="checkbox"/> POLICY <input checked="" type="checkbox"/> PRO-JECT <input type="checkbox"/> LOC						PRODUCTS - COMP/OP AGG \$4,000,000
							\$
B	AUTOMOBILE LIABILITY	<input type="checkbox"/>	<input type="checkbox"/>				COMBINED SINGLE LIMIT (Ea accident) \$1,000,000
	<input type="checkbox"/> ANY AUTO						BODILY INJURY (Per person) \$
	<input type="checkbox"/> ALL OWNED AUTOS	<input type="checkbox"/>	<input type="checkbox"/>				BODILY INJURY (Per accident) \$
	<input checked="" type="checkbox"/> HIRED AUTOS	<input checked="" type="checkbox"/>	<input checked="" type="checkbox"/>				PROPERTY DAMAGE (Per accident) \$
	SCHEDULED AUTOS NON-OWNED AUTOS						\$
C	<input checked="" type="checkbox"/> UMBRELLA LIAB	<input checked="" type="checkbox"/>	<input type="checkbox"/>				EACH OCCURRENCE \$5,000,000
	<input type="checkbox"/> EXCESS LIAB	<input type="checkbox"/>	<input type="checkbox"/>				AGGREGATE \$
	<input type="checkbox"/> DED <input type="checkbox"/> RETENTION \$						\$
D	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY						<input checked="" type="checkbox"/> WC STATUTORY LIMITS <input type="checkbox"/> OTHER
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICE/MEMBER EXCLUDED? (Mandatory in NH)	<input type="checkbox"/>	<input type="checkbox"/>				E.L. EACH ACCIDENT \$1,000,000
	If yes, describe under DESCRIPTION OF OPERATIONS below	<input type="checkbox"/>	<input type="checkbox"/>				E.L. DISEASE - EA EMPLOYEE \$1,000,000
							E.L. DISEASE - POLICY LIMIT \$1,000,000

INFORMATION ONLY

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (Attach ACORD 101, Additional Remarks Schedule, if more space is required)

RE: (JOB) THE PROJECT OWNER(S), AND ANY OTHER ENTITIES REQUIRED BY CONTRACT ARE INCLUDED AS ADDITIONAL INSURED ON A PRIMARY AND NON-CONTRIBUTORY BASIS WITH REGARDS TO THE ABOVE CAPTIONED LIABILITY POLICIES. **COPIES OF ADDITIONAL INSURED ENDORSEMENTS ARE ATTACHED**. WAIVER OF SUBROGATION APPLIES.

****A SECOND CERTIFICATE WILL BE NECESSARY FOR EACH SPECIFIC JOB****

CERTIFICATE HOLDER**CANCELLATION**

	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.
	AUTHORIZED REPRESENTATIVE

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DOCUMENT 007343
NEW YORK STATE DEPARTMENT OF LABOR
SCHEDULE OF PREVAILING WAGE RATES

1.1 SCHEDULE OF PREVAILING WAGE RATES

The New York State Department of Labor PRC number assigned to this project is:

PRC# 2023007126

To obtain the Department of Labor Prevailing Wage schedule for this job please go to the following website and enter the PRC number above.

<https://apps.labor.ny.gov/wpp/publicViewProject.do?method=showIt&id=1551637>

If requested, a paper copy of the current project specific rates will be supplied to the successful bidder upon award of the contract.

SECTION 011000
SUMMARY

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Contract Description
- B. Contract Time
- C. Intent of Documents
- D. Work by Owner
- E. Contractor's use of site and premises

1.2 **CONTRACT DESCRIPTION**

- A. The Project consists of all the work as described in the related documents necessary for installation of a stand-by generator for the Nanuet Public Library.
- B. Perform Work of the Contract under a stipulated sum contract with the Owner in accordance with the Conditions of Contract.
- C. Work of contractor is identified in the following articles and in the Construction Documents.

1. GENERAL SCOPE REQUIREMENTS

- a. NOTE: FOR THE PURPOSES OF WORK REQUIREMENTS FOR THIS PROJECT, THE TERMS PRIME CONTRACTOR, TRADE CONTRACTOR, AND CONTRACTOR SHALL HAVE THE SAME MEANING & MAY BE USED INTERCHANGABLY.
- b. The General Scope of Work Items listed below shall apply to Prime Contractors. All Contractors shall provide the work items as described UNLESS specifically noted otherwise. Specific scopes of work for each individual Contractor are described in the sections that follow the general items.
- c. Provide a description of the proposed field organization and resumes of proposed supervisory personnel.
- d. Provide project management, supervision, tools, and labor required to meet the project schedule. Contractor's representative will have email, cell phone and ability to effectively communicate, work well in a team environment, multitask and be easily accessible.
- e. Contractor is responsible for visiting the site to become familiar with and understand the entire Scope of Work. Any additional costs resulting from this Trade Contractor's lack of understanding of the "as-built condition" shall be borne by this Trade Contractor.
- f. Contractor is responsible for all core-drilling operations, water containment from core-drilling operations and all clean up associated with the core drilling operations for their work.

- g. Contractor will perform all cutting and patching necessary to accomplish his work and will suitably support, anchor, match and trim his materials to the work of others. Contractor will assist in coordinating his work with the work of other Contractors to minimize conflicts.
- h. Contractor shall coordinate all deliveries and material storage with the Owner. On-site lay down and storage are limited. Contractor's storage and lay down at the site is to be approved by the Owner. Contractor shall arrange to store materials offsite and shall bring the materials to the site as needed to support the installation schedule. Materials, equipment, tools, and supplies are to be moved at no charge if their location obstructs or impedes the work of others. Assume limited staging will be allowed at the project site.
- i. Contractor shall perform all expediting required to ensure that all materials are available for timely installation. The Owner reserves the right, and the Contractor shall assist the Owner, to contact any material or unit manufacturer to confirm the status of production, fabrication, shipping and delivery.
- j. Contractor will be responsible for all sweeping, pickup and removal of all dirt and debris resulting from the performance of his operations and suitable disposal of debris. Clean-up work areas on a minimum of a daily basis. Failure to maintain a clean work area will result in the cleanup being done by another Contractor and the costs of such cleanup shall be back-charged to this Contractor. Contractor shall wash down all vehicles and clean up all road surfaces as necessary to maintain cleanliness of the site and offsite roads due to their work.
- k. Contractor shall obtain all permits and inspections required for the performance of this work and shall include all costs for permits, fees, bonds, assessments and municipal inspections (exclusive of Building Permits) applicable to the work as levied or required by all public Authorities Having Jurisdiction.
- l. Contractor is not to take direction from a testing agency, government agency, design firm, environmental agency that changes his scope of work; such direction can only come from the Owner. If Contractor proceeds with a change in scope solely on the direction of an aforementioned party without authorization from the Owner, the Contractor will not be compensated for the work performed.
- m. Perimeter and floor opening protection within the building structure and at building perimeter will be supplied by Contractor. Contractor will be responsible for removal and expeditious replacement of any protection as required for the execution of its work. Temporary "make safe" accommodations shall be put in place while work is ongoing and/or at the conclusion of each work shift.
- n. Contractor shall provide all supports required for the work of this Contract, whether specifically shown in the Contract Documents or not. Include prefabricated and custom equipment supports required to support the work of this contract, per the Contract Documents. Contractor shall be responsible for field touch up of primed miscellaneous steel/welds. Plumbing piping and equipment shall not be

supported from the roof deck. Additional support steel shall span between building frame steel and be prime painted.

- o. Contractor shall provide all sealants and backer rod assemblies both integral to the work of this Contract and where the work of this Contract abuts the work of others. This includes all acoustic sealant/insulation associated with non-fire rated partitions.
- p. Contractor shall furnish and install sleeves for all work required under this Contract. Provide escutcheons as required and insulation must extend full length through all sleeves and/or penetrations.
- q. All Contractor personnel are required to conduct themselves in a professional manner and act in harmony with each other. Unprofessional behavior on the project site will not be tolerated. Failure to comply may result in removal from the project site.
- r. The Contractor shall coordinate the requirements of their systems, as required, with all other Contractors for construction of their adjacent or included trade work.
- s. The Contractor is responsible for its own layout and field engineering. A control line and benchmark elevation shall be provided by the Owner. The Contractor must verify all existing field conditions and dimensions as they relate to the new construction. The Owner must be notified in writing of any discrepancies prior to commencing work.
- t. The Contractor shall include all costs for testing and mock-ups as required by the Contract Documents.

2. SPECIFIC SCOPE REQUIREMENTS

- a. Contractor shall provide all temporary enclosures as clarified below. Provide, maintain, reconfigure and remove the project's temporary construction fencing as necessary.
- b. In addition to the final cleaning requirements, include the removal of dirt and dust from all building surfaces, and polish or wax building surfaces using appropriate cleaning solutions and procedures recommended by the material manufacturer. Final cleaning shall include but is not limited to:
 - 1. Removal of spots, soils and paint from finished materials and wash and wipe clean.
 - 2. Clean fixtures, fittings, equipment, and removal of stains, paint, dirt and dust, leaving all in an undamaged, new condition.
 - 3. Cleaning of aluminum, steel and all other metals, in accordance with manufacturer's recommendations.
 - 4. Cleaning, removal of stains, dirt and dust of all surfaces, leaving same in an undamaged, new condition.
 - 5. Cleaning of all exterior window glass and frames adjacent to project area.
- c. Specific scopes of work for Contractor are described in the sections below. Contractor shall take note that work in the Specific Scope of Work Sections below includes, but is not limited to, the work of the following systems, specification sections and drawings:

Contract for Generator Installation

The General Construction Trade Contractor is responsible for all Specification Sections in accordance with the following list:

DIVISION 0 – BIDDING REQUIREMENTS

- A. All Division 0 Sections

DIVISION 1 – CONTRACT REQUIREMENTS

- A. All Division 1 Sections

DIVISION 2 – SITEWORK

- A. As detailed or noted on drawings.

DIVISION 3 – CONCRETE

- A. As detailed or noted on drawings.

DIVISION 26 – ELECTRICAL

- A. All Division 26 Sections

1.3 CONTRACT TIME

- A. Time is of the essence. The Contractor shall provide the necessary manpower and work any and all necessary hours (supervision & manpower), equipment and material both on and off site as required to meet the milestone dates stipulated in this Specification Section. Such work will be fully coordinated with those activities of other trades to assure timely completion. The project site will be open as necessary to support the work according to the Project work restrictions as detailed in this and other sections of Divisions 0 and 1. Contractor shall coordinate all premium time work with the Owner. There will be no separate compensation for such hours. All costs with any/all premium time required to meet the milestone dates stipulated herein shall be included in the base bid. The Contractor shall stipulate this requirement on any of its Subcontractor's contracts.
- B. All equipment / material that are critical for the Project Schedule must be purchased within the timeframe required to support the Project Construction Schedule and Milestone Dates as required by this section. Contractor shall provide the Owner with copies of purchase orders for equipment / material including vendor/ manufacturing contracts for expediting purposes. The Owner reserves the right to verify the status of all equipment / material from the issuance of purchase orders by Contractor (or their Subcontractors) through delivery and, in conjunction with the Contractor, to expedite the equipment / material if the projected delivery is later than required by the requirements of the project schedule. Costs to expedite equipment / material shall be borne by the Contractor.
- C. Contractor shall be responsible to base his bid on specified manufacturer's material and equipment. This Contractor shall maintain and issue a current submittal, purchase order, and delivery log (Material & Equipment Status Report – MESR) that will be a submission requirement, to be transmitted with your Pencil Copy Application for Payment. Contractors shall coordinate their letting of sub-contracts, material purchase, shop drawing submissions, delivery of materials, sequence of operations, etc., to conform to the Project Schedule.

- D. The project milestones below are required to meet the overall success of the completion of the Goshen Public Library's Generator Installation project. Contractor is responsible for meeting their respective milestones as indicated:

PROJECT SCHEDULE

Contract Award – On or about the week of October 2, 2023.

Submittals Received – No later than November 6, 2023.

Sitework mobilization – On or about the week of March 11, 2024

Substantial Completion – On or about the week of June 24, 2024.

Final Completion – On or about July 8, 2024.

1.4 INTENT OF DOCUMENTS

- A. Plans and Specifications supplement each other and require the CONTRACTOR to provide in their bid:
1. All labor, tools equipment, appurtenances, transportation, related items, etc., for the completion of the Work.
 2. All systems complete and left in excellent and/or specified operating condition.
 3. Any apparatus, appliance, material or Work not shown on Drawings but mentioned in Specifications, or vice versa.
 4. Any accessories, reasonably inferable from Drawings and Specifications and as may be required by the manufacturer of such materials or equipment, necessary to make the work complete and of the best quality.
 5. Coordination with work of the Owner and by other trades.
- B. All sections of these Specifications shall apply in full to the CONTRACTOR and their respective subcontractors.
- C. Notes or instructions shown on any one Drawing, apply where applicable, to all other Drawings.
- D. Install all Work in compliance with Plans and Specifications in excess of requirements of codes and regulations and not contrary to same. Provide work in compliance with the following:
1. Building Code of New York State
 2. New York State Department of Labor Rules and Regulations
 3. Occupational Safety and Health Administration (OSHA)
 4. National Electrical Code, NFPA 70
 5. New York State Energy Conservation Construction Code
 6. Local Codes and Ordinances
 7. Life Safety Code, NFPA 101
 8. New York Board of Fire Underwriters
 9. Local power company and telephone company standards
 10. Plans and Specifications in excess of code/regulations requirements and not contrary to same.
- E. The CONTRACTOR acknowledges that the Contract consideration includes sufficient money allowance to make its Work complete, operational, and in compliance with good practice. It agrees that inadvertent minor discrepancies or omissions, or the failure to show details or to repeat on any part of the Contract Documents the figures or notes given on another document shall not be the cause for additional charges or claims. In

the case of conflict between any part or parts thereof, as contrasted to an omission or failure to show details or to repeat on any part of the Contract Documents the figures or notes given on another part thereof, the following shall be given preference, in the order herein set forth, to determine what Work the CONTRACTOR is required to perform:

1. Addenda (later date to take preference over earlier date)
2. Amendments to Agreement
3. Agreement,
4. Specifications,
5. Schedules,
6. Large scale detail Drawings (detail drawings having a scale of 3/4" and over),
7. Large plan and section Drawing's (plan and section drawings having a scale equal to or larger than that used for the basic floor or site plan as the case may be),
8. Small scale detail Drawings (detail drawing having a scale less than 3/4"),
9. Small scale plan and section Drawings (plan and section drawings having a scale less than that used for the basic floor or site plan as the case may be).
- 10.

In the event of such conflict between and among the parts of the Contract Documents that are entitled to equal preference, the more expensive way of doing the Work, the better the quality or the greater the quantity of material shall govern unless the OWNER or OWNER's AGENT otherwise directs.

- F. Licensing: If required by local laws or ordinances, the Contractor shall hold a license to perform the Work as issued by the local jurisdiction.

1.5 WORK BY OWNER

- A. The Owner will hold additional separate contracts to perform work on the project. Contractors shall coordinate with the following:
1. Special Inspections: The Owner will engage the services of a qualified Special Inspector for this project. The Special Inspector will coordinate inspection and testing requirements as necessary in accordance with the provisions of Chapter 17 of the Building Code of New York State, Specification Section 014100, and the Statement of Inspections.

1.6 CONTRACTOR'S USE OF SITE AND PREMISES

- A. Limit use of site and premises to allow:
1. Work by Contractors and Work by Owner and Owner's forces.
- B. Access to Site: Maintain clear and unobstructed access to site throughout the course of the work.
- C. Construction Operations: Limited specifically to areas noted on site Drawings.
- D. Project Working Hours. The normal project work hours will be Monday –Friday 7:00 am to 4:00pm . Special requests to have the site open additional hours shall only be allowed upon approval by the Owner.
- E. Time Restrictions for Performing Exterior Work: The Village of Goshen has a local noise ordinance specifying acceptable work hours. All work under this contract must adhere to the local work hours as identified below:
1. Monday-Friday – 7:00 a.m. to 9:00 p.m
 2. Saturday-Sunday – 8:00 a.m. to 10:00 p.m
- F. Utility outages and shutdown: Notify and coordinate with Owner. Provide written notice minimum 48 hours prior to any scheduled outages or shutdown.

G. Work Sequence: Coordinate construction schedule and operations with Owner and Architect.

PART 2 PRODUCTS - Not Used

PART 3 EXECUTION - Not Used

END OF SECTION

SECTION 011450
PROJECT RECORD DOCUMENTS

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Related Requirements Specified Elsewhere
 - 1. Shop Drawings, Product Data and Samples: Section 006211

1.2 MAINTENANCE OF DOCUMENTS

- A. Maintain, at job site, one copy of:
 - 1. Contract Drawings
 - 2. Specifications
 - 3. Addenda
 - 4. Approved Shop Drawings
 - 5. Supplemental Instructions
 - 6. Change Orders
 - 7. Other Modifications to Contract
 - 8. Field Test Records
 - 9. Correspondence File
 - 10. Material Safety Data Sheets
 - 11. All documentation required by OSHA, state, federal and local authorities.
- B. Store documents in approved locations, apart from documents used for construction.
- C. Provide files and racks for storage of documents.
- D. Maintain documents in clean, dry, legible condition.
- E. Do not use record documents for construction purposes.
- F. Make documents available at all times for inspection by Construction Manager, Architect/Engineer and Owner.
- G. File documents in accordance with Project Filing Format of Uniform Construction Index.

1.3 MARKING DEVICES

- A. Provide felt marking pen for marking, conforming to following color code:
 - 1. Red for general construction work.
 - 2. Green for heating, ventilating work.
 - 3. Brown for electrical work.
 - 4. Black for other written notations.

1.4 RECORDING

- A. Label each document "PROJECT RECORD" in two inch high printed letters.
- B. Keep record documents current.
- C. Do not permanently conceal any work until required information has been recorded.

- D. Contract Drawings
 - 1. Legibly Mark to Record Actual Construction:
 - a. Depths of various elements of foundation in relation to the finish floor.
 - b. Horizontal and vertical location of underground utilities and appurtenances referenced to permanent surface improvements.
 - c. Location of internal utilities and appurtenances concealed in construction referenced to visible and accessible features of structure.
 - d. Field changes of dimension and detail.
 - e. Changes made by Supplemental Instructions of Change Order.
 - f. Details not on original Contract Drawings.
- E. Specifications and Addenda
 - 1. Legibly Mark-Up Each Section to Record:
 - a. Manufacturer, trade name, catalog number and supplier of each product and item of equipment actually installed.
 - b. Changes made by Supplemental Instructions of Change Order.
 - c. Other matters not originally specified.
- F. Shop Drawings: Maintain as record documents. Legibly mark-up approved shop drawings to show changes made after review.
- G. Upon completion of the project, the contractor shall transfer all "As Built" information to reproducible drawings and produce three sets of "As Built" CD's with files saved as pdf's. These accurate "As Built" must be submitted and reviewed by Construction Manager prior to the release of retainage. "As Built documents shall not bear the seal or signature of the Architect/Engineer".

1.5 CONTRACTOR'S DAILY REPORT

- A. Form: as approved by Owner and Architect.
- B. Information Required:
 - 1. Day, Date
 - 2. Name of Contractor/Subcontractors
 - 3. Manpower breakdown by Contractor/Subcontractor with hours worked.
 - 4. Description of where working and operations.
 - 5. General description of material delivered.
 - 6. List of visitors.
 - 7. Remarks on accidents, progress of work, etc.

1.6 SUBMITTALS

- A. Deliver Contractor's Daily Report to the Owner at the end of each day.
- B. At completion of project, deliver record documents to Construction Manager.
- C. Accompany submittal with transmittal letter, in duplicate containing:
 - 1. Date
 - 2. Project title and number
 - 3. Contractor's name and address
 - 4. Title and number of each record document
 - 5. Certification that each document as submitted is complete and accurate.
 - 6. Signature of Contractor, or their authorized representative.

END OF SECTION

SECTION 012000
PRICE AND PAYMENT PROCEDURES

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Schedule of values
- B. Applications for payment
- C. Change procedures
- D. Defect assessment

1.2 SCHEDULE OF VALUES

- A. Submit a printed schedule on AIA Form G703 - Application and Certificate for Payment Continuation Sheet for approval no more than ten business days after contract award, and prior to first application for payment submission.
- B. Format: Utilize the Table of Contents of this Project Manual. Identify each line item with number and title of the major specification Section. Identify site mobilization, bonds and insurance, shop drawings/submittals, and other overhead items as appropriate.
- C. Categorize each major specification section into separate labor and material line items.
- D. Include within each line item, a direct proportional amount of Contractor's overhead and profit.
- E. Revise schedule to list approved Change Orders, with each Application for Payment.

1.3 APPLICATIONS FOR PAYMENT

- A. Submit to the Architect one draft pencil copy of each payment application on AIA Form G702 – Application and Certificate for Payment and AIA G703 – Continuation Sheet, 10 days prior to the end of the payment period as established in the Agreement.
- B. At the conclusion of the payment period established in the Agreement, submit three copies of each application on AIA Form G702 - Application and Certificate for Payment and AIA G703 - Continuation Sheet.
 - 1. Submit one copy of Certified Payroll with each Application for Payment. Payment Applications will not be processed without Certified Payroll.
- C. Content and Format: Utilize Schedule of Values for listing items in Application for Payment.
- D. Payment Period: Submit at intervals stipulated in the Agreement, including pencil copies.

1.4 CHANGE PROCEDURES

- A. The Architect will advise of minor changes in the Work not involving an adjustment to Contract Sum/Price or Contract Time by issuing supplemental instructions on AIA Form G710 or similar format.
- B. The Architect may issue a Proposal Request which includes a detailed description of a proposed change with supplementary or revised Drawings and specifications, and a change in Contract Time for executing the change. Contractor will prepare and submit an estimate within five days.

- C. Stipulated Sum Change Order: Based on Proposal Request and Contractor's fixed price quotation.
- D. Construction Change Directive: Architect may issue a directive, on AIA Form G713 Construction Change Directive signed by the Owner, instructing the Contractor to proceed with a change in the Work, for subsequent inclusion in a Change Order. Document will describe changes in the Work, and designate method of determining any change in Contract Sum or Contract Time. Promptly execute the change.
- E. Time and Material Change Order: Submit itemized account and supporting data after completion of change, within time limits indicated in the Conditions of the Contract, to the Architect. Architect will determine the change allowable in Contract Sum and Contract Time as provided in the Contract Documents.
- F. Maintain detailed records of work done on Time and Material basis. Provide to the Construction Manager full information required for evaluation of proposed changes, and to substantiate costs for changes in the Work.
- G. Document each quotation for a change in cost or time with sufficient data to allow evaluation of the quotation by the Architect.
- H. Change Order Forms: AIA G701 Change Order.
- I. Execution of Change Orders: Architect will issue Change Orders for signatures of parties as provided in the Conditions of the Contract.
- J. Correlation of Contractor Submittals:
 - 1. 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.
 - 2. Promptly revise progress schedules to reflect any change in Contract Time, revise sub-schedules to adjust times for other items of work affected by the change, and resubmit.

1.5 DEFECT ASSESSMENT

- A. Replace the Work, or portions of the Work, not conforming to specified requirements.
- B. If, in the opinion of the Architect, it is not practical to remove and replace the Work, the Architect will direct an appropriate remedy or adjust payment.
- C. The authority of the Architect to assess the defect and identify payment adjustment is final.
- D. Non-Payment For Rejected Products: Payment will not be made for rejected products for any of the following:
 - 1. Products wasted or disposed of in a manner that is not acceptable.
 - 2. Products determined as unacceptable before or after placement.
 - 3. Products not completely unloaded from the transporting vehicle.
 - 4. Products placed beyond the lines and levels of the required Work.
 - 5. Products remaining on hand after completion of the Work.
 - 6. Loading, hauling, and disposing of rejected products.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION - NOT USED

END OF SECTION

SECTION 013000
ADMINISTRATIVE REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Coordination and project conditions
- B. Preconstruction Meeting
- C. Progress meetings
- D. Cutting and patching
- E. Special procedures

1.2 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. Coordinate completion and clean-up of Work in preparation for Substantial Completion.
- C. Coordinate access to site for correction of defective Work and Work not in accordance with Contract Documents.

1.3 PRECONSTRUCTION MEETING

- A. The Architect will schedule a meeting after Notice of Award.
- B. Attendance Required: Owner, Architect, Owner's Agent and Contractor.
- C. Agenda:
 - 1. Designation of personnel representing the parties in Contract, and the Architect
 - 2. Submission of executed bonds and insurance certificates
 - 3. Execution of Owner-Contractor Agreement
 - 4. Submission of list of Subcontractors, list of products, schedule of values, and progress schedule
 - 5. Procedures and processing of field decisions, submittals, substitutions, Applications for Payments, Architect's Supplemental Instructions, Proposal Requests, Change Orders, and Contract closeout procedures.
 - 6. Scheduling
 - 7. Use of premises by Owner and Contractor
 - 8. Owner's requirements
 - 9. Construction facilities, temporary utilities and controls
 - 10. Security and housekeeping procedures
 - 11. Procedures for maintaining record documents
- D. The Architect will record minutes and distribute copies after meeting to participants, Owner, and those affected by decisions made

1.4 PROGRESS MEETINGS

- A. The Architect will schedule and administer meetings throughout progress of the Work as necessitated by Progress of the Work.
- B. Attendance Required:
 - 1. Suggested attendance:
 - a) Owner
 - b) Architect
 - c) Contractor (and appropriate sub-contractors as required)
- C. Agenda:
 - 1. Review minutes of previous meetings
 - 2. Review of Work progress
 - 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. Planned progress during succeeding work period
 - 8. Maintenance of quality and work standard
 - 9. Effect of proposed changes on progress schedule and coordination
 - 10. Other business relating to Work
- D. The Architect will record minutes and distribute copies after meeting to participants, with Owner and Architect, and those affected by decisions made.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION

3.1 CUTTING AND PATCHING

- A. Employ skilled and experienced installer to perform cutting and patching.
- B. Submit written request in advance of cutting or altering elements which affect:
 - 1. Structural integrity of element
 - 2. Integrity of weather-exposed or moisture-resistant elements
 - 3. Efficiency, maintenance, or safety of element
 - 4. Visual qualities of sight exposed elements.
 - 5. Work of Owner or separate contractor.
- C. Execute cutting, fitting, and patching to complete Work, and to:
 - 1. Fit the several parts together, to integrate with other Work.
 - 2. Uncover Work to install or correct ill-timed Work.
 - 3. Remove and replace defective and non-conforming Work.
 - 4. Remove samples of installed Work for testing.
 - 5. Provide openings in elements of Work for penetrations of mechanical and electrical Work.
- D. Execute work by methods to avoid damage to other Work, and which will provide proper surfaces to receive patching and finishing.
- E. Restore Work with new products in accordance with requirements of Contract Documents.
- F. Fit Work tight to pipes, sleeves, ducts, conduit, and other penetrations through surfaces.
- G. Maintain integrity of wall, ceiling, or floor construction; completely seal voids.

