HVAC EQUIPMENT REPLACEMENT AT PRINCETON MIDDLE SCHOOL

PRINCETON PUBLIC SCHOOLS
PRINCETON - MERCER COUNTY - NEW JERSEY



FVHD PROJECT #5607

CM Engineers, LLC
Consulting Engineers

September 28, 2025

S P E C I F I C A T I O N S

for
HVAC EQUIPMENT REPLACEMENT AT PRINCETON MIDDLE SCHOOL
located at 217 Walnut Lane, Princeton, NJ 08540

for the
PRINCETON PUBLIC SCHOOLS
Princeton, Mercer County, New Jersey

FVHD PROJECT NO. 5607

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NOTICE TO BIDDERS
Princeton Public School
Mercer County, New Jersey

NOTICE IS HEREBY GIVEN that the Princeton Public Schools Board of Education ("Owner") will receive bids for **HVAC Equipment Replacement at Princeton Middle School,** together with all work incidental thereto, in accordance with the requirements of the Bid Documents prepared by Fraytak Veisz Hopkins Duthie, P.C. (FVHD), Architects-Planners, www.fvhdpc.com, **FVHD Project #5607**.

Bids will be received for: Single Overall Contract (DPMC: C032 with C009, C047, C066 & C068)

Bid Documents for the proposed Work are on file at the office of the Architect, Fraytak Veisz Hopkins Duthie, P.C., 1515 Lower Ferry Road, Trenton, NJ 08618, tel. 609.883.7101. Bid Documents are available for no fee from the Architect's website. Requests for electronic project documentation must be made through a registered account via the FVHD Contractor Portal at https://www.fvhdpc.com/contractors. Hard copies are available for $250 per set. A check or money order should be made payable to Fraytak Veisz Hopkins Duthie, P.C. A direct shipping account number (FedEx or UPS) and preferred shipping speed must also be provided.

Prebid Meeting is scheduled for **Wednesday November 19, 2025, 2:00 PM,** at Princeton Middle School, 217 Walnut Lane, Princeton, NJ 08540. Attendance at the prebid meeting is optional but encouraged.

All Requests for Information (RFI) must be submitted in writing by **November 21, 2025**, and sent to info@fvhdpc.com, or fax to 609-883-2694 or via common carrier to the Architect at the address indicated above. All correspondence must include the Architect's Project Name and Project Number referenced. The Architect is not responsible for misdirected or misrouted correspondence.

Sealed Bids are due by **Tuesday, December 9, 2025, 2:00 PM**, to Princeton Public Schools Board of Education, Attn: Andrew Harris, 25 Valey Road, Princeton, NJ 08540, and will be publicly opened and read immediately thereafter. Any Bid received after that time shall be rejected.

Bid Proposals shall be submitted in duplicate (one original and one copy) in a sealed envelope, addressed to the Owner, bearing the name and address of the bidder, and clearly marked "BID" with the contract title and/or bid number on the outside of the envelope and must be accompanied by a Certified Check, Cashier's Check or Bid Bond drawn to the order of the Owner in the amount of ten percent (10%) of the amount of the bid, but in no case in excess of $20,000; and must be delivered to the above place on or before the hour named. The Board of Education and the Architect assume no responsibility for bids mailed or misdirected in delivery.

If the bid exceeds $20,000, bidder must be pre-qualified by the New Jersey Division of Property Management and Construction (DPMC), in the above-listed classifications prior to the date that bids are received. Any Bidder and their Prime Subcontractors who do not possess a valid and active "Notice of Classification" may be ineligible to bid on this Project, and any bid submitted by such Bidder and their Prime Subcontractors may be rejected as non-responsive.

Pursuant to N.J.S.A. 18A:18A-25, each proposal shall be accompanied by a Consent of Surety from a Surety Company stating it will provide each bidder with separate Performance and Payment Bonds, each in the amount of 100% of the contract sum. Also, Surety agrees to