- H. Refinish surfaces to match adjacent finishes. For continuous surfaces, refinish to nearest intersection; for an assembly, refinish entire unit.

3.2 SPECIAL PROCEDURES

- A. Materials: As specified in product sections; match existing with new products and salvaged products for patching and extending work.
- B. Employ skilled and experienced installer to perform alteration work.
- C. Cut, move, or remove items as necessary for access to alterations and renovation Work. Replace and restore at completion.
- D. Remove unsuitable material not marked for salvage, such as rotted wood. Replace materials as specified for finished Work.
- E. Remove debris and abandoned items from area and from concealed spaces.
- F. Prepare surface and remove surface finishes to provide for proper installation of new work and finishes.
- G. Remove, cut, and patch Work in a manner to minimize damage and to provide means of restoring products and finishes to specified condition.
- H. Refinish existing visible surfaces to remain in rooms or spaces, to specified condition for each material, with a neat transition to adjacent finishes.
- I. 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.
- J. When finished surfaces are cut so that a smooth transition with new Work is not possible, terminate existing surface along a straight line at a natural line of division and submit recommendation to Architect for review.
- K. Where a change of plane of 1/4 inch or more occurs, submit recommendation for providing a smooth transition to Architect for review.
- L. Patch or replace portions of existing surfaces which are damaged, lifted, discolored, or showing other imperfections.
- M. Finish surfaces as specified in individual product sections and per 011000 Summary.

END OF SECTION

SECTION 014000
QUALITY REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Coordination, quality control and control of installation
- B. Tolerances
- C. References
- D. Examination
- E. Preparation

1.2 COORDINATION, QUALITY CONTROL AND CONTROL OF INSTALLATION

- A. Monitor quality control over suppliers, manufacturers, products, services, site conditions, and workmanship, to produce Work of specified quality.
- B. Comply with manufacturers' instructions, including each step, in sequence.
- C. Should manufacturers' instructions conflict with Contract Documents, request clarification from Architect before proceeding.
- D. Comply with specified standards as minimum quality for the Work except where more stringent tolerances, codes, or specified requirements indicate higher standards or more precise workmanship.
- E. Perform Work by persons qualified to produce required and specified quality.
- F. Verify that field measurements are as indicated on Shop Drawings or as instructed by the manufacturer. Promptly and specifically notify Architect of any discrepancies between field conditions and drawings.
- G. Secure products in place with positive anchorage devices designed and sized to withstand stresses, vibration, physical distortion, or disfigurement.
- H. Interference
 - 1. Install work so that items both existing and new are operable and serviceable.

1.3 TOLERANCES

- A. Monitor fabrication and installation tolerance control of products to produce acceptable Work. Do not permit tolerances to accumulate.
- B. Comply with manufacturers' tolerances. Should manufacturers' tolerances conflict with Contract Documents, request clarification from Architect before proceeding.
- C. Adjust products to appropriate dimensions; position before securing products in place.

1.4 REFERENCES

- A. For products or workmanship specified by association, trade, or other consensus standards, comply with requirements of the standard, except when more rigid requirements are specified or are required by applicable codes.
- B. Conform to reference standard by date of issue current on date of Contract Documents, except where a specific date is established by code.
- C. Should specified reference standards conflict with Contract Documents, request clarification from the Architect before proceeding.
- D. Neither the contractual relationships, duties, nor responsibilities of the parties in Contract nor those of the Architect shall be altered from the Contract Documents by mention or inference otherwise in any reference document.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION

3.1 EXAMINATION

- A. Verify that existing conditions and substrate surfaces are acceptable for subsequent Work. Beginning new Work means acceptance of existing conditions.
- B. Verify that existing substrate is capable of structural support or attachment of new Work being applied or attached.
- C. Examine and verify specific conditions described in individual specification sections.
- D. Verify that utility services are available, of the correct characteristics, and in the correct locations.

3.2 PREPARATION

- A. Clean substrate surfaces prior to applying next material or substance.
- B. Seal cracks or openings of substrate prior to applying next material or substance.
- C. Apply manufacturer required or recommended substrate primer, sealer, or conditioner prior to applying any new material or substance in contact or bond.

END OF SECTION

SECTION 015000
TEMPORARY FACILITIES AND CONTROLS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Temporary Utilities:
 - 1. Temporary electricity
 - 2. Telephone service
 - 3. Water service
 - 4. Temporary Sanitary facilities
- B. Construction Facilities:
 - 1. Vehicular access / Parking
 - 2. Progress cleaning and waste removal
 - 3. Identification
- C. Temporary Controls:
 - 1. Barriers
 - 2. Security
 - 3. Dust control
 - 4. Pollution control
- D. Security and Protection Facilities Installation

1.2 TEMPORARY ELECTRICITY

- A. The Owner shall provide access to electricity as necessary to complete the work of this contract. Owner shall pay cost of energy used. Exercise measures to conserve energy.
- B. Utilize library's current system, uninterrupted by construction activities. Coordinate with Electrical Drawings.

1.3 TELEPHONE SERVICE

- A. Each contractor shall provide, maintain, and pay for telephone service as necessary to complete the work of each contract.

1.4 WATER SERVICE

- A. Construction water is available on site at the existing Library building.
- B. Permanent building drains may not be used for hand tool or equipment cleaning, or other installation related material washout.

1.5 TEMPORARY SANITARY FACILITIES

- A. Sanitary Facilities: Contractor may utilize the Library's public toilet, wash facilities, and drinking water for use of construction personnel. Maintain facilities in a clean and sanitary condition.

1.6 VEHICULAR ACCESS / PARKING

- A. Existing on-site areas may be used and maintained for construction purposes strictly for delivery of material or removal of debris, etc. Locations shall be coordinated with Owner. Contractor on-site parking is allowed but in designated location as coordinated with the Library.

1.7 PROGRESS CLEANING AND WASTE REMOVAL

- A. Contractor shall maintain areas free of waste materials, debris, and rubbish. Maintain site in a clean and orderly condition.

- B. Contractor shall remove debris and rubbish from closed or remote spaces, prior to enclosing the space.
- C. Contractor shall be responsible for the removal of debris, rubbish, excess materials, etc. from the site on a daily basis. No such material shall be stored on the site, except in regularly removed dumpsters. Dispose of all such materials off-site in a legal manner.
- D. If necessary, a dumpster shall be provided and maintained by the Contractor in a location coordinated with Owner.

1.7 IDENTIFICATION

- A. The use or display of any type of sign (advertising or other) is prohibited.

1.8 BARRIERS

- A. The General Contractor shall provide a temporary barrier to separate work area from adjacent site areas and interior spaces. The Contractor shall be responsible for protection, maintenance, and periodic relocation of barrier to facilitate work. Refer to drawings for location and 011000 Summary for description of barrier.

1.9 SECURITY

- A. Security: Protect Work and existing premises from theft, vandalism, and unauthorized entry.
- B. Entry Control at construction areas: Allow entrance only to authorized persons with proper identification.

1.10 DUST CONTROL

- A. Contractor shall execute Work by methods to minimize raising dust from construction operations. Provide positive means to prevent air-borne dust from dispersing into atmosphere.

1.11 POLLUTION CONTROL

- A. Contractor shall provide methods, means, and facilities to prevent contamination of soil, water, and atmosphere from discharge of noxious, toxic substances, and pollutants produced by construction operations.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION

3.1 SECURITY AND PROTECTION FACILITIES INSTALLATION

- A. Environmental Protection: Provide protection, operate temporary facilities, and conduct construction in ways and by methods that comply with environmental regulations and that minimize possible air, waterway, and subsoil contamination or pollution or other undesirable effects.
- B. Barricades, Warning Signs, and Lights: Comply with requirements of authorities having jurisdiction for erecting structurally adequate barricades, including warning signs and lighting.
- C. Temporary Enclosures: Provide temporary enclosures for protection of construction, in progress and completed, from exposure, foul weather, other construction operations, and similar activities. Provide temporary dust-proof enclosure for building interior.

END OF SECTION

SECTION 016000
PRODUCT REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Products
- B. Product delivery requirements
- C. Product storage and handling requirements
- D. Product options
- E. Equivalent Product and substitution procedures

1.2 PRODUCTS

- A. Provide products of qualified manufacturers suitable for intended use. Provide products of each type and/or system by a single manufacturer unless specified otherwise.
- B. Do not use materials and equipment removed from existing premises, except as specifically permitted by the Contract Documents.
- C. Provide interchangeable components of the same manufacturer for components being replaced.

1.3 PRODUCT DELIVERY REQUIREMENTS

- A. Transport and handle products in accordance with manufacturer's instructions.
- B. Promptly inspect shipments to ensure that products comply with requirements, quantities are correct, and products are undamaged.
- C. Provide equipment and personnel to handle products by methods to prevent soiling, disfigurement, or damage.

1.4 PRODUCT STORAGE AND HANDLING REQUIREMENTS

- A. Store and protect products in accordance with manufacturers' instructions
- B. Store with seals and labels intact and legible
- C. Store sensitive products in weather tight, climate controlled, enclosures in an environment favorable to product
- D. Provide equipment and personnel to store products by methods to prevent soiling, disfigurement, or damage

1.5 PRODUCT OPTIONS

- A. Products Specified by Reference Standards or by Description Only: Any product meeting those standards or description.
- B. Products Specified by Naming One or More Manufacturers: products of one of manufacturers named and meeting specifications; or an equivalent product approved by the Architect.
- C. Products Specified by Naming One or More Manufacturers with a Provision for Substitutions: Submit a request for equivalent products or substitutions for any manufacturer not named in accordance with the following article.

1.6 EQUIVALENT PRODUCT AND SUBSTITUTION PROCEDURES

- A. Instructions to Bidders specify time restrictions for submitting requests for Substitutions during the bidding period to requirements specified in this section.
- B. The Contractor may propose to use an equivalent product during the submittal process that is equal to the standard of quality, performance, and aesthetic set in the construction documents. The Architect shall be the sole judge of the equivalence of a product submitted in this manner.
- C. Substitutions may be considered when a product becomes unavailable through no fault of the Contractor.
- D. Equivalents/Substitutions must be requested in writing on Contractor's letterhead by Contractor desiring approval. Requests by manufacturers, sales representatives, or third parties will not be considered.
- E. Document each request with complete data substantiating compliance of proposed Equivalent or Substitution with Contract Documents.
- F. A request constitutes a representation that the Contractor:
 - 1. Has investigated proposed product and determined that it meets or exceeds the quality level of the specified product
 - 2. Will provide the same warranty for the Equivalent or Substitution as for the specified product
 - 3. Will coordinate installation and make changes to other Work which may be required for the Work to be complete with no additional cost to Owner
 - 4. Waives claims for additional costs or time extension which may subsequently become apparent
 - 5. Will reimburse Owner and Architect/Engineer for review or redesign services associated with re-approval by authorities
- G. Equivalents/Substitutions will not be considered when they are indicated or implied on Shop Drawing or Product Data submittals, without separate written request, or when acceptance will require revision to the Contract Documents.
- H. Equivalents/Substitution Submittal Procedure:
 - 1. Submit three copies of request for Equivalent/Substitution for consideration. Limit each request to one proposed product.
 - 2. Submit Shop Drawings, Product Data, and certified test results attesting to the proposed product equivalence. Burden of proof is on proposer.
 - 3. The Architect/Engineer will notify Contractor in writing of decision to accept or reject request.

1.7 SUPPORTS

- A. Provide required supports, beams, angles, hangers, rods, bases, braces, and other items to properly support contract work.
- B. Modify studs, add studs, add framing or otherwise reinforce studs in wood stud walls and partitions as required to suit contract work. If necessary in stud walls, provide special supports from floor to structure above. All such work as approved by the Owner and Architect.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END OF SECTION

SECTION 017000
EXECUTION REQUIREMENTS

PART 1 GENERAL

1.1 SECTION INCLUDES

- A. Closeout procedures
- B. Final cleaning
- C. Protecting installed construction
- D. Owner Instructions
- E. Project record documents
- F. Operation and maintenance data
- G. Product warranties and product bonds

1.2 CLOSEOUT PROCEDURES

- A. Submit written certification that Contract Documents have been reviewed, Work has been inspected, and that Work is complete in accordance with Contract Documents and ready for Architect/Engineer's review.
- B. Provide submittals to Architect/Engineer that are required by governing or other authorities.
 - 1. Contractor shall submit Contractor's 1 year warranty, on Contractor's letterhead. Warranty shall include Project Name and Address, Owner's Name and Address, and effective dates. Warranty period shall begin on Date of Substantial Completion.
 - 2. Submit AIA Document G706 – Contractor's Affidavit of Payment of Debts and Claims.
 - 3. Submit AIA Document G706A – Contractor's Affidavit of Release of Liens.
 - 4. Submit AIA Document G707 – Consent of Surety to Final Payment.
 - 5. Submit "Operation and Maintenance Manuals".
- C. Submit final Application for Payment identifying total adjusted Contract Sum, previous payments, and sum remaining due.

1.3 FINAL CLEANING

- A. Contractor shall execute final cleaning prior to final project assessment.
- B. Clean surfaces exposed to view; remove temporary labels, stains and foreign substances, polish transparent and glossy surfaces, vacuum carpeted and soft surfaces.
- C. Clean site of any material, debris, rubbish, etc. associated with the work.
- D. Remove waste and surplus materials, rubbish, and construction facilities from the site

1.4 PROTECTING INSTALLED CONSTRUCTION

- A. Provide for the protection of installed Work.
- B. Provide temporary and removable protection for installed products. Control activity in immediate work area to prevent damage.
- C. At the end of each work day, each Contractor shall be responsible for covering/protecting work against weather, vandalism, theft and damage. Cover/Protection shall include adequate waterproof/windproof measures to prevent moisture and freezing damage.

1.5 OWNER INSTRUCTIONS

- A. Before final acceptance of the work, furnish necessary skilled labor to operate all systems by seasons for period not less than one day. Instruct designed person on proper operation and care of systems/equipment. Repeat instructions, if necessary. Obtain written acknowledgement from persons instructed prior to final payment. Coordinate Owner's videotaping of instruction session.
- B. Contractor is fully responsible for systems until final acceptance, even though operated by Owner's personnel, unless otherwise agreed in writing.
- C. List under clear plastic, operating, maintenance and starting precaution procedures to be followed by Owner for operating systems and equipment.
- D. Instruction Portfolio:
 - 1. Prepare one Instruction and Maintenance Portfolio. Include one copy each of approved Shop Drawings, wiring diagrams, piping diagrams, spare parts lists and manufacturer's instructions.
 - 2. Include written instructions, describing equipment, starting/operating procedures, emergency operating instructions, summer-winter changeover, freeze protection, precautions and recommended maintenance procedures. Include name, address, and telephone number of supplier manufacturer representative and service agency for all major equipment items.
 - 3. Bind above items in a three ring binder with name of project on the cover. Deliver to Owner before request for final acceptance.

PART 2 PRODUCTS – NOT USED

PART 3 EXECUTION – NOT USED

END OF SECTION

AIA Document G706 – 1994 Contractor's Affidavit of Payment of Debts and Claims

AIA Document G706A – 1994 Contractor's Affidavit of Release of Liens

AIA Document G707 – 1994 Consent of Surety to Final Payment

Follow this Section



AIA[®]

Document G706™ – 1994

Contractor's Affidavit of Payment of Debts and Claims

PROJECT: *(Name and address)*

ARCHITECT'S PROJECT NUMBER:

OWNER:

ARCHITECT:

TO OWNER: *(Name and address)*

CONTRACT FOR:

CONTRACTOR:

CONTRACT DATED:

SURETY:

OTHER:

STATE OF:

COUNTY OF:

The undersigned hereby certifies that, except as listed below, payment has been made in full and all obligations have otherwise been satisfied for all materials and equipment furnished, for all work, labor, and services performed, and for all known indebtedness and claims against the Contractor for damages arising in any manner in connection with the performance of the Contract referenced above for which the Owner or Owner's property might in any way be held responsible or encumbered.

EXCEPTIONS:

SUPPORTING DOCUMENTS ATTACHED HERETO:

1. Consent of Surety to Final Payment. Whenever Surety is involved, Consent of Surety is required. AIA Document G707, Consent of Surety, may be used for this purpose

Indicate Attachment Yes No

The following supporting documents should be attached hereto if required by the Owner:

1. Contractor's Release or Waiver of Liens, conditional upon receipt of final payment.
2. Separate Releases or Waivers of Liens from Subcontractors and material and equipment suppliers, to the extent required by the Owner, accompanied by a list thereof.
3. Contractor's Affidavit of Release of Liens (AIA Document G706A).

CONTRACTOR: *(Name and address)*

BY:

(Signature of authorized representative)

(Printed name and title)

Subscribed and sworn to before me on this date:

Notary Public:

My Commission Expires:



AIA[®] Document G706A[™] – 1994

Contractor's Affidavit of Release of Liens

PROJECT: <i>(Name and address)</i>	ARCHITECT'S PROJECT NUMBER:	OWNER: <input type="checkbox"/>
TO OWNER: <i>(Name and address)</i>	CONTRACT FOR:	ARCHITECT: <input type="checkbox"/>
	CONTRACT DATED:	CONTRACTOR: <input type="checkbox"/>
		SURETY: <input type="checkbox"/>
		OTHER: <input type="checkbox"/>

STATE OF:
COUNTY OF:

The undersigned hereby certifies that to the best of the undersigned's knowledge, information and belief, except as listed below, the Releases or Waivers of Lien attached hereto include the Contractor, all Subcontractors, all suppliers of materials and equipment, and all performers of Work, labor or services who have or may have liens or encumbrances or the right to assert liens or encumbrances against any property of the Owner arising in any manner out of the performance of the Contract referenced above.

EXCEPTIONS:

SUPPORTING DOCUMENTS ATTACHED HERETO:

1. Contractor's Release or Waiver of Liens, conditional upon receipt of final payment.
2. Separate Releases or Waivers of Liens from Subcontractors and material and equipment suppliers, to the extent required by the Owner, accompanied by a list thereof.

CONTRACTOR: *(Name and address)*

BY:

(Signature of authorized representative)

(Printed name and title)

Subscribed and sworn to before me on this date:

Notary Public:
My Commission Expires:



AIA® Document G707™ – 1994

Consent Of Surety to Final Payment

PROJECT: *(Name and address)*

ARCHITECT'S PROJECT NUMBER:

OWNER:

CONTRACT FOR:

ARCHITECT:

TO OWNER: *(Name and address)*

CONTRACT DATED:

CONTRACTOR:

SURETY:

OTHER:

In accordance with the provisions of the Contract between the Owner and the Contractor as indicated above, the
(Insert name and address of Surety)

on bond of
(Insert name and address of Contractor)

, SURETY,

hereby approves of the final payment to the Contractor, and agrees that final payment to the Contractor shall not relieve the Surety
of any of its obligations to
(Insert name and address of Owner)

, CONTRACTOR,

as set forth in said Surety's bond.

, OWNER,

IN WITNESS WHEREOF, the Surety has hereunto set its hand on this date:
(Insert in writing the month followed by the numeric date and year.)

(Surety)

(Signature of authorized representative)

(Printed name and title)

Attest:
(Seal):

SECTION 220500
BASIC PLUMBING REQUIREMENTS

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. Provide all labor, tools, materials, accessories, parts, transportation, taxes, and related items, essential for installation of the work and necessary to make work, complete, and operational. Provide new equipment and material unless otherwise called for. References to codes, specifications and standards called for in the specification sections and on the drawings mean, the latest edition, amendment and revision of such referenced standard in effect on the date of these contract documents. All materials and equipment shall be installed in accordance with the manufacturer's recommendations.

1.2 LICENSING

- A. The Contractor shall hold a license to perform the work as issued by the authority having jurisdiction.
- B. Plumbing contract work shall be performed by, or under, the direct supervision of a licensed master plumber.
- C. Electrical contract work shall be performed by, or under, the direct supervision of a licensed electrician.

1.3 PERMITS

- A. Apply for and obtain all required permits and inspections, pay all fees and charges including all service charges. Provide certificate of approval from the Authorities Having Jurisdiction prior to request for final payment.
- B. Provide electrical inspection certificate of approval from Middle Department Inspection Agency, Commonwealth Inspection Agency, or an Engineer approved Inspection Agency prior to request for final payment.

1.4 CODE COMPLIANCE

- A. Provide work in compliance with the following:
 - 1. 2020 Building Code of New York State.
 - 2. 2020 Existing Building Code of New York State.
 - 3. 2020 Fire Code of New York State.
 - 4. 2020 Plumbing Code of New York State.
 - 5. 2020 Mechanical Code of New York State.
 - 6. 2020 Fuel Gas Code of New York State.

7. 2020 Property Maintenance Code of New York State.
8. 2020 Energy Conservation Code of New York State.
9. Accessible and Usable Buildings and Facilities, ICC A117.1 (2009).
10. New York State Department of Labor Rules and Regulations.
11. New York State Department of Health.
12. National Electrical Code (NEC) (current edition in effect at project location).
13. Occupational Safety and Health Administration (OSHA).
14. Local Codes and Ordinances.
15. Life Safety Code, NFPA 101.
16. New York State Education Department Manual of Planning Standards.

1.5 GLOSSARY

ACI	American Concrete Institute
AGA	American Gas Association
AGCA	Associated General Contractors of America, Inc.
AIA	American Institute of Architects
AISC	American Institute of Steel Construction
AFBMA	Anti-Friction Bearing Manufacturer's Association
AMCA	Air Moving and Conditioning Association, Inc.
ANSI	American National Standards Institute
ARI	Air Conditioning and Refrigeration Institute
ASHRAE	American Society of Heating, Refrigerating and Air Conditioning Engineers, Inc.
ASME	American Society of Mechanical Engineers
ASPE	American Society of Plumbing Engineers
ASTM	American Society for Testing Materials
AWSC	American Welding Society Code
AWWA	American Water Works Association
FM	Factory Mutual Insurance Company
IBR	Institute of Boiler & Radiation Manufacturers
IEEE	Institute of Electrical and Electronics Engineers
IRI	Industrial Risk Insurers

NEC	National Electrical Code
NEMA	National Electrical Manufacturer's Association
NESC	National Electrical Safety Code
NFPA	National Fire Protection Association
NYS/DEC	New York State Department of Environmental Conservation
SBI	Steel Boiler Institute
SMACNA	Sheet Metal and Air Conditioning Contractors National Association
UFPO	Underground Facilities Protective Organization
UL	Underwriter's Laboratories, Inc.
OSHA	Occupational Safety and Health Administration
XL - GAP	XL Global Asset Protection Services

1.6 DEFINITIONS

Acceptance	Owner acceptance of the project from Contractor upon certification by Owner's Representative.
As Specified	Materials, equipment including the execution specified/shown in the contract documents.
Basis of Design	Equipment, materials, installation, etc. on which the design is based. (Refer to the article, Equipment Arrangements, and the article, Substitutions.)
Code Requirements	Minimum requirements.
Concealed	Work installed in pipe and duct shafts, chases or recesses, inside walls, above ceilings, in slabs or below grade.
Coordination Drawings	Show the relationship and integration of different construction elements and trades that require careful coordination during fabrication or installation, to fit in the space provided or to function as intended.
Delegated-Design Services	<p>Performance and Design criteria for Contractor provided professional services. Where professional design services or certifications by a design professional are specifically required of a Contractor, by the Contract Documents. Provide products and systems with the specific design criteria indicated.</p> <p>If criteria indicated is insufficient to perform services or certification required, submit a written request for additional information to the Engineer. Submit wet signed and sealed certification by the licensed design professional for each product and system specifically assigned to the Contractor to be designed or certified by a design professional.</p> <p>Examples: structural maintenance ladders, stairs and platforms, pipe anchors, seismic compliant system, wind, structural supports for material equipment, sprinkler hydraulic calculations.</p>
Equal, Equivalent, Equal To, Equivalent	Shall all be interpreted and should be taken to mean "to the satisfaction of the Engineer".

To, As Directed and As Required	
Exposed	Work not identified as concealed.
Extract	Carefully dismantle and store where directed by Owner's Representative and/or reinstall as indicated on drawings or as described in specifications.
Furnish	Purchase and deliver to job site, location as directed by the Owner's Representative.
Inspection	Visual observations by Owner's site Representative.
Install	Store at job site if required, proper placement within building construction including miscellaneous items needed to affect placement as required and protect during construction. Take responsibility to mount, connect, start-up and make fully functional.
Labeled	Refers to classification by a standards agency.
Manufacturers	Refer to the article, Equipment Arrangements, and the article, Substitutions.
Prime Professional	Architect or Engineer having a contract directly with the Owner for professional services.
Product Data	Illustrations, standard schedules, performance charts, instructions, brochures, wiring diagrams, finishes, or other information furnished by the Contractor to illustrate materials or equipment for some portion of the work.
Provide (Furnish and Install)	Contractor shall furnish all labor, materials, equipment and supplies necessary to install and place in operating condition, unless otherwise specifically stated.
Relocate	Disassemble, disconnect, and transport equipment to new locations, then clean, test, and install ready for use.
Remove	Dismantle and take away from premises without added cost to Owner, and dispose of in a legal manner.
Review and Reviewed	Should be taken to mean to be followed by "for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents".
Roughing	Pipe, duct, conduit, equipment layout and installation.
Samples	Physical full scale examples which illustrate materials, finishes, coatings, equipment or workmanship, and establishes standards by which work will be judged.
Satisfactory	As specified in contract documents.
Shop Drawings	Fabrication drawings, diagrams, schedules and other instruments, specifically prepared for the work by the Contractor or a Sub-contractor, manufacturer, supplier or distributor to illustrate some portion of the work.
Site Representative	Owner's Inspector or "Clerk of Works" at the work site.
Submittals Defined (Technical)	Any item required to be delivered to the Engineer for review as requirement of the Contract Documents. The purpose of technical submittals is to demonstrate for those portions of the

work for which a submittal is required, the manner in which the Contractor proposes to conform to the information given and design concepts expressed and required by the Contract Documents.

1.7 EXISTING CONDITIONS

- A. Contractor shall review all available record documents of existing construction or other existing conditions and hazardous material information. Owner does not guarantee that existing conditions are the same as those indicated in these documents. Contractor shall record existing conditions via measured drawings and preconstruction photographs or video. Inventory and record the condition of items to be removed and salvaged. Provide photographs or video of conditions that might be misconstrued as damage caused by salvage, removal or construction operations.
- B. Owner will occupy portions of the building immediately adjacent to the area(s) of removals. Conduct removals so Owner's operations are not disrupted. Contractor shall locate, identify, disconnect and seal or cap mechanical, plumbing, fire protection and/or electrical systems serving areas of removals, unless noted otherwise in the contract documents. Contractor shall arrange shut-down of systems with the Architect. Piping and ductwork indicated to be removed shall be removed and capped or plugged with compatible materials. If services/systems are required to be removed, relocated or abandoned, provide temporary services/systems the bypass area(s) of removals to maintain continuity of services/systems to other parts of the building, as required.

1.8 SHOP DRAWINGS/PRODUCT DATA/SAMPLES

- A. Provide submittals on all items of equipment and materials to be furnished and installed. Submittals shall be accompanied by a transmittal letter, stating name of project and contractor, name of vendor supplying equipment, number of drawings, titles, specification sections (name and number) and other pertinent data called for in individual sections. Submittals shall have individual cover sheets that shall be dated and contain: Name of project; name of prime professional; name of prime contractor; description or names of equipment, materials and items; and complete identification of locations at which materials or equipment are to be installed. Individual piecemeal or incomplete submittals will not be accepted. Similar items, (all types specified) shall be submitted at under one cover sheet per specification section (e.g. lighting fixtures, valves, plumbing fixtures, etc.). Submittals shall include all required documentation for each product listed in the specification section at the same time as a complete package. Number each submittal by trade. Indicate deviations from contract requirements on Letter of Transmittal. Submittals will be given a general review only. Corrections or comments made on the Submittals during the review do not relieve Contractor from compliance with requirements of the drawings and specifications. The Contractor is responsible for: confirming and correcting all quantities; checking electrical characteristics and dimensions; selecting fabrication processes and techniques of construction; coordinating his work with that of all other trades; and performing his work in a safe and satisfactory manner. If submitting hard copies, submit four (4) copies for review.
- B. The Engineer will review up to two (2) submissions of any single submittal. The Contractor will be invoiced on an hourly rate basis for the time spent reviewing the same shop drawing in excess of twice.

- C. If submittals are to be submitted electronically, all requirements in Item A apply. Submittals shall be emailed in PDF format to specific email address provided by the Construction Manager, General Contractor, Architect or Project Manager. Name of project shall be in subject line of email. Send emails to mealbasubmittalclerk@meengineering.com
- D. Refer to Division 01 for additional requirements.

1.9 PROTECTION OF PERSONS AND PROPERTY

- A. Contractor shall assume responsibility for construction safety at all times and provide, as part of contract, all trench or building shoring, scaffolding, shielding, dust/fume protection, mechanical/electrical protection, special grounding, safety railings, barriers, and other safety feature required to provide safe conditions for all workmen and site visitors.

1.10 EQUIPMENT ARRANGEMENTS

- A. The contract documents are prepared using one manufacturer as the Basis of Design, even though other manufacturers' names are listed. If Contractor elects to use one of the listed manufacturers other than Basis of Design or if the physical size, performance or electrical characteristics for the Basis of Design equipment differs from what is indicated in the contract documents, submit detailed drawings, indicating proposed installation of equipment. Show maintenance clearances, service removal space required, and other pertinent revisions to the design arrangement. Make required changes in the work of other trades, at no increase in any contract. Provide larger motors, feeders, breakers, and equipment, additional control devices, valves, fittings and other miscellaneous equipment required for proper operation, and assume responsibility for proper location of roughing and connections by other trades. Remove and replace doorframes, access doors, walls, ceilings, or floors required to install. If revised arrangement submittal is rejected, revise and resubmit specified Basis of Design item which conforms to Contract Documents.

1.11 SUBSTITUTIONS

- A. Refer to Division 01 for additional requirements.

1.12 UTILITY COMPANY SERVICES

- A. Division 26 shall make arrangements with Orange and Rockland for electric service to the Owner's distribution equipment. Provide underground or overhead electric service as called for and transformers, meter sockets or meter compartments as required by the Utility Company. Coordinate all activities between the Owner and Utility Company. The installation of the electric service shall comply with the published Utility Company standards. **PAY ALL UTILITY COMPANY CHARGES; INCLUDE CHARGES IN THE BASE BID.**
- B. Division 22 shall make arrangements with Orange and Rockland for gas service to the Owner's distribution system. Provide service to the building as required by the Utility Company. Coordinate all activities between the Owner and Utility Company. The installation of the gas service shall comply with the published Utility Company standards.

PAY ALL UTILITY COMPANY CHARGES; INCLUDE CHARGES IN THE BASE BID.

1.13 ROUGHING

- A. The Contract Drawings have been prepared in order to convey design intent and are diagrammatic only. Drawings shall not be interpreted to be fully coordinated for construction.
- B. Due to small scale of Drawings, it is not possible to indicate all offsets, fittings, changes in elevation, interferences, etc. Make necessary changes in contract work, equipment locations, etc., as part of a contract to accommodate work to avoid obstacles and interferences encountered. Before installing, verify exact location and elevations at work site. **DO NOT SCALE** plans. If field conditions, details, changes in equipment or shop drawing information require an important rearrangement, report same to Owner's Representative for review. Obtain written approval for all major changes before installing.
- C. Install work so that items both existing and new are operable and serviceable. Eliminate interference with removal of coils, motors, filters, belt guards and/or operation of doors. Provide easy, safe, and code mandated clearances at controllers, motor starters, valve access, and other equipment requiring maintenance and operation. Provide new materials, including new piping and insulation for relocated work.
- D. Coordinate work with other trades and determine exact route or location of each duct, pipe, conduit, etc., before fabrication and installation. Coordinate with Architectural Drawings. Obtain from Owner's Representative exact location of all equipment in finished areas, such as thermostat, fixture, and switch mounting heights, and equipment mounting heights. Coordinate all work with the architectural reflected ceiling plans and/or existing Architecture. Mechanical and electrical drawings show design arrangement only for diffusers, grilles, registers, air terminals, lighting fixtures, sprinklers, speakers, and other items. Do not rough-in contract work without reflected ceiling location plans.
- E. Before roughing for equipment furnished by Owner or in other Divisions, obtain from Owner and other Divisions, approved roughing drawings giving exact location for each piece of equipment. Do not "rough in" services without final layout drawings approved for construction. Cooperate with other trades to insure proper location and size of connections to insure proper functioning of all systems and equipment. For equipment and connections provided in this contract, prepare roughing drawing as follows:
 - 1. Existing Equipment: Measure the existing equipment and prepare for installation in new location.
 - 2. New Equipment: Obtain equipment roughing drawings and dimensions, then prepare roughing-in-drawings. If such information is not available in time, obtain an acknowledgement in writing, then make space arrangements as required with Owner's Representative.

1.14 REMOVAL WORK

- A. Where existing equipment removals are called for, submit complete list to Owner's Representative. All items that Owner wishes to retain that do not contain asbestos or PCB material shall be delivered to location directed by Owner. Items that Owner does not wish to retain shall be removed from site and legally disposed of. Removal and disposal of material containing asbestos, lead paint, mercury and PCB's shall be in accordance with Federal, State and Local law requirements. Where equipment is called for to be relocated, contractor shall carefully remove, clean and recondition, then reinstall. Remove all abandoned piping, wiring, equipment, lighting, ductwork, tubing, supports, fixtures, etc. Visit each room, crawl spaces, and roofs to determine total Scope of Work. The disturbance or dislocation of asbestos-containing materials causes asbestos fibers to be released into the building's atmosphere, thereby creating a health hazard to workmen and building occupants. Consistent with Industrial Code Rule 56 and the content of recognized asbestos-control work, the Contractor shall apprise all of his workers, supervisory personnel, subcontractors, Owner and Consultants who will be at the job site of the seriousness of the hazard and of proper safeguards and work procedures which must be followed, as described in New York State Department of Labor Industrial Code Rule 56.
- B. For materials indicated to contain lead, that are being affected by demolition or construction, the contractor shall comply with all Federal, State and Local law requirements regarding worker exposure to lead disturbance and abatement procedures.
- C. Refer to the Owner's Lead Paint Survey. The Survey identifies the surfaces within the buildings that were tested for lead by collecting paint samples and performing laboratory analysis. If any unidentified surfaces are to be impacted the lead content shall be tested by analytical determinations conducted by a qualified laboratory approved by the Owner. The contractor shall review the current owner's lead paint reports on file before starting any work which may disturb existing surfaces.

1.15 EQUIPMENT AND MATERIAL REQUIREMENTS

- A. Provide materials that meet the following minimum requirements:
 - 1. Materials shall have a flame spread rating of 25 or less and a smoke developed rating of 50 or less, in accordance with NFPA 255.
 - 2. All equipment and material for which there is a listing service shall bear a UL label.
 - 3. Potable water systems and equipment shall be built according to AWWA Standards.
 - 4. Gas-fired equipment and system shall meet AGA Regulations and shall have AGA label.
 - 5. All electrical equipment and systems, as a whole, shall be tested and listed by an OSHA approved Nationally Recognized Testing Laboratory (NRTL) for the intended use in accordance with the applicable standards and have a physical label indicating such.

6. Fire protection equipment shall be UL listed and FM approved.
- B. Exterior and wet locations shall utilize materials, equipment supports, mounting, etc. suitable for the intended locations. Metals shall be stainless steel, galvanized or with baked enamel finish as a minimum. Finishes and coatings shall be continuous and any surface damaged or cut ends shall be field corrected in accordance with the manufacturer's recommendations. Hardware (screws, bolts, nuts, washers, supports, fasteners, etc.) shall be:
1. Stainless steel where the associated system or equipment material is stainless steel or aluminum.
 2. Hot dipped galvanized or stainless steel where the associated system or equipment is steel, galvanized steel or other.

1.16 CUTTING AND PATCHING

- A. Each trade shall include their required cutting and patching work unless shown as part of the General Construction Contract. Refer to General Conditions of the Contract for Construction, for additional requirements. Cut and drill from both sides of walls and/or floors to eliminate splaying. Patch cut or abandoned holes left by removals of equipment or fixtures. Patch adjacent existing work disturbed by installation of new work including insulation, walls and wall covering, ceiling and floor covering, other finished surfaces. Patch openings and damaged areas equal to existing surface finish. Cut openings in prefabricated construction units in accordance with manufacturer's instructions.

1.17 PAINTING

- A. Paint all insulated and bare piping, pipe hangers and supports exposed to view in mechanical equipment rooms, penthouse, boiler rooms and similar spaces. Paint all bare piping, ductwork and supports exposed to the out-of-doors with rust inhibiting coatings. Paint all equipment that is not factory finish painted (i.e. expansion tanks, etc.).
- B. All painting shall consist of one (1) prime coat and two (2) finish coats of non-lead oil base paint, unless otherwise indicated herein. Provide galvanized iron primer for all galvanized surfaces. All surfaces must be thoroughly cleaned before painting. Review system color coding prior to painting with the Owner's Representative or Architect.
- C. All items installed after finished painting is completed and any damaged factory finish paint on equipment furnished under this contract must be touched up by the Contractor responsible for same.
- D. Include painting for patchwork with color to match adjacent surfaces. Where color cannot be adequately matched, paint entire surface. Provide one (1) coat of primer and two (2) finish coats or as called for in the Specifications.
- E. All primers and paint used in the interior of the building shall comply with the maximum Volatile Organic Compound (VOC) limits called for in the current version of U.S. Green Building Council LEED Credits EQ 4.1 and EQ 4.2.

1.18 CONCEALMENT

- A. **Conceal all contract work** above ceilings and in walls, below slabs, and elsewhere throughout building. If concealment is impossible or impractical, notify Owner's Representative before starting that part of the work and install only after their review. In areas with no ceilings, install only after Owner's Representative reviews and comments on arrangement and appearance.

1.19 PENETRATION FIRESTOPPING

- A. Fire-Stopping for Openings Through Fire and Smoke Rated Wall and Floor Assemblies:
 1. Provide materials and products listed or classified by an approved independent testing laboratory for "Penetration Fire-Stop Systems". The system shall meet the requirements of "Fire Tests of Penetrations Fire-Stops" designated ASTM E814.
 2. Provide fire-stop system seals at all locations where piping, tubing, conduit, electrical busways/cables/wires, ductwork and similar utilities pass through or penetrate fire rated wall or floor assembly. Provide fire-stop seal between sleeve and wall for drywall construction.
 3. The minimum required fire resistance ratings of the wall or floor assembly shall be maintained by the fire-stop system. The installation shall provide an air and watertight seal.
 4. The methods used shall incorporate qualities which permit the easy removal or addition of electrical conduits or cables without drilling or use of special tools. The product shall adhere to itself to allow repairs to be made with the same material and permit the vibration, expansion, and/or contraction of any items passing through the penetration without cracking, crumbling and resulting reduction in fire rating.
 5. Plastic pipe/conduit materials shall be installed utilizing intumescent collars.
 6. Provide a submittal including products intended for use, manufacturer's installation instructions, and the UL details for all applicable types of wall and floor penetrations.
 7. Fire-stopping products shall not be used for sealing of penetrations of non-rated walls or floors.
 8. Piping insulation is allowed to be reduced in thickness only when a specific UL assembly detail for piping passing thru a rated wall indicates a maximum insulation thickness that is less than the insulation specification section calls for. In this case reduce the insulation thickness just for the rated wall penetration. The reduction of insulation thickness shall be limited to the length of the penetration only.

B. Acceptable Manufacturers:

1. Dow Corning Fire-Stop System Foams and Sealants.
2. Nelson Electric Fire-Stop System Putty, CLK and WRP.
3. S-100 FS500/600, Thomas & Betts.
4. Carborundum Fyre Putty.
5. 3-M Fire Products.
6. Hilti Corporation.

1.20 NON-RATED WALL PENETRATIONS

- A. Each trade shall be responsible for sealing wall penetrations related to their installed work, including but not limited to ductwork, piping, conduits, etc. See individual specification sections for requirements.

1.21 SUPPORTS

- A. Provide required supports, beams, angles, hangers, rods, bases, braces, and other items to properly support contract work. Modify studs, add studs, add framing, or otherwise reinforce studs in metal stud walls and partitions as required to suit contract work. If necessary, in stud walls, provide special supports from floor to structure above.
- B. For precast panels/planks and metal decks, support mechanical/electrical work as determined by manufacturer and the Engineer. Provide heavy gauge steel mounting plates for mounting contract work. Mounting plates shall span two or more studs. Size, gauge, and strength of mounting plates shall be sufficient for equipment size, weight, and desired rigidity.
- C. For finished areas without a finished ceiling system such as classrooms, offices, conference rooms, etc., where decking and structure is exposed, and ductwork/piping/conduit is exposed: All mounting brackets, channel support systems and mounting hardware for ductwork, piping, lighting, etc. shall be concealed and approved by the Architect/Engineer prior to the installation. AirCraft cable style hanging for ductwork is required. It is recommended that room mockups be done and receive Architect/Engineer approval prior to proceeding with installation.
- D. Equipment, piping, conduit, raceway, etc. supports shall be installed to minimize the generation and transmission of vibration.
- E. Materials and equipment shall be solely supported by the building structure and connected framing. Gypboard, ceilings, other finishes, etc. shall not be used for support of materials and equipment.

1.22 ACCESS PANELS

- A. Provide access panels for required access to respective trade's work. Location and size shall be the responsibility of each trade. Access panels provided for equipment shall provide an opening not smaller than 22 in. by 22 in. Panels shall be capable of opening a minimum of 90 degrees. Bear cost of construction changes necessary due to improper information or failure to provide proper information in ample time. Access panels over 324 square inches shall have two cam locks. Provide proper frame and door type for various wall or ceiling finishes. Access panels shall be equal to "Milcor" as manufactured by Inland Steel Products Co., Milwaukee, Wisconsin. Provide General Construction trade with a set of architectural plans with size and locations of access panels.

1.23 CONCRETE BASES

- A. Provide concrete bases for all floor mounted equipment. Provide 3,000 lb. concrete, chamfer edges, trowel finish, and securely bond to floor by roughening slab and coating with cement grout. Bases 4 in. high (unless otherwise indicated); shape and size to accommodate equipment. Provide anchor bolts in equipment bases for all equipment provided for the project, whether mounted on new concrete bases or existing concrete bases.

1.24 PLUMBING EQUIPMENT CONNECTIONS

- A. Contractor is responsible for draining, filling, venting, chemically treating and restarting any systems which are affected by work shown on the Contract Documents unless specifically noted otherwise.
- B. Provide roughing and final gas connections to all equipment. Provide loose key stops, sanitary "P" traps, tailpiece, adapters, gas or air cocks, and all necessary piping and fittings from roughing point to equipment. Provide installation of sinks, faucets, traps, tailpiece furnished by others. Provide cold water line with gate valve and backflow prevention device at locations called for. Provide continuation of piping and connection to equipment that is furnished by others. Provide relief valve discharge piping from equipment relief valves.
- C. Provide valved water outlet adjacent to equipment requiring same. Provide equipment type floor drains, or drain hubs, adjacent to equipment.
- D. Install controls and devices furnished by others.
- E. Refer to Contract Documents for roughing schedules, and equipment and lists indicating scope of connections required.
- F. Provide for Owner furnished and Contractor furnished equipment all valves, piping, piping accessories, traps, pressure reducing valves, gauges, relief valves, vents, drains, as required.

1.25 ELECTRICAL EQUIPMENT CONNECTIONS

- A. Provide complete power connections to all electrical equipment. Provide control connections to equipment. Heavy duty NEC rated disconnect ahead of each piece of equipment. Ground all equipment in accordance with NEC.
- B. Provide for Owner furnished and Contractor furnished equipment all power wiring, electric equipment, control wiring, switches, lights, receptacles, and connections as required.

1.26 STORAGE AND PROTECTION OF MATERIALS AND EQUIPMENT

- A. Store Materials on dry base, at least 6 in. aboveground or floor. Store so as not to interfere with other work or obstruct access to buildings or facilities. Provide waterproof/windproof covering. Remove and provide special storage for items subject to moisture damage. Protect against theft or damage from any cause. Replace items stolen or damaged, at no cost to Owner.
- B. Refer to Division 01 for additional information.

1.27 FREEZING AND WATER DAMAGE

- A. Take all necessary precautions with equipment, systems and building to prevent damage due to freezing and/or water damage. Repair or replace, at no change in contract, any such damage to equipment, systems, and building. Perform first seasons winterizing in presence of Owner's operating staff.

1.28 OWNER INSTRUCTIONS

- A. Before final acceptance of the work, furnish necessary skilled labor to operate all systems by seasons. Instruct designated person on proper operation, and care of systems/equipment. Repeat instructions, if necessary. Obtain written acknowledgement from person instructed prior to final payment. Contractor is fully responsible for system until final acceptance, even though operated by Owner's personnel, unless otherwise agreed in writing. List under clear plastic, operating, maintenance, and starting precautions procedures to be followed by Owner for operating systems and equipment.

1.29 OPERATION AND MAINTENANCE MANUALS

- A. Submit by email (preferred) or digital media, thru the normal project submittal process. Include a copy of each final approved Shop Drawing, wiring diagrams, piping diagrams, spare parts lists, final testing and balancing report, as-built drawings and manufacturer's instructions. Include typewritten instructions, describing equipment, starting/operating procedures, emergency operating instructions, summer-winter changeover, freeze protection, precautions and recommended maintenance procedures. Include name, address, and telephone number of installing contractor and of supplier manufacturer Representative and service agency for all major equipment items. Provide a table of contents page and dividers based upon specification section numbers. Submit in a compiled and bookmarked PDF format as outlined below. Each item listed in the table of contents shall include a hyperlink to the associated section of the O&M Manual, in addition to the bookmarking.

- B. Provide content for Operation and Maintenance Manuals as specified in individual Specification Sections, and as reviewed and approved at the time of Section submittals. Submit reviewed manual content formatted and organized as required by this Section.
 - 1. Engineer will comment on whether content of operation and maintenance submittals is acceptable.
 - 2. Where applicable, clarify and update reviewed manual content to correspond to revisions and field conditions.
- C. Submit Operation and Maintenance Manuals in the following format:
 - 1. Submit by uploading to web-based project software site, or by email to Architect, as a formal project submittal in conformance with the project specific submittal procedures. Enable reviewer comments on draft submittals.
 - 2. Electronic Files: Use electronic files prepared by manufacturer where available. Where scanning of paper documents is required, configure scanned file for minimum readable file size.
 - 3. File Names and Bookmarks: Bookmark individual documents based on file names. Name document files to correspond to system, subsystem, and equipment names used in the table of contents. Group documents for each system and subsystem into individual composite bookmarked files, then create composite manual, so that resulting bookmarks reflect the system, subsystem, and equipment names in a readily navigated file tree. Configure electronic manual to display bookmark panel on opening file.
- D. Initial Manual Submittal: Submit draft copy of each manual at least 30 days before commencing Owner training. Engineer will comment on whether general scope and content of manual are acceptable.
- E. Final Manual Submittal: Submit O&M manual in final form prior to requesting inspection for Substantial Completion and at least 2 weeks before commencing Owner training. Engineer will return copy with review comments.
 - 1. Correct or revise O&M manual to comply with Engineer's comments. Submit copies of each corrected manual within 2 weeks of receipt of Engineer's comments.
- F. Refer to Division 01 for additional requirements.

1.30 RECORD DRAWINGS

- A. The Contractor shall obtain at his expense one (1) set of construction Contract Drawings, (including non-reproduction black and white prints or electronic files) for the purpose of recording as-built conditions.

- B. The Contractor shall perform all survey work required for the location and construction of the work and to record information necessary for completion of the record drawings. Record drawings shall show the actual location of the constructed facilities in the same manner as was shown on the bid drawings. All elevations and dimensions shown on the drawings shall be verified or corrected so as to provide a complete and accurate record of the facilities as constructed.
- C. It shall be the responsibility of the Contractor to mark **EACH** sheet of the contract documents in red and to record thereon in a legible manner, any and all approved field changes and conditions as they occur. A complete file of approved field sketches, diagrams, and other changes shall also be maintained. At completion of the work, the complete set of red marked contract documents, plus all approved field sketches and diagrams shall be submitted to the engineer and used in preparation of the record drawings.
- D. A complete set of red marked contract drawings shall be submitted, at one time, as the "Record" set. If there are no changes to a specific drawing, the contractor shall indicate "NO CHANGES" on that drawing. ALL drawings shall be included in the "Record" set.
- E. The complete set of red marked Contract Documents or electronic files shall be certified by the Contractor as reflecting record conditions and submitted to the engineer for review.
- F. The Contractor shall have the marked up set scanned, if they are not already electronic files, and then submit them to the Engineer as the "Record Set".
- G. Refer to Division 01 for additional requirements.

1.31 FINAL INSPECTION

- A. Upon completion of all Engineering Site Observation list items, the Contractor shall provide a copy of the Engineering Site Observation Report back to the Engineer with each items noted as completed or the current status of the item.

1.32 TEMPORARY FACILITIES

- A. Refer to the Division 01 Sections, General Conditions and Supplemental General Conditions.

1.33 TEMPORARY LIGHT AND POWER

- A. Refer to the Division 01 Sections, General Conditions and Supplemental General Conditions.

1.34 CLEANING

- A. It is the Contractor's responsibility to keep clean all equipment and fixtures provided under this contract for the duration of the project. Each trade shall keep the premises free from an accumulation of waste material or rubbish caused by his operations. The facilities require an environment of extreme cleanliness, and it is the Contractor's

responsibility to adhere to the strict regulations regarding procedures on the existing premises. After all tests are made and installations completed satisfactorily:

1. Thoroughly clean entire installation, both exposed surfaces and interiors.
2. Remove all debris caused by work.
3. Remove tools, surplus, materials, when work is finally accepted.

1.35 TRANSFER OF ELECTRONIC FILES

A. M/E Engineering, P.C. will provide electronic files for the Contractor's use in the preparation of sheet metal shop drawings, coordination drawings, or record drawings related to the project, and the following terms and conditions:

1. The Contractor shall submit a formal request for electronic drawing files on the M/E Engineering, P.C. website, by utilizing the following website link:
<http://www.meengineering.com/contact-pages/contractor-request>
2. M/E Engineering, P.C. makes no representation as to the compatibility of these files with the Contractor's hardware or the Contractor's software beyond the specific release of the referenced specifications.
3. M/E Engineering can only provide CAD files of M/E/P/FP drawing levels for which we are the Engineer of Record. CAD files of Architectural backgrounds, reflected ceiling plans, structural plans, etc. must be obtained separately from the Architect of Record.
4. Data contained on these electronic files is part of M/E Engineering, P.C.'s instruments of service shall not be used by the Contractor or anyone else receiving data through or from the Contractor for any purpose other than as convenience in the preparation of shop drawings for the referenced project. Any other use or reuse by the Contractor or by others will be at the Contractor's sole risk and without liability or legal exposure to M/E Engineering, P.C. The Contractor agrees to make no claim and hereby waive, to the fullest extent permitted by law, any claim or cause of action of any nature against M/E Engineering, P.C., its officers, directors, employees, agents or sub-consultants which may arise out of or in connection with the Contractor's use of the electronic files.
5. Furthermore, the Contractor shall, to the fullest extent permitted by law, indemnify and hold harmless, M/E Engineering, P.C. from all claims, damages, losses and expenses, including attorney's fees arising out of or resulting from the Contractor's use of these electronic files.
6. These electronic files are not contract documents. Significant difference may arise between these electronic files and corresponding hard copy contract documents due to addenda, change orders or other revisions. M/E Engineering, P.C. makes no representation regarding the accuracy or completeness of the electronic files the Contractor receives. In the event that a conflict arises between the signed contract documents prepared by M/E Engineering, P.C. and

electronic files, the signed contract documents shall govern. The Contractor is responsible for determining if any conflicts exist. By the Contractor's use of these electronic files the Contractor is not relieved of the Contractor's duty to comply with the contract documents, including and without limitation, the need to check, confirm and coordinate all dimensions and details, take field measurements, field verify conditions and coordinate the Contractor's work with that of other contractors for the project.

END OF SECTION

SECTION 220523
VALVES

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. Provide labor, materials, equipment and services to perform operations required for the complete installation and related Work as required in Contract Document.

1.2 SUBMITTALS

- A. Submit manufacturer's data in accordance with Basic Mechanical and Electrical Requirements. Obtain approval prior to ordering material.
- B. Provide submittals for all items specified under Part 2 of this section.

PART 2 - PRODUCTS

2.1 VALVES - GENERAL

- A. Valves shall have following requirements:
 - 1. Working pressure stamped or cast on bodies.
 - 2. Stem packing serviceable without removing valve from line.
- B. Acceptable Manufacturers:
 - 1. To establish a standard of quality and identify features, certain manufacturer's numbers are given in the following paragraphs.

2.2 GAS VALVES

- A. Plug Valves:
 - 1. 2 in. and Smaller: Semi-steel body and plug, short pattern, 100% pipe area rectangular port, lubricated plug, wrench operated with handle, sealing compound suitable with natural gas, threaded ends, 200 WOG, UL Listed for natural gas; Homestead Figure 601.
 - 2. 2-1/2 in. thru 6 in.: Semi-steel body and plug, short pattern, 100% pipe area rectangular port, lubricated plug, wrench operated with handle, sealing compound suitable with natural gas, flanged ends, 200 WOG, UL listed for natural gas; Homestead Figure 602.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Provide all shutoff, check, balancing and other type valves as indicated, as required by Code and as required for proper system maintenance, isolation and safety. Provide at major building and systems sections. Provide shutoff valves on all branch lines serving equipment indicated on plans.
- B. Locate valves for easy access and provide separate support where necessary. Install valves with stems at or above the horizontal position.
- C. Inspect valves for proper operation before installation.

3.2 NATURAL GAS SYSTEM

- A. Ball valves shall be UL listed for use in natural gas systems, or certified by another acceptable third-party testing agency.

END OF SECTION

SECTION 221010
PIPING SYSTEMS AND ACCESSORIES

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. Provide labor, materials, equipment and services to perform operations required for the complete installation and related Work as required in Contract Documents.

1.2 SUBMITTALS

- A. Provide a schedule of pipe materials, fittings and connections.

PART 2 - PRODUCTS

2.1 GENERAL

- A. Pipe and fittings shall be new, marked with manufacturer's name and comply with applicable ASTM and ANSI Standards.

2.2 STEEL PIPING AND FITTINGS

- A. Pipe: ASTM A53, or ASTM A106 seamless, Schedule 40 weight; black as called for; ends chamfered for welding or grooved for grooved mechanical connections.
- B. Fittings: Same material and pressure class as adjoining pipe.
 - 1. Welded fittings: Factory forged, seamless construction, butt weld type chamfered ends. Where branch connections are two or more sizes smaller than main size, use of "Weldolets", "Thredolets" or "Sokolets" acceptable. Mitered elbows, "shaped" nipples, and job fabricated reductions not acceptable unless specifically called for. Socket weld type, 2000 psi wp, where called for.
 - 2. Threaded fittings: Cast or malleable iron, black, as called for. Street type 45° and 90° elbows are not acceptable.
- C. Flanges, Unions, and Couplings:
 - 1. Threaded Connections:
 - a. Flanges: Cast iron companion type; for sizes 2-1/2 in. and larger.
 - b. Unions: Malleable iron, bronze to iron seat, 300 lb. wwp; for sizes 2 in. and smaller.
 - c. Couplings: Malleable iron. Steel thread protectors are not acceptable as couplings.

2. Welded Connections:

- a. Flanges: Welding neck type. Slip-on type not allowed unless noted and shall not be installed in conjunction with butterfly valves.

- D. Gauge and Instrument Connections: Nipples and plugs for adapting gauges and instruments to piping system shall be IPS brass.

2.3 STEEL PIPING AND FITTINGS - PRESS CONNECT FITTINGS

- A. Piping Standard: Black steel piping shall conform to ASTM A53 or ASTM A106 seamless, Schedule 40 weight pipe.

- B. Fittings: Listed in accordance with ANSI LC4/CSA 6.32.

- 1. For natural gas service, -40 deg. F to 180 deg F at 125 PSI.
- 2. Sizes 1/2 inch through 4 inch, Schedule 40.
- 3. Schedule 40 steel fittings with zinc/nickel coating for use with IPS schedule 40 carbon steel, pipe conforming to ASTM A53 or ASTM A106. Fittings shall have an HNBR sealing element, 420 stainless steel grip ring, separator ring and "Smart Connect" (SC) feature.

- C. Design Make: Viega Mega Press G System.

- D. Acceptable Manufacturer: Viega.

2.4 HANGERS, INSERTS AND SUPPORTS

- A. Hangers, Inserts, Clamps: B-Line, Grinnell, Michigan Hanger, PHD Manufacturing.

- B. Hangers:

- 1. Adjustable, wrought malleable iron or steel with electroplated zinc or cadmium finish.
- 2. Adjustable ring type where piping is installed directly on hanger for piping 3 in. and smaller.
- 3. Nuts, washers and rods with electroplated zinc or cadmium finish.
- 4. Provide hot dipped galvanized finish for hangers and accessories installed in exterior locations and interior.

- C. Spacing Schedule:

Pipe Size	Steel	Copper	Plastic	Cast Iron	Rod Size
3/4 in. to 1 in.	8 ft.	6 ft.	3 ft.	Each	3/8 in.
1-1/4 in. to 2 in.	10 ft.	6 ft.	3 ft.	Horizontal	3/8 in.

Pipe Size	Steel	Copper	Plastic	Cast Iron	Rod Size
2-1/2 in. to 4 in.	12 ft.	10 ft.	4 ft.	Joint 5 ft.	1/2 in.
				Maximum	
				O.C.	

D. Supports:

1. For Weights Under 1000 lbs.: "Drill-In" inserts, "U" shaped Channel, beam clamps or other structurally reviewed support. The factor of safety shall be at least four. Follow manufacturer's recommendations.
2. Adjustable Height Pipe Stand with Metal Base: For bare piping up to 3 in. nominal outside diameter. Two (2) 8 in. by 14 in. wide hot dipped galvanized steel base plates.

E. Piping systems with material not listed above shall be supported and protected in accordance with manufacturer's recommendations.

2.5 SLEEVES

A. Standard Type:

1. Schedule 40 black steel pipe sleeves for structural surfaces, two pipe sizes larger than the pipe, and as recommended by the sealing element manufacturer. Provide full circle water stop collar for sleeves located within below grade walls, wet wells and waterproofed surfaces. The collar shall be fabricated from steel plate and welded to the sleeve around its entire circumference.

2.6 SEALING ELEMENTS

A. Expanding neoprene link type, watertight seal consisting of interlocking links with zinc plated bolts.

1. Acceptable Manufacturers: Thunderline "Link-Seal" Series 200, 300 or 400, Pyropac, Calipco.

2.7 PIPING MATERIALS AND SCHEDULE

A. See Exhibit "A", "Schedule of Piping Materials" at end of this Section for (Plumbing) piping.

B. See Exhibit "B", "Testing" at end of this Section.

PART 3 - EXECUTION

3.1 EQUIPMENT AND SYSTEMS

A. Install equipment and systems in accordance with provisions of each applicable Section of these Specifications, and Local/State Codes/Regulations having jurisdiction. Accurately establish grade and elevation of piping before setting sleeves. Install piping

without springing or forcing, except where specifically called for, making proper allowance for expansion and anchoring. Changes in sizes shall be made with reducing fittings. Reducing couplings are not acceptable. Arrange piping at equipment with necessary offsets, unions, flanges, and valves, to allow for easy part removal and maintenance. Offset piping and change elevation as required to coordinate with other work. Avoid contact with other mechanical or electrical systems. Provide adequate means of draining and venting units, risers, circuits and systems. Cap or plug equipment and pipe openings during construction. Install piping parallel with lines of building, properly spaced to provide clearance for insulation. Make changes in direction and branch connections with fittings. Do not install valves, unions and flanges in inaccessible locations. Materials within a system and between systems shall be consistent. If this is not possible, install dielectric fittings.

3.2 PIPING OVER ELECTRICAL EQUIPMENT

- A. Contractor shall route piping to avoid installation directly over electric equipment, including, but not limited to panels, transformers, disconnects, starters, motor control center, adjustable speed drives and fused switches.
- B. Piping shall not be installed in the dedicated electric and working space as defined by NEC 110. Dedicated electrical space is generally equal to the depth and width of electrical equipment, and extends 6 ft. above the electrical equipment, or to a structural ceiling. Dedicated working space is a minimum of 30 in. wide or the width of equipment (whichever is larger) a minimum of 6 ft.-6 in. tall, with a depth of 3ft. to 9 ft. depending on the voltage.

3.3 HANGERS, INSERTS AND SUPPORTS

- A. Piping shall not be supported by wires, band iron, chains, from other piping, or by vertical expansion bolts. Support piping with individual hangers from concrete inserts, wood construction, welded supports, or beams clamps of proper configuration and loading design requirements for each location; replace if not suitable. Follow manufacturer's safe loading recommendations. Suspend with rods of sufficient length for swing and of size called for, using four (4) nuts per rod. Provide additional structural steel members, having one coat rustproof paint, where required for proper support. Provide oversized hangers where insulation/supports must pass between pipe and hanger. Provide continuous support or extra supports for plastic piping per manufacturer's requirements. Hangers, when attached to joists, shall only be placed at the top or bottom chord panel point. Only concentric type hangers are permissible on piping larger than 2-1/2 in.; "C" types are permitted for piping 2 in. and smaller on joists. Provide riser clamps for each riser at each floor. Use trapeze hangers where a group of piping can be installed.
- B. Provide a pipe support within 12 inches of pipe unions and piping connections to equipment, in order to facilitate disconnections of piping without pipe sagging.

3.4 PIPE CONNECTIONS

A. Steel Press Connections:

1. Natural Gas Systems: Sealing elements shall be verified for the intended use. Pipe ends shall be cut on a right angle (square) to the pipe. Pipe ends shall be reamed and all paint, lacquer, grease, oil, and dirt shall be removed from the pipe end with an abrasive cloth, or with a Ridgid MegaPress pipe end prep tool. Visually examine each fitting sealing element to ensure there is no damage. Insert the pipe fully into the fitting and mark the pipe wall at the face of the fitting. Always examine the pipe to ensure it is fully inserted into the fitting prior to pressing the joint. Steel Press fittings shall be installed using Ridgid, MegaPress Tools. Steel Press fittings shall be installed according to the most current edition of the manufacturer's installation guidelines. Installers shall be trained by a manufacturer representative on proper installation procedures.
2. Testing: After Steel Press fittings have been installed a "two step test" shall be followed. Utilizing air or, dry nitrogen, pressurize the system between 5 psi and 45 psi. Check the pressure gauge for pressure loss. If the system does not hold pressure, inspect entire system and check for un-pressed fittings. Should un-pressed fittings be identified, ensure the pipe is fully inserted into the fitting and properly marked prior to pressing the joint. After appropriate repairs have been made, test the system per local code, or specification requirements, not to exceed 200 psig.

B. Threaded Connections: Clean out tapering threads, made up with pipe dope; screwed until tight connection. Pipe dope must be specifically selected for each application.

C. Flanged Joints: Select appropriate gasket material, size, type and thickness for service applications. Install gasket concentrically positioned. Use suitable lubricants on bolt threads.

D. Dielectric Pipe Fittings: Provide dielectric unions at ALL equipment connections where dissimilar metals meet. In addition, provide dielectric unions in all open type piping systems (condensing water, domestic water, etc.) where dissimilar metals are to be joined.

3.5 WELDING

A. Welding shall be performed in compliance with the welding procedure specifications prepared by the National Certified Pipe Welding Bureau. Welded pipe fabricated by certified welder. Contractor shall submit proof of current certification of each welder if requested by Owner. Use full-length pipe where possible; minimum distance between welds, 18 in. on straight runs. Welds must be at least full thickness of pipe inside smooth and remove cutting beads, slag and excess material at joints; chamfer ends. Minimum gap 1/8 in., maximum 1/4 in., for butt welds. Overlaps on position and bench welds to be not less than 3/4 in. One internal pass and one external pass minimum required on slip-on flanges. Do not apply heat to rectify distorted pipe due to concentrated welding; replace distorted pipe.

B. When welding galvanized pipe, apply cold galvanizing on joint following welding.

3.6 SLEEVES

- A. Provide for pipes passing through floors, walls or ceilings. Not required for floors that are core-drilled, except where floor is waterproofed.
- B. Sleeves shall be as small as practical, consistent with insulation, so as to preserve fire rating.

3.7 TESTS

- A. Refer to Exhibit "B" at the end of this section for testing of Plumbing Systems.
- B. Provide all necessary items to complete proper testing of work. Perform all testing in accordance with governing Codes, local utilities and other agencies having jurisdiction and as specified. Pay all costs to perform tests. Perform all testing in a safe manner. Isolate existing systems.

3.8 PIPE LINE SIZING

- A. Pipe sizes called for are to be maintained. Pipe size changes made only as reviewed by Owner's Representative. Where discrepancy in size occurs, the larger size shall be provided.

EXHIBIT "A" - PIPING MATERIALS (PLUMBING)

<u>SERVICE</u>	<u>PIPE MATERIALS</u>	<u>FITTINGS</u>	<u>CONNECTIONS</u>
Natural gas (exterior above grade)	Schedule 40, black steel	Butt welded steel	Welded
	Schedule 40, black steel	Malleable iron, 2 in. and smaller	Threaded
	Schedule 40, black steel	Steel with zinc/nickel coating	Press fit
Natural gas (interior)	Schedule 40, black steel	Malleable iron, 2 in. and smaller	Threaded
	Schedule 40, black steel	Butt welded steel, 2-1/2 in. and larger	Welded

EXHIBIT "B" - TESTING

SERVICE

Natural gas

TEST REQUIREMENTS

Refer to Section 227010 - "Natural Gas Systems".

END OF SECTION

SECTION 227010
NATURAL GAS SYSTEMS

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. Provide labor, materials, equipment and services to perform operations required for the complete installation and related Work as required in Contract Documents.

1.2 SUBMITTALS

- A. Provide manufacturer's data sheets and installation instructions for all equipment and accessories in this section in accordance with Basic Mechanical/Electrical Requirements and Division 01.

1.3 QUALITY ASSURANCE

- A. Follow all requirements, recommendations, and appendices to comply with the following publications, codes, standards, and listings:
 - 1. 2020 Fuel Gas Code of New York State.
 - 2. American Gas Association.
 - 3. Orange and Rockland Utilities, Inc. (ORU)
- B. Provide equipment and accessories that are listed and labeled by a nationally recognized testing laboratory.

1.4 GAS SERVICE

- A. The cost of this work shall be included in this Contractor's bid.
- B. The existing gas service will be reused. Contact ORU as required. Existing gas meter assembly will be upgraded to meet new gas demand incurred with the addition of the new gas fired emergency generator.

1.5 GAS PRESSURE

- A. The maximum allowable gas pressure inside the building is 1/2 psi.

PART 2 - PRODUCTS

2.1 GAS PIPING

- A. Piping Materials: Refer to Specification Section 221010, "Piping Systems and Accessories"

- B. All exposed exterior and interior piping shall be primed and painted with one coat of alkyd primer and two coats of exterior acrylic latex gloss enamel. Color shall be as selected.

2.2 VALVES

- A. Refer to Specification Section 220523, "Valves".

2.3 FLEXIBLE CONNECTORS

- A. Stainless steel construction and in accordance with ANSI Z21.24.

PART 3 - EXECUTION

3.1 ARRANGEMENTS

- A. Make arrangements with Orange and Rockland Utilities, Inc. (ORU) to provide the gas service and meter at the indicated location.
- B. Contact the utility company for the cost of the service, its fees and required permits. Pay all costs and include within the base bid.
- C. The service load is approx. 3400 Btuh. The pressure at the meter outlet shall be set at 7-11 in. wc.
- D. Coordinate all service requirements with the utility company.
- E. The contractor shall arrange for the plumbing inspector to inspect the gas piping and vent installations upon completion including underground and rough-ins, as well as installation of gas-fired appliances

3.2 GAS DISTRIBUTION SYSTEM

- A. Provide distribution system from gas meter outlet, mains, risers, branches, drips, shut-offs and other required parts. Connect to equipment indicated or specified as requiring gas for their operation.
- B. Furnish sleeve and sealing element for above ground gas piping entry through outside wall. Make entry gas and watertight.
- C. Provide distribution system from existing piping, including mains, risers, branches, drips, shut-offs and other required parts. Connect to appliances indicated or specified as requiring gas for their operation.

3.3 PIPING INSTALLATION

- A. Install gas piping at a uniform slope of 1/4 in. in 15 ft. to prevent traps. Horizontal lines shall slope upward to risers to the equipment.

- B. Drips and Sediment Traps: Install drips at points where condensate may collect. Locate where readily accessible to permit cleaning and emptying. Do not install where condensate would be subject to freezing. The sediment trap shall be installed in the gas supply line to gas fired equipment. The trap shall be a tee fitting having a threaded capped nipple installed vertically in the bottom most opening of the tee.
- C. Make reductions in pipe sizes using eccentric reducer fittings installed with the level side down. Connect branch piping from top or side of horizontal piping.
- D. Install unions in pipes 2 in. and smaller, adjacent to each valve, regulator and at final connection to each piece of equipment. Unions are not required on flanged devices.

3.4 WELDING

- A. Welding shall be performed in compliance with the welding procedure specifications prepared by the National Certified Pipe Welding Bureau. Welded pipe fabricated by certified welder. Contractor shall submit proof of current certification of each welder if requested by the Owner. Use full-length pipe where possible; minimum distance between welds, 18 in. on straight runs. Welds must be at least full thickness of pipe with inside smooth; remove cutting beads, slag and excess material at joints; chamfer ends. Minimum gap 1/8 in., maximum 1/4 in. for butt welds. Overlaps on position and bench welds to be not less than 3/4 in. One internal pass and one external pass minimum required on slip-on flanges. Do not apply heat to rectify distorted pipe due to concentrated welding; replace distorted pipe. Exercise caution to prevent heat related damage to plastic parts within the gas meter or regulators.
- B. Welder qualifications: Welded piping fabricated by certified welder. Welder shall be certified under ASME or API Code III.

3.5 CONNECTIONS

- A. Install gas piping next to gas-utilizing equipment and appliances for servicing and maintenance. Connect gas piping to gas-utilizing equipment and appliances with shutoff valves and unions. Make connections to equipment downstream of valves and unions with flexible connectors. Valves, unions and flexible connectors shall be same size as the gas supply piping to the equipment.
- B. Install a gas valve upstream within 6 ft. of each gas-utilizing appliance. Install a union connection downstream from the valve to permit removal of controls.
- C. Sediment Traps: Install full size threaded tee fittings forming drips, as close as practical to gas appliance inlets. Cap or plug bottom outlet.

3.6 GAS PIPING TESTS

- A. Test natural gas systems according to 2020 Fuel Gas Code of New York State and the local utility requirements unless otherwise noted:
 - 1. Test pressure shall be 15 psi for one (1) hour for steel piping.

- B. Tests shall be witnessed by utility company. Make arrangements, provide all necessary items to complete testing and pay all costs.
- C. All tests shall be performed prior to the connection of equipment. Regulator shall be isolated from test pressures. Soap test shall be conducted on all joints. Repair leaks and defects with new materials. Retest system until satisfactory results are obtained.
- D. Verify correct pressure settings for pressure regulators.
- E. Provide written certification that tests have been conducted and satisfactorily completed. Submit to Owner's Representative.

3.7 GAS LINE PURGING

- A. At completion of pressure test, purge all natural gas systems according to 2020 Fuel Gas Code of New York State and the utility company requirements.
- B. Provide three (3) days notice to utility company to have the meter unlocked for service and equipment start up. Make all arrangements and pay all fees as required by the Utility Company.

END OF SECTION

SECTION 260500
BASIC ELECTRICAL REQUIREMENTS

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. Provide all labor, tools, materials, accessories, parts, transportation, taxes, and related items, essential for installation of the work and necessary to make work, complete, and operational. Provide new equipment and material unless otherwise called for. References to codes, specifications and standards called for in the specification sections and on the drawings mean, the latest edition, amendment and revision of such referenced standard in effect on the date of these contract documents. All materials and equipment shall be installed in accordance with the manufacturer's recommendations.

1.2 LICENSING

- A. The Contractor shall hold a license to perform the work as issued by the authority having jurisdiction.
- B. Plumbing contract work shall be performed by, or under, the direct supervision of a licensed master plumber.
- C. Electrical contract work shall be performed by, or under, the direct supervision of a licensed electrician.

1.3 PERMITS

- A. Apply for and obtain all required permits and inspections, pay all fees and charges including all service charges. Provide certificate of approval from the Authorities Having Jurisdiction prior to request for final payment.
- B. Provide electrical inspection certificate of approval from Middle Department Inspection Agency, Commonwealth Inspection Agency, or an Engineer approved Inspection Agency prior to request for final payment.

1.4 CODE COMPLIANCE

- A. Provide work in compliance with the following:
 - 1. 2020 Building Code of New York State.
 - 2. 2020 Existing Building Code of New York State.
 - 3. 2020 Fire Code of New York State.
 - 4. 2020 Plumbing Code of New York State.
 - 5. 2020 Mechanical Code of New York State.
 - 6. 2020 Fuel Gas Code of New York State.

7. 2020 Property Maintenance Code of New York State.
8. 2020 Energy Conservation Code of New York State.
9. Accessible and Usable Buildings and Facilities, ICC A117.1 (2009).
10. New York State Department of Labor Rules and Regulations.
11. New York State Department of Health.
12. National Electrical Code (NEC) (current edition in effect at project location).
13. Occupational Safety and Health Administration (OSHA).
14. Local Codes and Ordinances.
15. Life Safety Code, NFPA 101.
16. New York State Education Department Manual of Planning Standards.

1.5 GLOSSARY

ACI	American Concrete Institute
AGA	American Gas Association
AGCA	Associated General Contractors of America, Inc.
AIA	American Institute of Architects
AISC	American Institute of Steel Construction
AFBMA	Anti-Friction Bearing Manufacturer's Association
AMCA	Air Moving and Conditioning Association, Inc.
ANSI	American National Standards Institute
ARI	Air Conditioning and Refrigeration Institute
ASHRAE	American Society of Heating, Refrigerating and Air Conditioning Engineers, Inc.
ASME	American Society of Mechanical Engineers
ASPE	American Society of Plumbing Engineers
ASTM	American Society for Testing Materials
AWSC	American Welding Society Code
AWWA	American Water Works Association
FM	Factory Mutual Insurance Company
IBR	Institute of Boiler & Radiation Manufacturers
IEEE	Institute of Electrical and Electronics Engineers
IRI	Industrial Risk Insurers

NEC	National Electrical Code
NEMA	National Electrical Manufacturer's Association
NESC	National Electrical Safety Code
NFPA	National Fire Protection Association
NYS/DEC	New York State Department of Environmental Conservation
SBI	Steel Boiler Institute
SMACNA	Sheet Metal and Air Conditioning Contractors National Association
UFPO	Underground Facilities Protective Organization
UL	Underwriter's Laboratories, Inc.
OSHA	Occupational Safety and Health Administration
XL - GAP	XL Global Asset Protection Services

1.6 DEFINITIONS

Acceptance	Owner acceptance of the project from Contractor upon certification by Owner's Representative.
As Specified	Materials, equipment including the execution specified/shown in the contract documents.
Basis of Design	Equipment, materials, installation, etc. on which the design is based. (Refer to the article, Equipment Arrangements, and the article, Substitutions.)
Code Requirements	Minimum requirements.
Concealed	Work installed in pipe and duct shafts, chases or recesses, inside walls, above ceilings, in slabs or below grade.
Coordination Drawings	Show the relationship and integration of different construction elements and trades that require careful coordination during fabrication or installation, to fit in the space provided or to function as intended.
Delegated-Design Services	Performance and Design criteria for Contractor provided professional services. Where professional design services or certifications by a design professional are specifically required of a Contractor, by the Contract Documents. Provide products and systems with the specific design criteria indicated. If criteria indicated is insufficient to perform services or certification required, submit a written request for additional information to the Engineer. Submit wet signed and sealed certification by the licensed design professional for each product and system specifically assigned to the Contractor to be designed or certified by a design professional. Examples: structural maintenance ladders, stairs and platforms, pipe anchors, seismic compliant system, wind, structural supports for material equipment, sprinkler hydraulic calculations.
Equal, Equivalent, Equal To, Equivalent	Shall all be interpreted and should be taken to mean "to the satisfaction of the Engineer".

To, As Directed and As Required	
Exposed	Work not identified as concealed.
Extract	Carefully dismantle and store where directed by Owner's Representative and/or reinstall as indicated on drawings or as described in specifications.
Furnish	Purchase and deliver to job site, location as directed by the Owner's Representative.
Inspection	Visual observations by Owner's site Representative.
Install	Store at job site if required, proper placement within building construction including miscellaneous items needed to affect placement as required and protect during construction. Take responsibility to mount, connect, start-up and make fully functional.
Labeled	Refers to classification by a standards agency.
Manufacturers	Refer to the article, Equipment Arrangements, and the article, Substitutions.
Prime Professional	Architect or Engineer having a contract directly with the Owner for professional services.
Product Data	Illustrations, standard schedules, performance charts, instructions, brochures, wiring diagrams, finishes, or other information furnished by the Contractor to illustrate materials or equipment for some portion of the work.
Provide (Furnish and Install)	Contractor shall furnish all labor, materials, equipment and supplies necessary to install and place in operating condition, unless otherwise specifically stated.
Relocate	Disassemble, disconnect, and transport equipment to new locations, then clean, test, and install ready for use.
Remove	Dismantle and take away from premises without added cost to Owner, and dispose of in a legal manner.
Review and Reviewed	Should be taken to mean to be followed by "for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents".
Roughing	Pipe, duct, conduit, equipment layout and installation.
Samples	Physical full scale examples which illustrate materials, finishes, coatings, equipment or workmanship, and establishes standards by which work will be judged.
Satisfactory	As specified in contract documents.
Shop Drawings	Fabrication drawings, diagrams, schedules and other instruments, specifically prepared for the work by the Contractor or a Sub-contractor, manufacturer, supplier or distributor to illustrate some portion of the work.
Site Representative	Owner's Inspector or "Clerk of Works" at the work site.
Submittals Defined (Technical)	Any item required to be delivered to the Engineer for review as requirement of the Contract Documents. The purpose of technical submittals is to demonstrate for those portions of the

work for which a submittal is required, the manner in which the Contractor proposes to conform to the information given and design concepts expressed and required by the Contract Documents.

1.7 EXISTING CONDITIONS

- A. Contractor shall review all available record documents of existing construction or other existing conditions and hazardous material information. Owner does not guarantee that existing conditions are the same as those indicated in these documents. Contractor shall record existing conditions via measured drawings and preconstruction photographs or video. Inventory and record the condition of items to be removed and salvaged. Provide photographs or video of conditions that might be misconstrued as damage caused by salvage, removal or construction operations.
- B. Owner will occupy portions of the building immediately adjacent to the area(s) of removals. Conduct removals so Owner's operations are not disrupted. Contractor shall locate, identify, disconnect and seal or cap mechanical, plumbing, fire protection and/or electrical systems serving areas of removals, unless noted otherwise in the contract documents. Contractor shall arrange shut-down of systems with the Architect. Piping and ductwork indicated to be removed shall be removed and capped or plugged with compatible materials. If services/systems are required to be removed, relocated or abandoned, provide temporary services/systems the bypass area(s) of removals to maintain continuity of services/systems to other parts of the building, as required.

1.8 SHOP DRAWINGS/PRODUCT DATA/SAMPLES

- A. Provide submittals on all items of equipment and materials to be furnished and installed. Submittals shall be accompanied by a transmittal letter, stating name of project and contractor, name of vendor supplying equipment, number of drawings, titles, specification sections (name and number) and other pertinent data called for in individual sections. Submittals shall have individual cover sheets that shall be dated and contain: Name of project; name of prime professional; name of prime contractor; description or names of equipment, materials and items; and complete identification of locations at which materials or equipment are to be installed. Individual piecemeal or incomplete submittals will not be accepted. Similar items, (all types specified) shall be submitted at under one cover sheet per specification section (e.g. lighting fixtures, valves, plumbing fixtures, etc.). Submittals shall include all required documentation for each product listed in the specification section at the same time as a complete package. Number each submittal by trade. Indicate deviations from contract requirements on Letter of Transmittal. Submittals will be given a general review only. Corrections or comments made on the Submittals during the review do not relieve Contractor from compliance with requirements of the drawings and specifications. The Contractor is responsible for: confirming and correcting all quantities; checking electrical characteristics and dimensions; selecting fabrication processes and techniques of construction; coordinating his work with that of all other trades; and performing his work in a safe and satisfactory manner. If submitting hard copies, submit four (4) copies for review.
- B. The Engineer will review up to two (2) submissions of any single submittal. The Contractor will be invoiced on an hourly rate basis for the time spent reviewing the same shop drawing in excess of twice.

- C. If submittals are to be submitted electronically, all requirements in Item A apply. Submittals shall be emailed in PDF format to specific email address provided by the Construction Manager, General Contractor, Architect or Project Manager. Name of project shall be in subject line of email. Send emails to mealbasubmittalclerk@meengineering.com
- D. Refer to Division 01 for additional requirements.

1.9 PROTECTION OF PERSONS AND PROPERTY

- A. Contractor shall assume responsibility for construction safety at all times and provide, as part of contract, all trench or building shoring, scaffolding, shielding, dust/fume protection, mechanical/electrical protection, special grounding, safety railings, barriers, and other safety feature required to provide safe conditions for all workmen and site visitors.

1.10 EQUIPMENT ARRANGEMENTS

- A. The contract documents are prepared using one manufacturer as the Basis of Design, even though other manufacturers' names are listed. If Contractor elects to use one of the listed manufacturers other than Basis of Design or if the physical size, performance or electrical characteristics for the Basis of Design equipment differs from what is indicated in the contract documents, submit detailed drawings, indicating proposed installation of equipment. Show maintenance clearances, service removal space required, and other pertinent revisions to the design arrangement. Make required changes in the work of other trades, at no increase in any contract. Provide larger motors, feeders, breakers, and equipment, additional control devices, valves, fittings and other miscellaneous equipment required for proper operation, and assume responsibility for proper location of roughing and connections by other trades. Remove and replace doorframes, access doors, walls, ceilings, or floors required to install. If revised arrangement submittal is rejected, revise and resubmit specified Basis of Design item which conforms to Contract Documents.

1.11 SUBSTITUTIONS

- A. Refer to Division 01 for additional requirements.

1.12 UTILITY COMPANY SERVICES

- A. Division 26 shall make arrangements with Orange and Rockland for electric service to the Owner's distribution equipment. Provide underground or overhead electric service as called for and transformers, meter sockets or meter compartments as required by the Utility Company. Coordinate all activities between the Owner and Utility Company. The installation of the electric service shall comply with the published Utility Company standards. **PAY ALL UTILITY COMPANY CHARGES; INCLUDE CHARGES IN THE BASE BID.**
- B. Division 22 shall make arrangements with Orange and Rockland for gas service to the Owner's distribution system. Provide service to the building as required by the Utility Company. Coordinate all activities between the Owner and Utility Company. The installation of the gas service shall comply with the published Utility Company standards.

PAY ALL UTILITY COMPANY CHARGES; INCLUDE CHARGES IN THE BASE BID.

1.13 ROUGHING

- A. The Contract Drawings have been prepared in order to convey design intent and are diagrammatic only. Drawings shall not be interpreted to be fully coordinated for construction.
- B. Due to small scale of Drawings, it is not possible to indicate all offsets, fittings, changes in elevation, interferences, etc. Make necessary changes in contract work, equipment locations, etc., as part of a contract to accommodate work to avoid obstacles and interferences encountered. Before installing, verify exact location and elevations at work site. **DO NOT SCALE** plans. If field conditions, details, changes in equipment or shop drawing information require an important rearrangement, report same to Owner's Representative for review. Obtain written approval for all major changes before installing.
- C. Install work so that items both existing and new are operable and serviceable. Eliminate interference with removal of coils, motors, filters, belt guards and/or operation of doors. Provide easy, safe, and code mandated clearances at controllers, motor starters, valve access, and other equipment requiring maintenance and operation. Provide new materials, including new piping and insulation for relocated work.
- D. Coordinate work with other trades and determine exact route or location of each duct, pipe, conduit, etc., before fabrication and installation. Coordinate with Architectural Drawings. Obtain from Owner's Representative exact location of all equipment in finished areas, such as thermostat, fixture, and switch mounting heights, and equipment mounting heights. Coordinate all work with the architectural reflected ceiling plans and/or existing Architecture. Mechanical and electrical drawings show design arrangement only for diffusers, grilles, registers, air terminals, lighting fixtures, sprinklers, speakers, and other items. Do not rough-in contract work without reflected ceiling location plans.
- E. Before roughing for equipment furnished by Owner or in other Divisions, obtain from Owner and other Divisions, approved roughing drawings giving exact location for each piece of equipment. Do not "rough in" services without final layout drawings approved for construction. Cooperate with other trades to insure proper location and size of connections to insure proper functioning of all systems and equipment. For equipment and connections provided in this contract, prepare roughing drawing as follows:
 - 1. Existing Equipment: Measure the existing equipment and prepare for installation in new location.
 - 2. New Equipment: Obtain equipment roughing drawings and dimensions, then prepare roughing-in-drawings. If such information is not available in time, obtain an acknowledgement in writing, then make space arrangements as required with Owner's Representative.

1.14 REMOVAL WORK

- A. Where existing equipment removals are called for, submit complete list to Owner's Representative. All items that Owner wishes to retain that do not contain asbestos or PCB material shall be delivered to location directed by Owner. Items that Owner does not wish to retain shall be removed from site and legally disposed of. Removal and disposal of material containing asbestos, lead paint, mercury and PCB's shall be in accordance with Federal, State and Local law requirements. Where equipment is called for to be relocated, contractor shall carefully remove, clean and recondition, then reinstall. Remove all abandoned piping, wiring, equipment, lighting, ductwork, tubing, supports, fixtures, etc. Visit each room, crawl spaces, and roofs to determine total Scope of Work. The disturbance or dislocation of asbestos-containing materials causes asbestos fibers to be released into the building's atmosphere, thereby creating a health hazard to workmen and building occupants. Consistent with Industrial Code Rule 56 and the content of recognized asbestos-control work, the Contractor shall apprise all of his workers, supervisory personnel, subcontractors, Owner and Consultants who will be at the job site of the seriousness of the hazard and of proper safeguards and work procedures which must be followed, as described in New York State Department of Labor Industrial Code Rule 56.
- B. For materials indicated to contain lead, that are being affected by demolition or construction, the contractor shall comply with all Federal, State and Local law requirements regarding worker exposure to lead disturbance and abatement procedures.
- C. Refer to the Owner's Lead Paint Survey. The Survey identifies the surfaces within the buildings that were tested for lead by collecting paint samples and performing laboratory analysis. If any unidentified surfaces are to be impacted the lead content shall be tested by analytical determinations conducted by a qualified laboratory approved by the Owner. The contractor shall review the current owner's lead paint reports on file before starting any work which may disturb existing surfaces.

1.15 EQUIPMENT AND MATERIAL REQUIREMENTS

- A. Provide materials that meet the following minimum requirements:
 - 1. Materials shall have a flame spread rating of 25 or less and a smoke developed rating of 50 or less, in accordance with NFPA 255.
 - 2. All equipment and material for which there is a listing service shall bear a UL label.
 - 3. Potable water systems and equipment shall be built according to AWWA Standards.
 - 4. Gas-fired equipment and system shall meet AGA Regulations and shall have AGA label.
 - 5. All electrical equipment and systems, as a whole, shall be tested and listed by an OSHA approved Nationally Recognized Testing Laboratory (NRTL) for the intended use in accordance with the applicable standards and have a physical label indicating such.

6. Fire protection equipment shall be UL listed and FM approved.
- B. Exterior and wet locations shall utilize materials, equipment supports, mounting, etc. suitable for the intended locations. Metals shall be stainless steel, galvanized or with baked enamel finish as a minimum. Finishes and coatings shall be continuous and any surface damaged or cut ends shall be field corrected in accordance with the manufacturer's recommendations. Hardware (screws, bolts, nuts, washers, supports, fasteners, etc.) shall be:
1. Stainless steel where the associated system or equipment material is stainless steel or aluminum.
 2. Hot dipped galvanized or stainless steel where the associated system or equipment is steel, galvanized steel or other.

1.16 CUTTING AND PATCHING

- A. Each trade shall include their required cutting and patching work unless shown as part of the General Construction Contract. Refer to General Conditions of the Contract for Construction, for additional requirements. Cut and drill from both sides of walls and/or floors to eliminate splaying. Patch cut or abandoned holes left by removals of equipment or fixtures. Patch adjacent existing work disturbed by installation of new work including insulation, walls and wall covering, ceiling and floor covering, other finished surfaces. Patch openings and damaged areas equal to existing surface finish. Cut openings in prefabricated construction units in accordance with manufacturer's instructions.

1.17 PAINTING

- A. Paint all insulated and bare piping, pipe hangers and supports exposed to view in mechanical equipment rooms, penthouse, boiler rooms and similar spaces. Paint all bare piping, ductwork and supports exposed to the out-of-doors with rust inhibiting coatings. Paint all equipment that is not factory finish painted (i.e. expansion tanks, etc.).
- B. All painting shall consist of one (1) prime coat and two (2) finish coats of non-lead oil base paint, unless otherwise indicated herein. Provide galvanized iron primer for all galvanized surfaces. All surfaces must be thoroughly cleaned before painting. Review system color coding prior to painting with the Owner's Representative or Architect.
- C. All items installed after finished painting is completed and any damaged factory finish paint on equipment furnished under this contract must be touched up by the Contractor responsible for same.
- D. Include painting for patchwork with color to match adjacent surfaces. Where color cannot be adequately matched, paint entire surface. Provide one (1) coat of primer and two (2) finish coats or as called for in the Specifications.
- E. All primers and paint used in the interior of the building shall comply with the maximum Volatile Organic Compound (VOC) limits called for in the current version of U.S. Green Building Council LEED Credits EQ 4.1 and EQ 4.2.

1.18 CONCEALMENT

- A. **Conceal all contract work** above ceilings and in walls, below slabs, and elsewhere throughout building. If concealment is impossible or impractical, notify Owner's Representative before starting that part of the work and install only after their review. In areas with no ceilings, install only after Owner's Representative reviews and comments on arrangement and appearance.

1.19 PENETRATION FIRESTOPPING

- A. Fire-Stopping for Openings Through Fire and Smoke Rated Wall and Floor Assemblies:
 - 1. Provide materials and products listed or classified by an approved independent testing laboratory for "Penetration Fire-Stop Systems". The system shall meet the requirements of "Fire Tests of Penetrations Fire-Stops" designated ASTM E814.
 - 2. Provide fire-stop system seals at all locations where piping, tubing, conduit, electrical busways/cables/wires, ductwork and similar utilities pass through or penetrate fire rated wall or floor assembly. Provide fire-stop seal between sleeve and wall for drywall construction.
 - 3. The minimum required fire resistance ratings of the wall or floor assembly shall be maintained by the fire-stop system. The installation shall provide an air and watertight seal.
 - 4. The methods used shall incorporate qualities which permit the easy removal or addition of electrical conduits or cables without drilling or use of special tools. The product shall adhere to itself to allow repairs to be made with the same material and permit the vibration, expansion, and/or contraction of any items passing through the penetration without cracking, crumbling and resulting reduction in fire rating.
 - 5. Plastic pipe/conduit materials shall be installed utilizing intumescent collars.
 - 6. Provide a submittal including products intended for use, manufacturer's installation instructions, and the UL details for all applicable types of wall and floor penetrations.
 - 7. Fire-stopping products shall not be used for sealing of penetrations of non-rated walls or floors.
 - 8. Piping insulation is allowed to be reduced in thickness only when a specific UL assembly detail for piping passing thru a rated wall indicates a maximum insulation thickness that is less than the insulation specification section calls for. In this case reduce the insulation thickness just for the rated wall penetration. The reduction of insulation thickness shall be limited to the length of the penetration only.

B. Acceptable Manufacturers:

1. Dow Corning Fire-Stop System Foams and Sealants.
2. Nelson Electric Fire-Stop System Putty, CLK and WRP.
3. S-100 FS500/600, Thomas & Betts.
4. Carborundum Fyre Putty.
5. 3-M Fire Products.
6. Hilti Corporation.

1.20 NON-RATED WALL PENETRATIONS

- A. Each trade shall be responsible for sealing wall penetrations related to their installed work, including but not limited to ductwork, piping, conduits, etc. See individual specification sections for requirements.

1.21 SUPPORTS

- A. Provide required supports, beams, angles, hangers, rods, bases, braces, and other items to properly support contract work. Modify studs, add studs, add framing, or otherwise reinforce studs in metal stud walls and partitions as required to suit contract work. If necessary, in stud walls, provide special supports from floor to structure above.
- B. For precast panels/planks and metal decks, support mechanical/electrical work as determined by manufacturer and the Engineer. Provide heavy gauge steel mounting plates for mounting contract work. Mounting plates shall span two or more studs. Size, gauge, and strength of mounting plates shall be sufficient for equipment size, weight, and desired rigidity.
- C. For finished areas without a finished ceiling system such as classrooms, offices, conference rooms, etc., where decking and structure is exposed, and ductwork/piping/conduit is exposed: All mounting brackets, channel support systems and mounting hardware for ductwork, piping, lighting, etc. shall be concealed and approved by the Architect/Engineer prior to the installation. AirCraft cable style hanging for ductwork is required. It is recommended that room mockups be done and receive Architect/Engineer approval prior to proceeding with installation.
- D. Equipment, piping, conduit, raceway, etc. supports shall be installed to minimize the generation and transmission of vibration.
- E. Materials and equipment shall be solely supported by the building structure and connected framing. Gypboard, ceilings, other finishes, etc. shall not be used for support of materials and equipment.

1.22 ACCESS PANELS

- A. Provide access panels for required access to respective trade's work. Location and size shall be the responsibility of each trade. Access panels provided for equipment shall provide an opening not smaller than 22 in. by 22 in. Panels shall be capable of opening a minimum of 90 degrees. Bear cost of construction changes necessary due to improper information or failure to provide proper information in ample time. Access panels over 324 square inches shall have two cam locks. Provide proper frame and door type for various wall or ceiling finishes. Access panels shall be equal to "Milcor" as manufactured by Inland Steel Products Co., Milwaukee, Wisconsin. Provide General Construction trade with a set of architectural plans with size and locations of access panels.

1.23 CONCRETE BASES

- A. Provide concrete bases for all floor mounted equipment. Provide 3,000 lb. concrete, chamfer edges, trowel finish, and securely bond to floor by roughening slab and coating with cement grout. Bases 4 in. high (unless otherwise indicated); shape and size to accommodate equipment. Provide anchor bolts in equipment bases for all equipment provided for the project, whether mounted on new concrete bases or existing concrete bases.

1.24 PLUMBING EQUIPMENT CONNECTIONS

- A. Contractor is responsible for draining, filling, venting, chemically treating and restarting any systems which are affected by work shown on the Contract Documents unless specifically noted otherwise.
- B. Provide roughing and final gas connections to all equipment. Provide loose key stops, sanitary "P" traps, tailpiece, adapters, gas or air cocks, and all necessary piping and fittings from roughing point to equipment. Provide installation of sinks, faucets, traps, tailpiece furnished by others. Provide cold water line with gate valve and backflow prevention device at locations called for. Provide continuation of piping and connection to equipment that is furnished by others. Provide relief valve discharge piping from equipment relief valves.
- C. Provide valved water outlet adjacent to equipment requiring same. Provide equipment type floor drains, or drain hubs, adjacent to equipment.
- D. Install controls and devices furnished by others.
- E. Refer to Contract Documents for roughing schedules, and equipment and lists indicating scope of connections required.
- F. Provide for Owner furnished and Contractor furnished equipment all valves, piping, piping accessories, traps, pressure reducing valves, gauges, relief valves, vents, drains, as required.

1.25 ELECTRICAL EQUIPMENT CONNECTIONS

- A. Provide complete power connections to all electrical equipment. Provide control connections to equipment. Heavy duty NEC rated disconnect ahead of each piece of equipment. Ground all equipment in accordance with NEC.
- B. Provide for Owner furnished and Contractor furnished equipment all power wiring, electric equipment, control wiring, switches, lights, receptacles, and connections as required.

1.26 STORAGE AND PROTECTION OF MATERIALS AND EQUIPMENT

- A. Store Materials on dry base, at least 6 in. aboveground or floor. Store so as not to interfere with other work or obstruct access to buildings or facilities. Provide waterproof/windproof covering. Remove and provide special storage for items subject to moisture damage. Protect against theft or damage from any cause. Replace items stolen or damaged, at no cost to Owner.
- B. Refer to Division 01 for additional information.

1.27 FREEZING AND WATER DAMAGE

- A. Take all necessary precautions with equipment, systems and building to prevent damage due to freezing and/or water damage. Repair or replace, at no change in contract, any such damage to equipment, systems, and building. Perform first seasons winterizing in presence of Owner's operating staff.

1.28 OWNER INSTRUCTIONS

- A. Before final acceptance of the work, furnish necessary skilled labor to operate all systems by seasons. Instruct designated person on proper operation, and care of systems/equipment. Repeat instructions, if necessary. Obtain written acknowledgement from person instructed prior to final payment. Contractor is fully responsible for system until final acceptance, even though operated by Owner's personnel, unless otherwise agreed in writing. List under clear plastic, operating, maintenance, and starting precautions procedures to be followed by Owner for operating systems and equipment.

1.29 OPERATION AND MAINTENANCE MANUALS

- A. Submit by email (preferred) or digital media, thru the normal project submittal process. Include a copy of each final approved Shop Drawing, wiring diagrams, piping diagrams, spare parts lists, final testing and balancing report, as-built drawings and manufacturer's instructions. Include typewritten instructions, describing equipment, starting/operating procedures, emergency operating instructions, summer-winter changeover, freeze protection, precautions and recommended maintenance procedures. Include name, address, and telephone number of installing contractor and of supplier manufacturer Representative and service agency for all major equipment items. Provide a table of contents page and dividers based upon specification section numbers. Submit in a compiled and bookmarked PDF format as outlined below. Each item listed in the table of contents shall include a hyperlink to the associated section of the O&M Manual, in addition to the bookmarking.

- B. Provide content for Operation and Maintenance Manuals as specified in individual Specification Sections, and as reviewed and approved at the time of Section submittals. Submit reviewed manual content formatted and organized as required by this Section.
 - 1. Engineer will comment on whether content of operation and maintenance submittals is acceptable.
 - 2. Where applicable, clarify and update reviewed manual content to correspond to revisions and field conditions.
- C. Submit Operation and Maintenance Manuals in the following format:
 - 1. Submit by uploading to web-based project software site, or by email to Architect, as a formal project submittal in conformance with the project specific submittal procedures. Enable reviewer comments on draft submittals.
 - 2. Electronic Files: Use electronic files prepared by manufacturer where available. Where scanning of paper documents is required, configure scanned file for minimum readable file size.
 - 3. File Names and Bookmarks: Bookmark individual documents based on file names. Name document files to correspond to system, subsystem, and equipment names used in the table of contents. Group documents for each system and subsystem into individual composite bookmarked files, then create composite manual, so that resulting bookmarks reflect the system, subsystem, and equipment names in a readily navigated file tree. Configure electronic manual to display bookmark panel on opening file.
- D. Initial Manual Submittal: Submit draft copy of each manual at least 30 days before commencing Owner training. Engineer will comment on whether general scope and content of manual are acceptable.
- E. Final Manual Submittal: Submit O&M manual in final form prior to requesting inspection for Substantial Completion and at least 2 weeks before commencing Owner training. Engineer will return copy with review comments.
 - 1. Correct or revise O&M manual to comply with Engineer's comments. Submit copies of each corrected manual within 2 weeks of receipt of Engineer's comments.
- F. Refer to Division 01 for additional requirements.

1.30 RECORD DRAWINGS

- A. The Contractor shall obtain at his expense one (1) set of construction Contract Drawings, (including non-reproduction black and white prints or electronic files) for the purpose of recording as-built conditions.

- B. The Contractor shall perform all survey work required for the location and construction of the work and to record information necessary for completion of the record drawings. Record drawings shall show the actual location of the constructed facilities in the same manner as was shown on the bid drawings. All elevations and dimensions shown on the drawings shall be verified or corrected so as to provide a complete and accurate record of the facilities as constructed.
- C. It shall be the responsibility of the Contractor to mark **EACH** sheet of the contract documents in red and to record thereon in a legible manner, any and all approved field changes and conditions as they occur. A complete file of approved field sketches, diagrams, and other changes shall also be maintained. At completion of the work, the complete set of red marked contract documents, plus all approved field sketches and diagrams shall be submitted to the engineer and used in preparation of the record drawings.
- D. A complete set of red marked contract drawings shall be submitted, at one time, as the "Record" set. If there are no changes to a specific drawing, the contractor shall indicate "NO CHANGES" on that drawing. ALL drawings shall be included in the "Record" set.
- E. The complete set of red marked Contract Documents or electronic files shall be certified by the Contractor as reflecting record conditions and submitted to the engineer for review.
- F. The Contractor shall have the marked up set scanned, if they are not already electronic files, and then submit them to the Engineer as the "Record Set".
- G. Refer to Division 01 for additional requirements.

1.31 FINAL INSPECTION

- A. Upon completion of all Engineering Site Observation list items, the Contractor shall provide a copy of the Engineering Site Observation Report back to the Engineer with each items noted as completed or the current status of the item.

1.32 TEMPORARY FACILITIES

- A. Refer to the Division 01 Sections, General Conditions and Supplemental General Conditions.

1.33 TEMPORARY LIGHT AND POWER

- A. Refer to the Division 01 Sections, General Conditions and Supplemental General Conditions.

1.34 CLEANING

- A. It is the Contractor's responsibility to keep clean all equipment and fixtures provided under this contract for the duration of the project. Each trade shall keep the premises free from an accumulation of waste material or rubbish caused by his operations. The facilities require an environment of extreme cleanliness, and it is the Contractor's

responsibility to adhere to the strict regulations regarding procedures on the existing premises. After all tests are made and installations completed satisfactorily:

1. Thoroughly clean entire installation, both exposed surfaces and interiors.
2. Remove all debris caused by work.
3. Remove tools, surplus, materials, when work is finally accepted.

1.35 TRANSFER OF ELECTRONIC FILES

A. M/E Engineering, P.C. will provide electronic files for the Contractor's use in the preparation of sheet metal shop drawings, coordination drawings, or record drawings related to the project, and the following terms and conditions:

1. The Contractor shall submit a formal request for electronic drawing files on the M/E Engineering, P.C. website, by utilizing the following website link:
<http://www.meengineering.com/contact-pages/contractor-request>
2. M/E Engineering, P.C. makes no representation as to the compatibility of these files with the Contractor's hardware or the Contractor's software beyond the specific release of the referenced specifications.
3. M/E Engineering can only provide CAD files of M/E/P/FP drawing levels for which we are the Engineer of Record. CAD files of Architectural backgrounds, reflected ceiling plans, structural plans, etc. must be obtained separately from the Architect of Record.
4. Data contained on these electronic files is part of M/E Engineering, P.C.'s instruments of service shall not be used by the Contractor or anyone else receiving data through or from the Contractor for any purpose other than as convenience in the preparation of shop drawings for the referenced project. Any other use or reuse by the Contractor or by others will be at the Contractor's sole risk and without liability or legal exposure to M/E Engineering, P.C. The Contractor agrees to make no claim and hereby waive, to the fullest extent permitted by law, any claim or cause of action of any nature against M/E Engineering, P.C., its officers, directors, employees, agents or sub-consultants which may arise out of or in connection with the Contractor's use of the electronic files.
5. Furthermore, the Contractor shall, to the fullest extent permitted by law, indemnify and hold harmless, M/E Engineering, P.C. from all claims, damages, losses and expenses, including attorney's fees arising out of or resulting from the Contractor's use of these electronic files.
6. These electronic files are not contract documents. Significant difference may arise between these electronic files and corresponding hard copy contract documents due to addenda, change orders or other revisions. M/E Engineering, P.C. makes no representation regarding the accuracy or completeness of the electronic files the Contractor receives. In the event that a conflict arises between the signed contract documents prepared by M/E Engineering, P.C. and

electronic files, the signed contract documents shall govern. The Contractor is responsible for determining if any conflicts exist. By the Contractor's use of these electronic files the Contractor is not relieved of the Contractor's duty to comply with the contract documents, including and without limitation, the need to check, confirm and coordinate all dimensions and details, take field measurements, field verify conditions and coordinate the Contractor's work with that of other contractors for the project.

END OF SECTION

SECTION 260501
BASIC MATERIALS AND METHODS

PART 1 - GENERAL

1.1 DESCRIPTION

- A. The drawings are diagrammatic, unless detailed dimensioned drawings are included, and show only approximate locations of equipment, fixtures, panelboards, conduits, and wiring devices. Exact locations are subject to the approval of the Owner's Representative. The general run of electrical feeders, branch circuits, and conduits, indicated on the drawings, is not intended to be the exact routing. Exact routings of conduit shall suit the job conditions.
- B. Circuit designations, in the form of "Home Runs" on branches, indicate the designation of the branch circuit, the size and the quantity of branch circuit conductors, and the panel board or interconnection box from which the branch circuit is served.
- C. Make measurements at the site and in the building during construction for all systems installed as the work progresses in such a manner that the equipment, piping, vents, ducts, conduit, and boxes will fit in the space available. Maintain headroom and if in unfinished areas, be as neatly installed, as obscure and "out-of-the-way" as physically possible. Where more than one trade is involved in an area, space or chase, all shall cooperate and install their own work to utilize the space equally between them in proportion to their individual requirements. In general, ductwork shall be given preference except where grading of piping becomes a problem, followed by piping then electrical wiring. If, after installation of any equipment, piping, ducts, conduit, and boxes, it is determined that ample maintenance and passage space has not been provided, rearrange work and /or furnish other equipment as required for ample maintenance space.
- D. Any changes in the size or location of the material or equipment supplied, which may be necessary in order to meet field conditions or in order to avoid conflicts between trades, shall be brought to the immediate attention of the Owner's Representative and approval received before such alterations are made.

1.2 QUALITY ASSURANCE

- A. Electric equipment shall be installed in a neat and workmanlike manner. All methods of construction, details of workmanship, that are not specifically described or indicated in the contract documents, shall be subject to the control and approval of the Owner's Representative.
- B. Equipment and materials shall be of the quality and manufacture indicated in their respective sections of the specifications. The equipment specified is based upon the acceptable manufacturers listed. Equipment types, device ratings, dimensions, etc., correspond to the nomenclature dictated by those manufacturers. Where "or equal" is stated, equipment shall be equal in every way to that of the equipment specified and subject to approval. All equipment shall be tested at the factory. Unless specified elsewhere, standard factory inspection and operational tests will be acceptable.

1.3 SUBMITTALS

- A. Submit product data for the following equipment, materials and products, including all fittings and accessories:
 - 1. Conduit
 - 2. Wireway and Wire Trough
 - 3. Channel Support Systems
 - 4. Conductors
 - 5. Underground Pullboxes (Handholes) and Covers
 - 6. Water Proofing Seals
 - 7. Flashing, Sealing, Firestopping Materials
 - 8. Testing reports prior to energizing equipment and materials.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Conduit, Raceway and Tubing:
 - 1. Rigid Metal Conduit (RMC) shall be hot-dipped galvanized or electro-galvanized steel, UL listed "rigid metal conduit."
 - a. Acceptable Manufacturers:
 - 1) Nucor Tubular Products
 - 2) Allied Tube and Conduit
 - 3) Wheatland Tube
 - 4) Approved equal
 - 2. Flexible Metal Conduit (FMC) shall be constructed of one continuous length of electro-galvanized, spirally wound steel strip with interlocking convolutions and interior surfaces free from burrs and sharp edges; UL listed.
 - a. Acceptable Manufacturers:
 - 1) AFC (American Flexible Conduit) Cable Systems
 - 2) Anaconda Sealtite by ANAMET Electrical, Inc.
 - 3) Southwire
 - 3. Liquidtight Flexible Metal Conduit (LFMC) shall be constructed of one continuous length of electro-galvanized, spirally wound steel strip with interlocking convolutions, interior surfaces free from burrs and sharp edges, and an outer liquidtight, nonmetallic, sunlight-resistant jacket; UL listed.
 - a. Acceptable Manufacturers:
 - 1) AFC (American Flexible Conduit) Cable Systems
 - 2) Anaconda Sealtite by ANAMET Electrical, Inc.
 - 3) Southwire

4. Rigid Polyvinyl Chloride Conduit (PVC) shall be made from polyvinyl chloride compound and be homogenous plastic material free from visible cracks, holes, or foreign inclusions. Conduit bore shall be smooth and free of blisters, nicks, or other imperfections. Conduit shall be rated for use with 90°C conductors and UL listed. Conduit and fittings shall be tested in accordance with the testing requirements defined in NEMA TC-2, NEMA TC-3, UL-651 and UL-514. Schedule 40 shall be white in color; Schedule 80 shall be gray in color.

a. Acceptable Manufacturers:

- 1) Carlon
- 2) Heritage Plastics
- 3) JM Eagle
- 4) Cantex

B. Conduit Fittings:

1. Fittings for rigid metal conduit shall be fully threaded and shall be of the same material as the respective raceway system. Connectors shall also have insulated throat or plastic insulating bushing up to and including 1 in. size. For sizes 1-1/4 in. and larger, provide plastic insulating bushing. Die-cast, pressure cast fittings shall not be used. Fittings for rigid non-metallic conduit shall be solvent cemented in accordance with the manufacturer's instructions.

a. Acceptable Manufacturers:

- 1) O.Z. Gedney
- 2) Steel City
- 3) Thomas & Betts
- 4) Crouse-Hinds
- 5) Carlon

C. Wireway, Wire Trough, and Auxiliary Gutters:

1. Wireway and Wire Trough shall be hinged cover type wireway with provisions for full lay-in along the entire length of run. Wireway shall be steel, enclosed with gray enamel finish. Provide NEMA 1 units for interior/dry/clean locations and NEMA 12 for interior dry maintenance/shop/utility locations. Size to meet NEC fill requirements or larger as noted on Contract Documents. Provide knockouts along runs. Recess in wall where required for flush mounted equipment. Hinge shall be on the bottom of front face for horizontal mounting. Provide all covers, couplings, offsets, elbows, expansion joints, adapters, hold down straps, end caps, tees, pullboxes, hangers, reducers, supports, and other fittings to match and mate with wireways as required for complete system.

a. Acceptable Manufacturers:

- 1) Square D "Square Duct"
- 2) General Electric
- 3) Hoffman
- 4) Meco

D. Strut-Type Channel Raceways and Fittings:

1. Strut-Type Channel Raceways and Fittings shall be provided for racking of conduit, trapeze suspensions, equipment support, cable racks and panel racks. Channel shall be steel with electroplated zinc finish for interior dry locations. Provide necessary accessories such as bolts, screws, anchors, connection plates, and straps as required to perform the necessary functions. Wet location and exterior channel support systems shall be steel with hot dipped galvanized finish and stainless-steel hardware as a minimum. Cut ends shall be touched up with suitable matching finish. Provide poured-in-place inserts for supporting channels at poured concrete walls and ceilings.

a. Acceptable Manufacturers:

- 1) Unistrut
- 2) Globe
- 3) Kindorf
- 4) B-Line

E. Low Voltage (600V or less) Conductors and Cables:

1. Conductors shall be insulated for 600 volts, unless otherwise noted, and shall be standard AWG and kcmil sizes. Conductors shall be 98% copper, thermal plastic or cross-linked polymer insulated, heat and moisture resistant. Conductor sizes No. 18 AWG and smaller shall be a solid single strand; No. 16 AWG and larger shall be multiple stranded. Minimum conductor size shall be #12 AWG except smaller sizes may be used for communications and special systems. Conductor sizes shall be as called for. Conductors shall be labeled with UL seal and be marked with the manufacturer's name, wire size and insulation type. Insulation for all 600 volt conductors shall be Type THHN/THWN-2 or Type XHHW-2, unless otherwise noted. All exterior and underground conductors shall be XHHW-2. Luminaire fixture wire shall conform to the latest Underwriters Laboratories requirements. Flexible cords and cables for general portable use shall be Type SO or SOOW or as noted. Cables for special use shall be of the type specified for the application.

a. Color Coding:

- 1) All circuits shall be color coded according to the following schedule.

	Three Phase 120/208V	Three Phase 277/480V
Ground	Green	Green
Neutral	White	Gray
A or L1	Black	Brown
B or L2	Red	Orange
C or L3	Blue	Yellow

- b. Acceptable Manufacturers:
 - 1) General Cable (Brand of Prysmian Group)
 - 2) Southwire
 - 3) The Okonite Company
 - 4) Service Wire Co.
 - 5) Encore Wire

2. Terminal Lugs and Connectors:

- a. The lug shall be capable of continuous operation at the current rating of the cable it is used on. The lug shall be UL listed per UL 486A, using industry standard crimping tools and dies. Terminal lugs shall be solderless, pressure type with UL label for "CU/AL" conductor terminations. The lug shall be a closed-end compression (crimp) type, constructed of seamless, alloy suitable for copper and/or aluminum conductors to match the conductor. The lug shall be made with a chamfered inside end, for ease of conductor insertion. Both one and two hole lugs shall be NEMA sized for standard stud sizes and spacing. The lug shall be designed for use at the system voltage.

- 1) Acceptable Manufacturers:

- a) 3M Scotchlok 30,000 and 31,000 Series
 - b) Burndy
 - c) O.Z./Gedney
 - d) Thomas and Betts

- b. The conductor connection shall be capable of continuous operation at the current rating of the cables it is used on. The connection shall be UL listed per UL 486A, using industry standard crimping tools and dies. The connector shall be an inline compression (crimp) type, constructed of seamless, tin-plated copper. The connector shall be constructed with chamfered inside-ends and with center cable stops. The connector shall be designed for use at the system voltage.

- 1) Acceptable Manufacturers:

- a) 3M Scotchlok 10,000 and 11,000 Series
 - b) Burndy
 - c) O.Z./Gedney
 - d) Thomas and Betts

- c. "Split-bolt" Connectors shall be solderless type.

- 1) Acceptable Manufacturers:

- a) Burndy
 - b) Kearney
 - c) O.Z./Gedney
 - d) Thomas and Betts

- e) Anderson
 - d. "TWIST ON" Connectors shall be spiral steel spring type and insulated with vinyl cap and skirt.
 - 1) Acceptable Manufacturers:
 - a) 3-M Company "Scotch-Lok"
 - b) Ideal "Wing-Nuts"
 - c) Approved equal
- F. Outlet Boxes, Device Boxes, Rings, and Covers:
1. Outlet Boxes having pryout openings, knockouts, threaded entries, or hubs in either the sides of the back, or both, for entrance of conduit or cable fittings, or cables, with provisions for mounting outlet box cover. Outlet boxes shall be galvanized steel, not less than 2-1/2 in. deep, unless restricted by the surroundings, 4 in. square or octagonal. Boxes and associated fittings, plates and devices shall be mechanically fastened (screwed), friction fitting is not acceptable. Outlet boxes exposed to moisture, surface mounted, exterior, wet or damp locations shall be cadmium cast alloy complete with external threaded hubs and gasketed screw fastened covers. Minimum box size shall be as indicated in the NEC for the conductors and devices installed. Boxes shall be approved for the environmental condition where they will be installed.
 2. Conduit bodies providing access to interior of conduit or tubing system through one or more removable covers at junction or terminal point and listed in accordance with outlet box requirements.
 3. Extension ring intended to extend sides of outlet box or device box to increase box, volume, or both.
 - a. Acceptable Manufacturers:
 - 1) Steel City
 - 2) Raco
 - 3) Appleton
 - 4) Crouse Hinds
 4. Pull and junction boxes shall be constructed of not less than 14 gauge galvanized steel with trim for flush or surface mounting in accordance with the location to be installed. Provide screw-on type covers. Boxes installed in damp or wet locations shall be of raintight construction with gasketed cover and threaded conduit hubs. In no case shall boxes be sized smaller than as indicated NEC for conduit and conductor sizes installed. Boxes shall be approved for the environmental condition of the location where they will be installed.
 - a. Acceptable Manufacturers:
 - 1) Hoffman
 - 2) Keystone

3) Approved equal

G. Underground Pullboxes (Handholes):

1. Sidewalk and Grass Areas: Boxes shall be comprised of composite material with stainless steel hardware and ANSI Tier 8 rating minimum. Provide conduit/duct openings per the plans/schematics with spare capacity for 2 - 2" in each side wall, minimum. Box shall be minimum 2'-0" wide x 2'-0" long x 3'-0" deep inside dimensions, or larger as required to meet NEC requirements. Cover shall be imprinted with either "Electric", "Telephone", etc. to designate type of service. Provide 18 in. of #2 crushed stone under pullbox and 18 in. beyond. Refer to drawings per details and locations.

a. Manufacturers:

- 1) Quazite
- 2) Old Castle
- 3) Approved equal

H. Ductbanks:

1. Ductbanks shall be rigid non-metallic conduit system. Provide all sleeve joints, couplings, bend sections, bends, elbows, offsets, angle couplings, bell ends, caps, base spacers, and intermediate spacers as required to meet field conditions. All bends, stub-ups and wall, slab or floor-building penetrations shall be rigid steel conduit without exception.

I. Waterproofing Seals:

1. Provide expanding link type seal, for installation between duct/conduit, and sleeve or core-drilled hole in concrete.
2. Make: Link Seal, manufactured by Thunderline Corp., or approved equal.

J. Flashing, Sealing, Fire-stopping:

1. Fire-Stopping for Openings Through Fire and Smoke Rated Wall and Floor Assemblies:
 - a. Provide materials and products listed or classified by an approved independent testing laboratory for "Through-Penetration Fire-Stop Systems". The system shall meet the requirements of "Fire Tests of Through-Penetration Fire-Stops" designated ASTM E814.
 - b. Provide fire-stop system seals at all locations where piping, tubing, conduit, electrical busways/cables/wires, ductwork and similar utilities pass through or penetrate fire rated wall or floor assembly. Provide fire-stop seal between sleeve and wall for drywall construction.

- c. The minimum required fire resistance ratings of the wall or floor assembly shall be maintained by the fire-stop system. The installation shall provide an air and watertight seal.
- d. The methods used shall incorporate qualities, which permit the easy removal or addition of electrical conduits or cables without drilling or use of special tools. The product shall adhere to itself to allow repairs to be made with the same material and permit the vibration, expansion and/or contraction of any items passing through the penetration without cracking, crumbling and resulting reduction in fire rating.

2. Acceptable Manufacturers:

- a. Dow Corning Fire-Stop System Foams and Sealants
- b. Nelson Electric Fire-Stop System Putty, CLK and WRP
- c. S-100 FS500/600, Thomas & Betts
- d. Carborundum Fyre Putty
- e. 3-M Fire Products

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Comply with NECA NEIS (National Electrical Installation Standard) latest edition.
- B. Unless otherwise noted, wiring for all systems indicated in the contract documents shall consist of insulated conductors installed in raceways. Raceways shall be continuous from outlet box to outlet box and from outlet box to cabinet, junction or pull box. Secure and bond raceways to all boxes and cabinets so that each system of raceways is electrically continuous throughout. Unless otherwise indicated on the drawings, install all wiring in the following raceway system:
 - 1. Wiring 600 Volts or Less in Dry Locations: EMT.
 - 2. Wiring 600 Volts or Less in Dry Locations and Subject to Physical Damage: RMC.
 - 3. Wiring 600 Volts or Less in Outdoors, Above Grade Locations: RMC.
 - 4. Wiring 600 Volts or Less Installed Below Grade, in Concrete Floor Slabs or Below Ground Floor Slab: PVC-40 encased in concrete with rigid metal conduit bends and penetrations through building floors and walls.
 - 5. Flexible metal conduit shall be used for final connection to all motors, final connection to rotating or vibrating equipment, final connections to dry type transformers and final connections to recessed lighting fixtures. Liquidtight flexible conduit shall be used in all wet or damp locations. Maximum length of flexible conduit shall be 36 in., except that from outlet boxes to lighting fixture maximum length shall be 6 ft. Provide green insulated equipment grounding conductor in all flexible metal conduit.

C. Raceways:

1. Sized as indicated on the drawings. Where sizes are not indicated, raceways shall be sized as required by the National Electrical Code in accordance with the quantity, size, and type of the insulation conductors to be installed. Raceways shall be minimum 3/4 in. trade size.
2. Arranged in a neat manner for access and allow for access to work installed by other trades.
3. Install raceways square to the enclosure and terminate at enclosures without hubs with locknuts on both sides of enclosure wall. Install locknuts handtight, plus one-quarter turn more.
4. Terminate threaded conduits into threaded hubs or with locknuts on inside and outside of boxes or cabinets. Install bushings on conduits up to 1-1/4 inch trade size and insulated throat metal ground bushings on 1-1/2 inch trade size and larger conduits terminated with locknuts. Install throat metal grounding bushings on service conduit.
5. Complete raceway installation before starting conductor installation.
6. Provide stub-ups through floors with coupling threaded inside for plugs, set flush with finished floor. Plug coupling until conduit is extended above floor to final destination or a minimum of 2 feet above finished floor. Wherever a cluster of four (4) or more raceways rise out of floor exposed, provide neatly formed 6 in. high concrete envelop, with chamfered edges, around raceways.
7. Installed with a minimum of bends and offsets. All bends shall be made without kinking or destroying the cross section contour of the raceway. Factory made bends are acceptable and should be considered for raceways larger than 2 in.
8. Make bends in raceway using large-radius performed ells except for parallel bends. Field bending must be in accordance with NFPA 70 minimum radii requirements. Provide only equipment specifically designed for material and size involved.
9. Conceal conduit within finished walls, ceilings, and floors unless otherwise noted, or where permitted by the Owner's Representative. All exposed raceways shall be painted to match existing adjacent surface as directed by the Architect. Install conduit parallel or perpendicular to building lines.
10. Support conduit within 12 inches of enclosure to which attached.
11. Seal raceway opening that penetrate rooms or walls with acoustical requirements on both sides of rooms or walls with acoustically rated putty or firestopping.
12. Differing Temperatures: For raceways routed between areas with differing temperatures (interior to exterior, walk in coolers/freezers, environmental chambers, etc.) install raceway as follows:

- a. Provide a thermal break, 4 in. minimum of stainless steel or Schedule 40 PVC conduit within space wall/separation.
 - b. Seal raceway penetration through the wall/separation.
 - c. Provide a box on each side of the space wall/separation.
 - d. Provide raceway interior sealant (duct seal or suitable foam) to provide a complete air barrier after conductors are installed.
 - e. Mounting of raceway and boxes on equipment shall be coordinated and approved by the equipment manufacturer.
 - f. Installed with exterior surfaces not less than 6 in. from any surface with normal operating temperature of 200°F or higher.
13. Raceway installed in wet/damp locations or on exterior walls shall have a spacer manufactured for this purpose provided to maintain a space/void between the mounting surface and the raceway.
 14. Do not install conduits within 2 inches of the bottom side of a metal deck roof.
 15. Keep raceways at least 6 inches away from parallel runs of flues and steam or hot-water pipes. Install horizontal raceway runs above water and steam piping.
 16. Cut conduit perpendicular to the length. For conduits 2 inch trade size and larger, use roll cutter or a guide to make cut straight and perpendicular to the length. Ream inside of conduit to remove burrs. Bush where necessary.
 17. Install pull wires in empty raceways. Provide polypropylene or monofilament plastic line with not less than 200 lb tensile strength. Leave at least 12 inch of slack at both ends of pull wire. Cap underground raceways designated as spare above grade alongside raceways in use.
 18. Plugged at the ends of each roughed-in raceway with an approved cap or disc to prevent the entrance of foreign materials during construction.
 19. Installed with UL approved rain-tight and concrete-tight couplings and connectors.
 20. Raceways shall not be attached to or supported by wooden plug anchors or supported from mechanical work such as ductwork, piping, etc.
 21. If it is necessary to burn holes through webs of beams or girders, call such points to the attention of the Owner's Representative and receive written approval both as to location and size of hole before proceeding with work. All holes shall be burned no larger than absolutely necessary.
 22. Become familiar with the general construction of the building and place sleeves, inserts, etc., as required. All penetrations through existing floors shall be core drilled and sleeved.

23. All raceways shall be supported adequately by malleable iron pipe clamps or other approved methods. In exterior or wet locations, supports shall allow not less than 1/4 in. air space between raceway and wall. Firmly fasten raceway within 3 ft. of each outlet box, junction box, cabinet or fitting. The following table lists maximum spacing between conditions, strength of supporting members, etc.
24. Furnish and install such supports at no additional cost to owner.

Conduit Trade Size	Type of Run	Horizontal Spacing in Feet	Vertical Spacing in Feet
1/2 in., 3/4 in.	Concealed	7	10
1 in., 1-1/4 in.	Concealed	8	10
1-1/2 in. and larger	Concealed	10	10
1/2 in., 3/4 in.	Exposed	5	7
1 in., 1-1/4 in.	Exposed	7	8
1-1/2 in. and larger	Exposed	10	10

25. Where raceways puncture roof, install pitch pockets as required in order that the roof warranty is maintained. Coordinate with representative of roofing material manufacturer.

D. Underground Raceways and Ductbanks:

1. Encase all underground raceways in concrete, sand (NYSDOT 0733-15), No. 1 crushed stone (NYSDOT 0703-02) or pea stone (NYSDOT 0702-0203). Concrete encasement shall be utilized where indicated and for circuit voltages over 600V. For concrete encasement, form concrete envelope around raceways, 3 in. minimum thickness concrete at top, bottom and sides of raceways, conduits on 7-1/2 in. centers both directions with concrete between raceways. Top of concrete envelope shall be finished not less than 24 in. below finished grade, except where under building slabs. Open trench for its complete length before concrete is poured; if any obstructions are encountered, make provisions to avoid them. Support raceways minimum 3 in. above bottom of trench before pouring. Furnish and install precast concrete, plastic or fiber spacers. Stagger couplings. When concrete is specified, securely tie raceways in place to prevent floating. Pour concrete as soon as possible after placing and securing of raceways. Pull iron-shod mandrel, not more than 1/4 in. smaller than bore of raceway to remove concrete and other obstructions. Clean raceway by drawing through properly sized cylindrical brushes as many times as necessary to remove dirt. Concrete envelopes shall contain reinforcing rods wherever non-metallic raceways are used. Reinforcing shall be continuous runs of No. 4 deformed rods located in all four corners as well as top and bottom of envelope between each raceway. In locations where non-metallic raceways are used, change to heavy wall metallic conduit (RMC) of same internal diameter before rising out of ground and at bends/elbows; provide metallic conduit elbows at conduit rise. Carry concrete envelope to a point 12 in. minimum above grade or floor slab at rise point if allowed by site conditions and equipment to be installed. Slope top of concrete away from raceway, chamfer edges. Cap all empty conduits watertight. Place conduit in straight lines. Seal, completely waterproof, all duct joints before

encasement. Place direct-bury conduit tier-by-tier method, backfilling each layer to achieve proper spacing utilizing suitable encasement material. Trench backfill shall be in 6" lifts maximum and compacting between. Backfill to be excavated material with rock and organic material removed. For grass locations provide 8" minimum off site topsoil (NYSDOT 0713.01) and seed to match the existing. Other surfaces shall be returned to the original or better condition to the existing surrounding. Elbows shall have a minimum radius of 42 in. Follow proper low temperature installation procedures as recommended by raceway manufacturer. Provide detectable marking tape in soil above all ductbank sand buried conduit. Repair or replace all existing utilities and facilities damage, due to ductbank installation, as part of contract. Where raceways pass between exterior and interior and terminate in building, switchgear, pullbox, etc. provide conduit sealing bushing (O-Z Gedney CSB or approved equal) in each raceway to fill all voids around conduit and cables. Upsize the conduit as needed for suitable sealing bushing.

E. Outlet Boxes:

1. Consider location of outlets shown on drawings as approximate only. Study architectural, process piping, mechanical, plumbing, structural, roughing-in, etc., drawings and note surrounding areas in which each outlet is to be located. Locate outlet so that when fixtures, motors, cabinets, equipment, etc., are placed in position, outlet will serve its desired purpose. Where conflicts are noted between drawings, contact Owner's Representative for decision prior to installation. Comply with the NEC relative to position of outlet boxes in finished ceilings and walls.
2. Prior to installation, relocate any outlet location a distance of 5 ft. in any direction from location indicated on drawings if so directed by the Owner's Representative. Prior to completion of wall construction, adjust vertical height of any outlet from height indicated if so directed by Owner's Representative. The above modifications shall be made at no additional cost to the Owner.
3. Provide boxes in wiring and raceway systems wherever required for pulling of wires, making connections, and mounting of devices or fixtures. Outlet boxes shall be sized to accommodate the wiring, splices and device(s) to be installed in accordance with the NEC.
4. Saw-cut opening for boxes recessed in masonry walls in center of cell of masonry block, and install box flush with surface of wall. Box shall have extra-deep type raised tile covers or shall be 3-1/2 in. deep boxes with square corners and dimensions to accommodate conductors installed. Prepare block surfaces to provide a flat surface for a raintight connection between box and coverplate or supported equipment and box, whether installed indoors or outdoors.
5. Horizontally separate boxes mounted on opposite sides of walls so they are not in the same vertical channel.

6. Locate boxes so that cover or plate will not span different building finishes. Install a device cover plate over each and every outlet indicated on drawings. Do not install plates until painting, cleaning and finishing of surfaces surrounding the outlet are complete. Install single one-piece multi-gang covers over multi-gang devices.
7. Where outlets at different mounting heights are indicated on drawings adjacent to each other (due to lack of physical space to show symbol on drawings), install outlets on a common vertical line.
8. Support boxes of three gangs or more from more than one side by spanning two framing members or mounting on brackets specifically designed for purpose.
9. Fasten junction and pull boxes to, or support from, building structure. Do not support boxes by conduits.
10. Outlet boxes installed in plaster, gypsum board or wood paneled hollow cavity walls shall be installed flush with raised plaster covers or raised tile covers. Boxes shall be mechanically fastened and supported by two (2) adjacent structural members (studs) with cross brackets (Garvin Industries Model BMB or approved equal).
11. Surface ceiling mounted outlet boxes shall be minimum 4 in. square, 1-1/2 in. deep, galvanized sheet metal.
12. Surface wall mounted outlet boxes shall be cast type boxes.
13. Do not install aluminum boxes, enclosures, or fittings in contact with concrete or earth.
14. Do not rely on locknuts to penetrate nonconductive coatings on enclosures. Remove coatings in the locknut area prior to assembling conduit to enclosure to ensure a continuous ground path.
15. Seal openings and knockouts in back and sides of boxes and enclosures with acoustically rated putty for boxes and enclosures in areas of walls with acoustical requirements. Provide gaskets for wallplates and covers.
16. Seal openings and knockouts in back and sides of boxes and enclosures in areas of walls with lead shielding requirements.

F. Wiring Methods:

1. Conductors shall not be installed until raceway system, including all outlets, cabinets, bushings and fittings, is completed. Verify that all work of other trades which may cause conductor damage is completed. Use only U.L. approved cable lubricants when necessary. Do not use mechanical means to pull conductors No. 8 or smaller.
2. In general, conductors shall be the same size from the last protective device to the load.

3. Wiring systems shall be properly grounded and continuously polarized throughout, following the color-coding specified. Connect branch circuit wiring at panelboards, as required, in order to provide a "balanced" three-phase load on feeders.
4. Provide insulated green ground conductor in each branch circuit.
5. All feeder connections shall be made to bus and other equipment using solderless, pressure type terminal lugs.
6. Branch circuits connected to a 20A circuit breaker shall be sized as indicated except for lengths exceeding 75 ft. For circuits longer than 75 ft. to 100 ft. utilize No. 10 AWG conductors (line, neutral and ground) and for circuits from 100 ft. to 150 ft. utilize No. 8 AWG (line, neutral and ground) unless otherwise indicated. Conduit size shall be modified in accordance with the NEC.
7. For splices and taps, No. 10 AWG and smaller, use solderless "twist on" connectors having spiral steel spring and insulated with a vinyl cap and skirt.
8. For splices and taps, No. 8 and larger, use insulated solderless set screw AL/CU or hydraulically compressed sleeve fittings suitable for the intended use.
9. Use cast connections for ground conductors.
10. Provide minimum 6 in. of spare/slack of each conductor in each junction or pull box and termination.
11. Make all splices and connections in accessible boxes and cabinets only.
12. Cover uninsulated splices, joints, and free ends of conductor with rubber and friction tape or PVC electrical tape. Plastic insulating caps may serve as insulation. Heat shrink sleeves shall be acceptable for crimp type splices.
13. On termination at branch circuit outlets, leave a minimum of 8 in. free conductor for installation of devices and fixtures.
14. Feeder conductors shall be continuous from point of origin to load termination without splice. If this is not practical, contact the Owner's Representative and receive written approval for splicing prior to installation of feeder(s). Where feeder conductors pass through junction and pull boxes, bind and lace conductors of each feeder together. For parallel sets of conductors, match lengths of conductors as near equal as possible.
15. Branch circuit conductors installed in panelboards, and control conductors installed in control cabinets and panels shall be neatly bound together using "Ty-Raps" or equal.
16. Provide cable/conductor vertical support in accordance with the NEC.

17. Manholes/Handholes:

- a. Provide separation of conductors of different systems per NEC requirements.
- b. Pitch all raceways toward the manhole/handhole.
- c. Mortar and brick the throats of manholes/handholes to grade level. Set cover rim to 1 in. above grass areas and flush with finished areas. Waterproof throat with elastic bituminous plastic cement coating.

G. Junction and Pull Boxes:

- 1. Install junction and pull boxes in readily accessible locations. Access to boxes shall not be blocked by equipment, piping, ducts and the like. Provide all necessary junction or pull boxes required due to field conditions and size as require by the National Electrical Code.

H. Equipment Mounting Heights:

- 1. Unless otherwise noted, mount devices and equipment at heights measured from finished floor to device/equipment centerline as follows:
 - a. Distribution panelboards, to top of backbox 72 in.
 - b. Terminal cabinets, control cabinets, to top of backbox 72 in.
 - c. Disconnect switches, motor starters, enclosed circuit breakers. 48 in.
- 2. Where structural or other interferences prevent compliance with mounting heights listed above, consult Owner's Representative for approval to change location before installation.

I. Hangers and Supports:

- 1. Provide steel angles, channels and other materials necessary for the proper support and erection of motor starters, distribution panelboards, large disconnect switches, large circuit breakers, pendant mounted lighting fixtures, etc.
- 2. Panelboards, disconnect switches, circuit breakers, cabinets, large pull boxes, and cable support boxes shall be secured to the building structure and not supported from conduits. Racks for support of conduits and heavy electrical equipment shall be secured to building construction by substantial structural supports.

J. Identification:

1. Provide engraved lamincoid identification nameplates on switchboards, main service disconnects, and transfer switches using designation shown in panelboard schedule. Include voltage, phase, equipment served, voltage source to panel or equipment.
2. Provide engraved lamincoid identification nameplates for each circuit breaker in the main distribution panel listing the panelboard or equipment connected to each device.
3. Provide engraved lamincoid identification nameplates on all items of equipment including individual circuit breaker enclosures and disconnect switches, listing the equipment connected to the particular device provided under Specification Section 262000, including, but not limited to: Disconnect switches, circuit breakers, etc. Include voltage, phase, equipment served, voltage source to panel or equipment.
4. Provide complete type written directory for each panelboard listing room number, function, etc., for each circuit breaker. Directory shall be placed in a plastic clear sleeve in the interior of the panelboard door. Provide type written updated panelboard directories for existing panelboards affected by this work.
5. Identify junction and pullboxes for particular service and circuit such as power, emergency power, lighting, fire alarm, telephone, interphone, public address, nurse call, etc. using stencil lettering on cover.

K. Spare Parts:

1. Deliver to Owner and obtain receipt for spare parts including key switches, fuses, etc.

3.2 TESTS

- A. Branch circuits shall be tested during installation for continuity and identification and shall pass operational tests to determine that all circuits perform the function for which they are designed. For all feeder and exterior branch circuit wiring rated 600 volts or less, provide 1,000 volt "Megger" insulation test prior to energizing feeders. Use a 1,000-volt motor driven megger for all tests. Test voltage shall be applied until readings reach a constant value, and until three (3) equal readings, each one (1) minute apart, are obtained. Minimum megger reading shall be 45 megohms for feeder conductors. Document test results and submit for approval prior to energizing conductors.

END OF SECTION

SECTION 260526
GROUNDING

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Provide grounding system equal to or exceeding the requirements of NEC and as indicated in the contract documents. Raceway system which includes metal conduit, wireways, pullboxes, junction boxes, busway, wire ways, cable trays, enclosures, motor frames, etc., shall be made to form a continuous, conducting permanent ground circuit of the lowest practical impedance to enhance the safe conduction of ground fault currents and to prevent objectionable differences in voltage between metal nonload current carrying parts of the electrical system.
- B. Provide solid grounding of building structures and electrical and communications systems and equipment. It includes basic requirements for grounding for protection of life, equipment, circuits and systems. Types of grounding systems include the following:
 - 1. Building Grounding
 - 2. Electrical Equipment Grounding
 - 3. Surge Protection Device (SPD) Grounding

1.2 QUALITY ASSURANCE

- A. All methods of construction, details of workmanship, that are not specifically described or indicated in the contract documents, shall be subject to the control and approval of the Owner's Representative. Equipment and materials shall be of the quality and manufacture indicated in their respective sections of the specifications. The equipment specified is based upon the acceptable manufacturers listed. Equipment types, device ratings, dimensions, etc., correspond to the nomenclature dictated by those manufacturers. Where "or equal" is stated, equipment shall be equivalent in every way to that of the equipment specified and subject to approval. All equipment shall be tested at the factory. Unless specified elsewhere, standard factory inspection and operational tests will be acceptable.
- B. Electrical Components, Devices and Accessories: Listed and labeled as defined in the NEC by Nationally Recognized Testing Laboratory (NRTL) and marked for intended use.
- C. Comply with UL 467 for grounding and bonding materials and equipment.

1.3 REQUIREMENTS

- A. Grounding conductors, bonding conductors, jumpers, grounded conductors, etc. shall be sized in accordance with the NEC.
- B. Equipment and materials shall be installed in accordance with the manufacturer's recommendations.

PART 2 - PRODUCTS

2.1 MATERIALS

A. Conductors:

1. Exposed grounding components such as bars, straps, cables, flexible jumpers, braids, shunts, etc., shall be bare copper unless otherwise indicated.
2. Grounding conductors in raceway with 600V circuiting shall be insulated to match the circuit conductors with green color.
3. Grounding conductors used with system voltage greater than 1000V shall be bare unless otherwise indicated.
4. Grounding conductor size shall be as indicated or as required by the NEC whichever is larger, stranded, soft drawn or soft annealed copper, unless otherwise indicated. Sizing shall take into account circuit voltage drop.
5. Acceptable Manufacturers:
 - a. Same make as for 600 volt conductors.

B. Connectors, Clamps and Terminals:

1. Mechanical connectors and clamps shall be made of copper alloy or silicon bronze. Solderless compression terminals shall be copper, long-barrel, NEMA two bolt. Bolts and washers (Belleville) shall be of comparable material or stainless steel.
 - a. Acceptable Manufacturers:
 - 1) Burndy
 - 2) Hubbell Anderson Corp.
 - 3) Thomas & Betts
 - 4) Approved equal
2. Exothermic Welds:
 - a. Provide exothermic welds designed for size and type of intended cable, rods, structure, etc. Solder prohibited for connections, except for medium and high voltage cable metallic tape shields (utilize mechanical and solder).
 - b. Acceptable Manufacturers:
 - 1) Erico "Cadweld"
 - 2) Burndy "ThermOweld"
 - 3) Approved equal

3. Pipe Clamp:
 - a. Pipe clamp for bonding to pipe type electrode (water pipe, etc.) shall be a suitably sized copper alloy clamp.
 - b. Acceptable Manufacturers:
 - 1) Burndy GAR-BU
 - 2) O-Z Gedney Type CG
 - 3) Burndy "Durium"
 - 4) AFL Global "Everdur"
 - 5) Approved equal
4. Flexible Strap:
 - a. Flexible grounding straps shall be of braided high conductivity copper with two hole connector. Strap shall have equal to or greater than ampacity of the system it is bonding to. Strap shall provide flexibility in all directions when installed properly.
 - b. Acceptable Manufacturers:
 - 1) Burndy
 - 2) OZ Gedney
 - 3) Approved equal

PART 3 - EXECUTION

3.1 INSTALLATION

- A. Grounding Conductors:
 1. Provide grounding conductor(s) with all power circuits. Conductor shall be sized as indicated or as required by the NEC as a minimum and shall be terminated on the equipment, device, enclosure, etc. grounding terminal. Conductor size shall be for the entire length unless approved by the Engineer where oversized for voltage drop.
 2. Conductors above grade to ground electrodes (water piping, structural column, etc.) and to equipment (service entrance, ground bars, ground halos, etc.) shall be installed in metallic conduit with ends bonded to the conduit.
 3. Grounding conductors shall be installed to have a minimum radius of 3 in.
 4. Grounding conductors in a raceway system shall be terminated/bonded to each box, cabinet, enclosure, etc. through which it passes or terminates.
 5. Grounding conductors routed with underground circuits shall be bonded to each ground electrode and metallic cable support system within the raceway system including pull and access locations.

6. Stranded conductors penetrating vapor barriers, foundations, slab on grade and water stop membranes shall have the interstitial spaces between strands filled with solder 4 in. beyond the membrane each side. The conductor shall be sealed to the membrane with a manufacturer approved method.

B. Raceway Systems:

1. All metal supports, cable trays, messenger cables, frames, sleeves, brackets, braces, etc. for the raceway system, panels, switches, boxes, starters controls, etc., which are not rigidly secured to and in contact with the raceway system, or which are subject to vibration and loosening, shall be bonded to the raceway system.
2. Termination of rigid conduit at all boxes, cabinets, and enclosures shall be made up tightly with a double locknut arrangement and a bushing, bushings being of the insulated type. Utilize grounding bushings as specified elsewhere in these specifications.
3. Conduit which runs to or from boxes, cabinets, or enclosures having concentric or eccentric knockouts which partially perforate the metal around the conduit and hence impair the continuity of system ground circuits shall be provided with bonding jumpers connected between a grounding type bushing/locknut on the conduit and a ground bus or stud inside the box, cabinet, or enclosure and attached thereto.

C. Connectors Clamps and Terminals:

1. Connectors utilized above grade in dry accessible locations shall be mechanical or exothermic type.
2. Connectors in damp locations, below grade or if not indicated shall be exothermic type.
3. Clean the area near the connecting surfaces prior to any connection to ensure effective contact. Cleaning shall be to the bare metal. Wire brush area if needed to remove rust scale paint, dirt, etc. to expose bare metal.
4. Exothermic connections shall be installed in accordance with the manufacturer's recommendations and tested with heavy blow of a five pound sledge.

D. Flexible Strap:

1. Flexible straps shall be used when bonding vibrating/moveable equipment, with expansion fittings and where recommended by the manufacturer.
2. Sufficient slack shall be provided to compensate for the anticipated vibration, movement and expansion.

- E. Existing Ground Grid:
1. Provide connection to existing main ground electrode/ground electrode grid.
 2. Connecting conductors shall be bare #4/0 AWG minimum, buried a minimum of 24 in. below grade.
 3. Connect the existing ground grid to the building electric service and to the main ground bar.
- F. Secondary Electrical Systems:
1. The neutral (grounded) conductor of each low voltage, single and/or polyphase system or distribution system, except special isolated double insulated systems, shall be solidly connected to ground at the transformer neutral bushing, or at the main secondary switchgear to the system ground, and shall be sized for current carrying capacity, not to be less than as required by the NEC. Ground connection shall be to the building grounding system, building steel, building water service, building concrete reinforcement and as indicated.
 2. Provide equipment grounding conductor, green colored insulation, with phase conductors, to primary side of all transformers rated 600 volts or less circuited to the enclosure and secondary neutral bushing, to all electrical utilization and distribution equipment; insulation shall be same type as phase conductors. Transformer enclosures shall be bonded to the primary and secondary circuit grounding conductor.
 3. Equipment grounding conductors shall extend from the point of termination back to the ground bus of the source panelboard, switchboard, transformer, or switchgear.
- G. Equipment Grounding:
1. Surge Protection Device (SPD) Ground Conductor Installations: Extend SPD dissipation ground conductors to local equipment ground bus and to common grounding electrode conductors. Size conductors per SPD manufacturer recommendations and the NEC.
- H. Emergency Generators with Three Pole Transfer Switch(es):
1. Generator neutrals are not to be bonded to ground at the generator.
 2. Generator neutral shall be connected to the secondary electrical distribution system neutral conductor or bus. Connection shall be made at the transfer switch neutral lug.
 3. Generator frames shall be bonded to the ground system with a conductor sized in accordance with the NEC.

I. Power Company Requirements:

1. Size #4 ground conductor from service entrance equipment to meter panel.
2. Meet power company requirements.

END OF SECTION

SECTION 262000
ELECTRIC DISTRIBUTION

PART 1 - GENERAL

1.1 DESCRIPTION

- A. Provide a complete electrical service and distribution system as indicated on the Contract Documents and as specified herein.

1.2 QUALITY ASSURANCE

- A. All methods of construction, details of workmanship, that are not specifically described or indicated in the contract documents, shall be subject to the control and approval of the Owner's Representative. Equipment and materials shall be of the quality and manufacture indicated in their respective sections of the specifications. The equipment specified is based upon the acceptable manufacturers listed. Equipment types, device ratings, dimensions, etc., correspond to the nomenclature dictated by those manufacturers. Where "or equal" is stated, equipment shall be equivalent in every way to that of the equipment specified and subject to approval. All equipment shall be tested at the factory. Unless specified elsewhere, standard factory inspection and operational tests will be acceptable.
- B. Installation shall be in accordance with NFPA-70 (National Electrical Code), National Electrical Safety Code (NESC), state codes, local codes, and requirements of authority having jurisdiction.
- C. Equipment shall be designed, manufactured, assembled, and tested in accordance with the latest revisions of applicable published ANSI, NEMA, UL and IEEE Standards.

1.3 SUBMITTALS

- A. Submit the following product data/information:
 - 1. Manufacturer and equipment type.
 - 2. Standard catalog information sheet.
 - 3. Detailed shop drawings indicating plan, elevation, end and isometric views. Top and bottom conduit areas shall be clearly shown and dimensioned on the drawings.
 - 4. Complete Bill of Materials.
 - 5. All relevant ratings including, but not limited to, voltage, current, interrupting and withstand.
 - 6. Overcurrent Device Information. Model number, available settings, setting ranges, capabilities, etc.
 - 7. Submit available and final settings, programming and adjustments.

- B. Submit product data and information for the following equipment, materials, products, etc.:
 - 1. Disconnect switches.
 - 2. Surge Protective Devices.

1.4 WARRANTY

- A. Provide full system warranty (labor, travel, equipment, etc.) in accordance with Division 1 and a minimum of one (1) year from acceptance.

PART 2 - PRODUCTS

2.1 MATERIALS

- A. Power Meter
 - 1. Where indicated on the drawings, provide a power meter with the following parameters:
 - a. LCD or LED display.
 - b. Line voltage control power.
 - c. Voltage input with overcurrent protection and disconnecting means.
 - d. True RMS voltage and current measurement.
 - e. Metered parameters: Phase current, line voltage, phase voltage, frequency, power factor per phase and three phase total, real power per phase and total, reactive power per phase and total, apparent power per phase and total, total real energy, total reactive energy, total apparent energy, user configured sliding window for real, reactive and apparent power peak demand. Sampling rate shall be 512 sample points per cycle minimum.
 - f. Accuracy: Energy, and demand power: 0.2% in accordance with ANSI C12.20 Instrument current transformers shall be factory wired to shorting blocks to prevent open-circuiting the current transformers under energized conditions. The meter shall also be user programmable for current to any CT ratio.
 - g. Capable of metering up to 480 volts without external potential transformers. The meter shall also be user programmable for voltage range to any PT ratio.
 - h. Communications: Modbus RTU, TC/IP, etc.

- i. Acceptable Manufacturers:
 - 1) Equipment (Unit Manufacturer)
 - 2) Square D
 - 3) Eaton
 - 4) Shark

B. Disconnect Switches:

- 1. Shall be heavy-duty type three-pole, with "Quick Make/Quick Break" operating handle mechanically interlocked with the cover, horsepower and voltage rated to match equipment served. Where indicated switches shall be provided with dual-element, time delay, rejection type fuses. Switches shall be installed in NEMA 1 for indoor use, NEMA 4 for outdoor use. Provide provisions for padlocking in the "off" position. Provide neutral bar in single phase or three phase, four wire circuits, and ground bar in all switches. Provide auxiliary contacts where called for.
- 2. All disconnects connected downstream of ASD's shall have a normally open and normally closed auxiliary contacts which shall be wired to the ASD to indicate disconnect is open.
- 3. Manufacturers: Subject to compliance with Contract Documents, the following manufacturers are acceptable:
 - a. Square-D - Design Make.
 - b. Cutler Hammer.
 - c. General Electric.
 - d. Siemens.

C. Fuses:

- 1. All fuses rated 600 volts and below shall be rejection type dual-element, time-delay type. Provide two (2) complete sets of fuses for all fusible devices. Deliver spare fuses to the Owner and obtain receipt.
- 2. Manufacturers: Subject to compliance with Contract Documents, the following manufacturers are acceptable:
 - a. Fuses 600 Amperes and Below: Bussman Type FRS-R (600 volts), Bussman Type FRN-R (300 volts) or equivalent.
 - b. Fuses Rated Above 600 Amperes: Bussman Type KRP-C or equivalent.

D. Surge Protective Device:

- 1. Device shall be rated for location as shown on drawings.
- 2. Seven Mode Protection: Line-to-neutral (three), line-to-ground (three) and neutral-to-ground.

3. Provide test report from a recognized independent testing laboratory verifying the Surge Protective Devices (SPD) can survive published surge current rating on both a per mode and per phase basis. ANSI/UL 1449, latest edition.
4. Surge Current Capacity - The minimum total surge current tested with the ANSI/IEEE C42.41, 20 kA-8/20 microsecond waveform that the device is capable of withstanding shall be as shown in the following table:

<u>Application</u>	<u>Peak Surge Current Per Phase</u>	<u>Nominal Discharge Current - In Per Mode</u>
a. Type 2 - After Service Entrance	160 kA	20 kA
5. Unit shall comply with ANSI/UL-1449, latest edition. Voltage Protection Rating (VPR) per Mode must not exceed the following for Type 2 SPD:
 - a. 208Y/120, L-N 800 volts, L-G 700 volts, N-G 800 volts, L-L 1000 volts.
6. UL-1283 bi-directional high frequency noise attenuation for electric line noise shall be 50 dB at 10 kHz-100 MHz.
7. Short Circuit Current Rating: 200 KAIC.
8. Indication system:
 - a. A green/red LED indicator for each phase.
 - b. Flashing trouble light.
 - c. Shall alarm open circuit damage, thermal conditions and overcurrent.
 - d. Transient surge counter.
 - e. Provide dry contact for remote monitoring.
9. Integrated model.
10. Manufacturers: Subject to compliance with contract documents, the following manufacturers are acceptable:
 - a. Cutler Hammer SPD.
 - b. L.E.A./Dynatech.
 - c. Liebert.
 - d. Square D - Design Make.
 - e. Current Technology.

PART 3 - EXECUTION

3.1 INSTALLATION

- A. All equipment shall be grounded per the NEC.
- B. Electrical distribution equipment shall have lugs/terminations suitable for the indicated conductor size. Where conductors have been oversized for voltage drop and where approved by the Engineer it shall be allowed to reduce the conductor size using hydraulically crimped splice in a box next to the distribution equipment to allow for standard lug termination.
- C. Identification:
 - 1. Identify all items of equipment as described in Section 260501-3.1, Identification. Identification shall be provided for switchboards, panelboards, transformers, ASD's, motor starters, disconnect switches, enclosed circuit breakers, switchboard main/distribution breakers, MCC's automatic transfer switches, UPS's, generators, surge suppression devices, control panels, switchgear, etc.
 - 2. Switchboards, panelboards, MCC's, switchgear, etc. shall have a label indicating name/tag ID, feeder source, conductor color convention and for service entrance locations the available short circuit current.

3.2 CLEANING

- A. At the completion of the project, while equipment is de-energized, it shall be thoroughly cleaned to a shipped condition using methods in accordance with the manufacturer's recommendations. Utilize vacuum for cleaning and not compressed gas.

3.3 SPARE PARTS

- A. Deliver loose equipment to the Owner and obtain receipt for fuses, keys to panelboards, etc.

END OF SECTION

SECTION 263213

POWER GENERATION - GENERATOR, AUTOMATIC TRANSFER SWITCH AND ACCESSORIES

PART 1 - GENERAL

1.1 WORK INCLUDED

- A. Provide labor, materials, equipment and services for the complete installation of generator, automatic transfer switch and related work required in these Contract Documents.

1.2 QUALITY ASSURANCE

- A. All methods of construction, details of workmanship that are not specifically described or indicated in the contract documents, shall be subject to the control and approval of the Owner's Representative. Equipment and materials shall be of the quality and manufacture indicated in their respective sections of the specifications. The equipment specified is based upon the acceptable manufacturers listed. Equipment types, device ratings, dimensions, etc. correspond to the nomenclature dictated by those manufacturers. All equipment shall be tested at the factory. Unless specified elsewhere, standard factory inspection and operational tests will be acceptable.
- B. Installation shall be accordance with NFPA 37 (Installation and Use of Stationary Combustible Engines), NFPA 70 (National Electrical Code), NFPA 110 (Standard for Emergency and Standby Power Systems), National Electrical Safety Code (NESC), state codes, local codes, and requirements of authority having jurisdiction.
- C. Equipment shall be designed, manufactured, assembled, and tested in accordance with the latest revisions of applicable published ANSI, NEMA, UL and IEEE Standards. If skintight enclosure is used, the equipment shall be listed for UL 2200.
- D. System emissions shall meet or exceed the EPA and Code of Federal Regulations 40CFR.

1.3 SUBMITTALS

- A. Submit shop drawings only for manufacturers named. Submission of other manufacturers will be rejected unless the terms of equivalents and substitutions stated in the General Provisions are followed.
- B. Submit shop drawings on equipment and accessories to include the following:
 - 1. Engine-generator set, including engine, alternator, circuit protection, fuel consumption, exhaust flow/temperature, noise (dBA), performance ratings (kW, starting kVA, pf, voltage, etc.), thermal ratings, heat generation.
 - 2. Engine controls, including starting controls, governor, etc.
 - 3. Generator instrumentation, voltage regulator, insulation class, etc.
 - 4. Catalog cuts, bill of materials, descriptive data, spare parts list for specified equipment.

5. Mounting arrangement, floor plans, elevations, overall dimensions including accessories, foundation, bedrail, and/or bolts, power and control conduit entrance space.
 6. Weatherproof enclosure: dimensions, elevation, plan, attenuation, cooling, accessories, etc.
 7. Batteries, mounting rack, accessories.
 8. Gas regulator.
 9. Automatic transfer switch and accessories.
 10. Remote annunciator panel.
 11. Wiring diagrams of all equipment, external and internal connections and interconnections.
 12. Emergency shutdown switch.
 13. Factory tests and field supervision reports as called for.
- C. Composite Instruction Books shall include as a minimum the following:
1. Instructions covering overall equipment.
 2. Instructions covering all major and serviceable components, and accessories.
 3. Recommended spare parts with current prices.
 4. Complete renewal parts information.
 5. Quantities of oil/coolant/etc.
 6. Instructions, both individually and collectively, shall adequately describe receipt, handling, care, inspection, installation, operation, and maintenance of equipment.
 7. Instruction books shall be used for equipment installation, and submitted prior to project closeout.
 8. Factory trained maintenance provider contact information.
 9. System error code (alarms, faults, etc.) list with descriptions.

1.4 STANDARDS AND TESTS

- A. Equipment covered by these specifications shall be designed, manufactured, assembled, and tested in accordance with the latest revisions of all applicable published ANSI, NEMA, and IEEE Standards, the requirements of NEC, NFPA 37, NFPA 110, UL 1008 and UL 2200 Standards. State and local requirements.

- B. Furnish submittals of field test reports covering field tests and inspections performed and conducted by manufacturer's representative.

1.5 FIELD SUPERVISION

- A. Submittal shall state that adequate local (within 75 mile radius of project locations) field supervision and service, by competent qualified representative of the manufacturer, who is regularly engaged in working on this type of equipment, will be available at any time.
- B. Submittal shall state address of nearest vendor's place of business, telephone number and name of person to contact for field service.
- C. Provide field supervision/service at no additional cost to cover inspection, test, and start-up of this equipment.
- D. Submittal shall state the amount of field supervision/service recommended by vendor to cover critical points of installation, inspection, test, and start-up.
- E. Provide proposal for a yearly maintenance agreement for time beyond the warranty period.
- F. The above data shall be included with submittals.

1.6 RIGGING

- A. Provide rigging to unload, move, transport, set in place, erect, etc.

1.7 WARRANTY

- A. Provide a warranty for the specified equipment to be free from defects in materials and workmanship, whether functional or nonfunctional, replace or repair without cost, defects which, with normal usage, appear within **one (1)** year of project closeout.

1.8 TRAINING

- A. Provide verbal and written training to facility appointed personnel in the proper and safe manner of operating equipment.
- B. Training shall be at a time convenient for the Owner, not during system start up/testing and be a minimum of 4 hours or as needed for the Owner personnel to understand the system operation and maintenance.

1.9 DESCRIPTION OF SYSTEM OPERATION

- A. Provide Engine-Generator System to meet the following functions:
 - 1. Arrange system for automatic starting upon failure of normal source voltage.
 - 2. Provide programmable one-second time delay, field adjustable from 0 to 9999 seconds. Delay time between normal source failure and engine starting.

3. Initiate engine starting cycle from transfer switch auxiliary dry contact.
4. Transfer loads from normal source power to emergency source when engine-generator reaches 90% of its rated voltage.
5. Retransfer emergency loads from emergency generator to normal source ten (10) minutes after normal source has reached 90% or more of normal voltage. Control shall be field-programmable from 0 to 9999 seconds.
6. Retransfer emergency loads from emergency generator to normal source instantaneously when normal source has reached 90% or more of normal voltage, if emergency generator has failed while supplying load.
7. Run engine for a period of ten (10) minutes after retransfer of emergency loads to normal source. Engine-generator will then shut down, automatically resetting and leaving all controls ready for the next emergency start condition. Period shall be programmable from 0 to 9999 seconds.
8. Use integral automatic transfer switch time clock to automatically exercise engine once each every four weeks for 0.5 hours. Time clock contacts shall simulate loss of normal voltage; start engine, and shut engine down after fifteen minutes of operation. The load shall not transfer to the emergency source during the exercise time. Provide a selector switch to permit cycling engine-generator under load or no-load conditions.
9. Shall shutdown upon activation of remote emergency shutdown button.

PART 2 - PRODUCTS

2.1 ENGINE-GENERATOR SET

- A. General: The system shall meet the following parameters.
 1. 208Y/120 volts, 12 lead, three phase, four wire, connected, 60 Hz.
 2. 175 kW stand-by rating at 0.8 power factor.
 3. Minimum motor starting kVA rating shall be 361, based on 30% instantaneous voltage dip.
 4. Suitable for ambient conditions:
 - a. Ambient Temperature: -25C to 40°C.
 - b. Altitude: 300ft above sea level.
 5. Maximum of 154 in. L x 54 in. W x 93.3 in. H (with silencer).
 6. 7-11 in. WC of utility natural gas pressure.
 7. Maximum allowable combustion exhaust back pressure of 0.75 in. Hg.

8. Combustion exhaust temperature shall not exceed 1,350°F and 1,270 CFM.
 9. System fuel consumption shall not exceed 2,400 CFH GPH.
- B. Engine - Gaseous Fuel:
1. Single fuel carburetion for natural gas.
 2. Minimum six cylinder, four stroke cycle, 1800 rpm.
 3. Stand-by rating shall be adequate to provide maximum kW output of generator under full load and motor starting kVA requirements. The engine generator set shall be capable of picking up 100% of nameplate kW, after adjusting for site conditions (altitude, temperature), in one step with the engine generator set at operating temperature, in accordance with NFPA-110. A resistive load bank (1.0 pf) shall be acceptable for meeting the load requirements.
 4. To include carburetor, secondary gas regulator (sized for 1.5 full load flow), electric solenoid shutoff valve, strainer (fuel filter), gas shutoff cock.
 5. Provide primary gas regulator if required by characteristics of local utility gas supply.
 6. Full pressure lubrication system with positive displacement, mechanical, full pressure gear type oil pump, full flow oil filters with replaceable filter element, equipped with spring-loaded bypass valve as an insurance against stoppage of lubricating oil in the event filter becomes clogged; water-cooled oil cooler and thermostat.
 7. One or more oil or dry type air cleaners of sufficient capacity to protect engine working parts from dust and dirt.
 8. Water cooled with unit mounted, closed loop type radiator, belt-driven pusher fan, centrifugal water circulating pump, thermostat temperature control, liquid-cooled exhaust manifolds suitable for unit full load operation and 50°C ambient condition. Provide radiator with duct connection flange. Rotating parts shall be protected against accidental contact. Low coolant level sensor alarm and shutdown.
 9. Provide 50/50 solution of propylene glycol for engine closed loop cooling system.
 10. Provide thermostatically controlled water jacket heater suitable for the intended location and wiring, rated for 120 volt, single phase operation. Unit shall be sized to maintain unit temperature for optimum starting conditions. Provide circuit for this from a normal power source.
 11. Electronic governor shall provide automatic engine-generator set frequency regulation adjustable from isochronous 0% droop. Governors using external throttle linkages are not acceptable.

12. Battery starting system per manufacturer's recommendations. Voltage shall be suitable for the needed starting capability, batteries and voltage drop.
13. Engine mounted battery charging alternator (belt driven), 35 ampere minimum, and solid-state voltage regulator. Higher charging current unit shall be provided as recommended by the manufacturer. Battery charging time shall not exceed 24 hour for a full recharge.
14. An electric starter capable of three complete cranking cycles without overheating, before overcrank shutdown. Shall comply with NFPA 110.

C. Generator/Alternator:

1. Synchronous, four pole, compatible with unit rpm, revolving field, fireproof construction. Brushless, permanent magnet exciter with solid state voltage regulator.
2. Insulation rating of alternator shall, at a minimum, meet requirements of NEMA Class H construction to comply with NEMA standard MG1-22.40 and 16.40. Temperature rise of rotor and stator shall be limited to Class F (155°C or 105°C maximum temperature rise of winding, measured by resistance method, at 40°C ambient) for standby rating.
3. Insulation rating of alternator shall, at a minimum, meet requirements of NEMA Class H 180°C construction to comply with NEMA standard MG1. Temperature rise of rotor and stator shall be limited to 150°C maximum temperature rise of winding, measured by resistance method, at 40°C ambient) for standby rating.
4. Voltage regulation within 1% plus or minus of rated voltage for any constant load from no load to full load.
5. Frequency regulation shall be isosynchronous from steady state no load to steady state rated load. Speed variations for constant loads from no load to rated load shall not exceed $\pm 0.25\%$ of rated speed, with constant ambient and operating temperature.
6. Provide plus or minus 5% voltage adjustment.
7. Total harmonic distortion (THD) shall not exceed 5% of rated voltage and no single harmonic shall exceed 3% of rated voltage.
8. Telephone influence Factor; TIF shall be less than 50 per NEMA MG1-22-43.
9. Terminal voltage re-established to within 2% of rated voltage within four seconds following any sudden change in load between no load and full load or between full load and no load.
10. Sealed, permanently lubricated ball bearings.
11. Direct or beltdriven generator cooling blower.

12. Provide fixed field connections to AC output leads in extra-large terminal box with removable cover.
13. Provide adequate wiring space for conduits. Power cables shall exit the top of the generator.
14. Exciter shall be brushless, permanent magnet type.

D. Generator Auxiliary Equipment:

1. Provide generator output circuit breaker as indicated, three pole, common trip, shunt trip, thermal magnetic type, to completely protect the generator from overloads; frame size and trip rating as called for. Provide solid state trip unit and 100% rating for circuit breakers 250A and above with long time, short time and instantaneous adjustable settings.
2. Outdoor weather-protective housing with exhaust muffler installed and located within the housing. The housing shall have hinged access doors for all maintenance and control locations. All doors shall be lockable. All sheet metal shall be primed for corrosion protection and finish painted with the manufacturer's standard color. All hardware (hinges, screws, bolts, door operator, etc.) to be stainless steel. Unit sound attenuation shall limit the noise level to 75 dB at 23 ft. Provide concrete pad as detail on the drawings. Generator unit shall be UL 2200 labeled with enclosure installed.
3. Battery Heater: Provide pad type battery heater suitable for intended location. Provide circuit for this from a normal power source.

E. Acceptable Manufactures:

1. Cummins, Inc.
2. Generac (Design Make)
3. Caterpillar
4. MTU/Detroit Diesel
5. Kohler

2.2 MICROPROCESSOR ENGINE-GENERATOR SET CONTROL

- A. The control shall have automatic remote start capability. Starting cycle shall be initiated by auxiliary contact(s) existing in automatic transfer switch(es). A panel mounted switch shall stop the engine in the STOP position, start and run the engine in the RUN position, and allow the engine to start and run by closing a remote contact, and stop by opening the remote contact when in the REMOTE or AUTOMATIC position.
- B. Automatic start circuit shall be supervised at the generator. Upon short, ground or other malfunction of the start circuit a trouble condition shall indicate at the generator controller and remote annunciator and the generator shall automatically start.
- C. The control shall include a cycle cranking function. The cranking cycle, nonadjustable, shall consist of an automatic crank period of approximately 15 seconds duration followed by a rest period or approximately 15 seconds duration. Cranking shall cease upon engine

starting and running. Two (2) means of cranking termination shall be provided, one as a backup to the other. Failure to start after three cranking cycles (75 seconds) shall shutdown and lockout the engine, and visually indicate an overcrank shutdown on the panel.

- D. The control shall shut down and lock out the engine upon: failing to start after the specified time (over crank), overspeed, low lubricating oil pressure, high engine temperature, or operation of a remote manual stop station. Provide audible alarm and visual indication of the particular contact that operated, and reset pushbutton. Provide common fault contacts, wired to terminal board for remote alarm indication.
- E. The generator control system shall be a fully integrated microprocessor-based control system for standby emergency engine generators meeting all requirements of NFPA 110 level 1.
- F. The generator control system shall enable remote diagnostics and building management integration of all generator functions. The generator controller shall provide integrated and digital control over all generator functions including: engine protection, alternator protection, speed governing, voltage regulation and all related generator operations.
- G. Communications shall be supported with building automation through Modbus, Ethernet or Building Management System protocol without network cards.
- H. Circuit boards shall be sealed/encapsulated and potted where beneficial for vibration and moisture.
- I. Diagnostic capabilities should include time-stamped event and alarm logs, ability to capture selectable operational parameters during events, simultaneous monitoring of all input or output parameters, and 0.2 msec data logging capabilities.
- J. In addition to standard NFPA 110 alarms, the application loads should also be protected through instantaneous and steady state protective settings on system voltage, frequency, and power levels.
- K. The control system shall provide pre-wired a minimum of six owner customizable digital outputs and communications support with RS232, RS485, or an optional modem.
- L. System inputs/outputs shall be software configurable providing full access to all alarm, event, data logging, and shutdown functionality.
- M. The control panel shall be a NEMA 12 enclosure and include a digital display for all user pertinent unit parameters including: engine and alternator operating conditions; oil pressure and optional oil temperature; coolant temperature and level alarm; fuel level (where applicable); engine speed; DC battery voltage; run time hours; generator voltages, amps, frequency, kilowatts, and power factor; alarm status and current alarm(s) condition per NFPA 110 level 1.
- N. Upon overload of generator capabilities, controller shall protect the alternator by shutting down the generator and shunt trip the circuit breakers.

- O. The control shall engine monitor indicator LEDs on the control panel; one red light for each of the five shut downs (except the remote manual stop), and one yellow light each for the high engine temperature and low engine oil pressure prealarms, and one green run light. The control panel monitor shall include; a flashing red light to indicate the generator set is not in automatic start mode, a yellow light to indicate low coolant temperature, a yellow light to indicate low fuel, a red light to indicated battery charger failure, and one red light for auxiliary use (for a total of twelve). A panel mounted switch shall reset the engine monitor and test the lamps. The engine-generator set starting battery(ies) shall power the monitor. Operation of shut down circuits shall be independent of indication and prealarm circuits. Provide a low coolant level shutdown, which shall be indicated as a high engine temperature fault.
- P. Provide remote annunciator in Main Elec. Room for engine-generator alarm function. Alarm functions for generator shall comply with NFPA 110 and as a minimum are as follows:
 - 1. Visual signals for: Battery charger AC supply failure, battery charger DC output failure, engine-generator running.
 - 2. Visual and audible signals for: Overspeed, low lube oil pressure, high and low water temperature, overcranking (failure to start), overload, over speed, on temporary power, low fuel, low coolant level, generator supplying load, low battery voltage and charger failure.
 - 3. Provide all of the indications and audible alarms called for above. Provide alarm silence and lamp test switches.

2.3 BATTERIES

- A. Provide batteries as follows:
 - 1. Sealed lead acid type, quantity and connections as recommended by the generator set manufacturer.
 - 2. Provide corrosion-resistant battery mounting rack, battery interconnecting cables and terminals, etc.
 - 3. Provide battery heating pad suitable for the intended location, 120 VAC and power connection to maintain 10 second starting time.

2.4 AUTOMATIC TRANSFER SWITCH (ATS)

- A. Description:
 - 1. The automatic transfer switch shall consist of a power transfer switch and a microprocessor based control module, interconnected to provide complete automatic operation. Double throw, mechanically and electrically interlocked. All main contacts shall be of silver composition. The operating transfer time shall be a maximum of 1/2 of a second. Transfer switch shall be capable of manual transfer in order to meet the requirements of UL 1008 and UL listing

requirements as described UL's "Electrical Construction Materials.". Circuit breakers shall not be used as a switching means.

2. Operated by momentary energization of a single coil with mechanical latching in both normal and emergency positions.
3. Operating voltage for transfer obtained from source to which load is to be transferred.
4. Three phase, four wire, three pole, solid neutral 208 volt normal and emergency power source contacts.
5. Ampere rating as called for, rated for continuous duty.
6. Unit shall be service entrance rated with a main circuit breaker.
7. Provide magnetic blowout coils and arc barriers on each pole.
8. Provide voltage supervisory relays on each phase of both normal and emergency sources, such that transfer and engine start is affected should any one phase of the three phase supply be below 80% of normal voltage.
9. Three-cycle closing and withstand rating minimum 35,000A rms symmetrical amperes without the use of current limiting fuses.
10. Manufacturer's standard mechanical type lugs suitable for aluminum or copper conductors. Provide lugs for each power cable, phase and neutral. Cable size and conductor type as called for. Terminals front connected.
11. Provide pilot lights (LED's) as follows:
 - a. Green, indicating normal switch position.
 - b. Red, indicating emergency switch position.
 - c. Fuse for each light.
12. Provide the following accessory features:
 - a. Adjustable time delay before engine starting, field programmable from 0-9999 seconds. Factory set at 1s.
 - b. Adjustable time delay on transfer to emergency, field programmable from 0-9999 seconds. Factory set at 3s.
 - c. Adjustable time delay on retransfer to normal field programmable from 0-9999 seconds, factory set at 300 seconds.
 - d. After retransfer to normal, the engine generator set shall be allowed to run, unloaded, for an additional 0-9999 seconds, factory set to 300 seconds.

- e. Test switch, engine start and transfer.
- f. Pushbutton to bypass time delay on retransfer back to "normal" position.
- g. Engine start contact.
- h. Time clock exerciser with transfer. Retransfer shall be automatic at end of exercise period. Provide a bypass switch for manual exercise and a selector switch to permit cycling engine-generator under load or no-load conditions.
- i. Auxiliary contacts to indicate normal, emergency and neutral position, two form C for each position. No common wires for auxiliary contacts. Bring wires to terminal block, suitably labeled.
- j. A contact which closes when normal source fails for initiating engine starting, rated min, 10A @ 32 VDC.
- k. A contact which closes when unit is on emergency power and normal power returns and is suitable for use. Contact shall be wired to elevator controller.
- l. Provide ground studs to enclosure for mechanical lugs for size #4/0 copper cables.
- m. Provide any other accessories as may be required to achieve operation as described in Article 1.9.
- n. Provide minimum of 12 of spare fuses.
- o. Provide NEMA 12 sheet metal enclosure for all mounting, front door hinged.
- p. All time delay relays shall be field programmable and shall show the actual setting time in minutes or seconds.

B. Acceptable Manufacturers:

- 1. ASCO J07ATSA30600C5ZM with provisions for CT compartment: Orange & Rockland.
- 2. Approved equal.

2.5 POWER METER

A. For each transfer switch provide a factory installed unit mounted power meter with the following parameters:

- 1. LCD or LED display.
- 2. Line voltage control power.

3. Voltage input with overcurrent protection and disconnecting means.
4. True RMS voltage and current measurement.
5. Metered parameters: Phase current, line voltage, phase voltage, frequency, power factor per phase and three phase total, real power per phase and total, reactive power per phase and total, apparent power per phase and total, total real energy, total reactive energy, total apparent energy, voltage/current harmonics (% THD), user configured sliding window for real, reactive and apparent power peak demand. Sampling rate shall be 512 sample points per cycle minimum.
6. Accuracy: Energy, and demand power: 0.2% in accordance with ANSI C12.20. Instrument current transformers shall be factory wired to shorting blocks to prevent open-circuiting the current transformers under energized conditions. The meter shall also be user programmable for current to any CT ratio.
7. Capable of metering up to 480 volts without external potential transformers. The meter shall also be user programmable for voltage range to any PT ratio.
8. Communications: Modbus RTU, TC/IP, etc.
9. Acceptable Manufacturers:
 - a. Equipment (Unit Manufacturer)
 - b. Square D
 - c. Eaton
 - d. Shark

2.6 EMERGENCY OFF PUSH BUTTON

- A. System shall have a maintained contact mushroom head push button with lockable protective hinged cover. Unit shall be a two pole double throw unit in a weather proof box/cover. Contacts shall be rated for 20A. Provide circuiting in conduit from the push button to the generator.
- B. Push button shall shut down the generator operation until reset.
- C. Locate the push button mounted on the exterior of the building for exterior generators and outside the generator room for interior generators.

PART 3 - EXECUTION

3.1 INSTALLATION - GENERAL

- A. General Requirements:
 1. Completely coordinate installation, assure that elements of the system are compatible, operational and correct.
 2. Provide rigging to unload, move, and set/bolt in place engine-generator and ATS. Provide concrete pad as detailed on the drawings.

3. Provide miscellaneous bolts, washers, nuts, clips, lockwashers, small hardware, etc., of durium or equal rust resistant material, to make installation complete.
4. Refer to "Grounding" section of specifications.
5. Install equipment plumb, level, and true.
6. Leave maximum space available in front, along side, etc., all items of equipment, to allow easy access and servicing of serviceable components. Meet NEC requirements.
7. All floor mounted equipment shall have a 4" equipment pad with wire mesh reinforcement and doweled into the floor unless otherwise indicated.
8. Exterior units shall be a minimum of 5' away from the building or structure.

3.2 WIRING

- A. Install power and control wiring between engine-generator set, transfer switch, battery charger, louvers, dampers, controls, coolers, batteries, day tank and all other various and related equipment.
- B. Comply with Manufacturer's Instruction Books.
- C. Color code and identify control and power wires and cables as called for.
- D. Provide copper, 600 volt insulation minimum, control wiring; do not splice.
- E. Generator start circuit shall be 2 hour rated type CI cable in conduit. This circuit shall be supervised and provide an alarm at the generator controller, remote annunciator panel and all other monitoring locations. Where there are multiple automatic transfer switches the start circuit shall homerun from each individual switch to the generator.
- F. Provide "crimp-on" type terminal for control wire terminations, as called for.
- G. Provide liquid-tight jacketed flexible conduit for all connections to engine, generator, and to day tank. All connections shall account for the anticipated vibration.
- H. Provide green insulated grounding conductor in each conduit run.

3.3 PHASE IDENTIFICATION AND TESTING

- A. Individual phase conductors shall be color coded as indicated in Section 260501 and the normal and emergency systems shall match.
- B. Conductor phase shall be verified prior to applying/installing phase color indication.
- C. Prior to operational testing of the system test phase rotation to ensure normal and emergency systems rotate in the same direction. This test shall be performed at each transfer switch. Provide a test report as part of the overall system testing report to indicate the following:

1. Date of test.
2. Personnel performing the testing.
3. For each transfer switch indicate switch designation, phase orientation (A, B, C) and rotation (clockwise, counterclockwise).

3.4 ENGINE - GENERATOR INSTALLATION

- A. Install where indicated. Refer to drawings for installation details, pad details, etc.
- B. Provide necessary anchor bolts at proper locations, place by templates if required, for proper setting of engine-generator.
- C. Manufacturer's Representative shall provide lube oil and anti-freeze for initial start-up. Electrical Contractor shall provide all fuel for start-up and testing and leave tank at the full level upon completion.
- D. Entire system shall be complete and operational and shall be test operated, including simulated loss of normal power, all control devices shall be operated to test their function.
- E. Determine exact requirements, verify locations, and comply with applicable regulations in installing equipment.
- F. Provide an emergency off push button where indicated.
- G. Provide "NO SMOKING" sign on each side of the generator enclosure to be clearly visible and in accordance with ANSI criteria.
- H. Provide the services of the manufacturer's representative to check out the system and instruct the Owner in the operation of the system. Furnish written statement to the Owner's Representative that the checkout and instruction service has been provided. Include statement that system operates properly, as called for. Submit statement as a submittal for review.

3.5 FUEL PIPING

- A. Plumbing trade shall provide natural gas piping to engine-generator and make final connection.
- B. Provide fuel filter, fuel solenoid valve, secondary regulator, gas shutoff cock, flexible fuel piping and fuel piping diagram.
- C. Coordinate fuel piping size with these items.

3.6 IDENTIFICATION

- A. For installations that have a single grounding location (connected to the main service entrance) provide signage indicating the following: "WARNING - SHOCK HAZARD EXISTS IF GROUNDING ELECTRODE OR BONDING JUMPER IN THE EQUIPMENT IS REMOVED WHILE ALTERNATE SOURCE IS ENERGIZED."

3.7 ELECTRICAL LOAD TEST

- A. Conduct a resistive load bank test to the full capacity of the generator for four hours after completion of installation, but before connecting to the building system. Record system voltage, current, kW, pf, oil pressure and temperature every 15 minutes with the manufacturer recommended values in the test report. Upon successful completion of load bank test, complete connections to building system and perform an operational test as outlined in "B" below.
- B. Conduct a full operational test of complete system prior to request for final payment and comply with the following:
 - 1. Start the generator by simulating a loss of utility power at each transfer switch.
 - 2. Energize maximum emergency light and power load for a period of one hour when scheduled.
 - 3. Record voltage at generator and at each panel, using the same digital meter at each location.
 - 4. Measure current in each phase of all feeders, using the same digital meter at each location.
 - 5. Record the time from power loss to engine start and power transfer for each transfer unit.
 - 6. Reconnect circuits in an effort to provide balanced (within 10%) load on all feeders.
 - 7. Provide and install all necessary metering equipment.
 - 8. Owner's Representative shall witness the test.
 - 9. Provide complete test report with the following as a minimum:
 - a. Attendees
 - b. Time/date
 - c. Initial parameters
 - d. Time delay on start.
 - e. Cranking time until the generator starts.

- f. Time to reach rated frequency and voltage.
 - g. Time for each automatic transfer switch to switch to emergency.
 - h. Engine/generator parameters - oil pressure, temperature, voltage, current, kW, power factor, etc. for each 5 minutes.
 - i. Automatic transfer switch retransfer time.
 - j. Generator shut down time.
 - k. Owner sign off.
10. Before final acceptance, specified tests shall be completed to the satisfaction of the Owner's Representative who shall be sole judge of the acceptability of such test and who may direct the performance of such additional tests as deemed necessary in order to determine the acceptability of the systems, equipment, material and workmanship. Additional tests required by the Owner's Representative shall be provided at no additional cost. Notify Engineer when load bank test is scheduled two (2) weeks prior to actual test.

3.8 EQUIPMENT PROTECTION

- A. Provide repair or replacement for all damage and defacement, whether functional or nonfunctional, to all equipment from the time it is unloaded, during installation, and during period of beneficial use, and until installation is accepted.

END OF SECTION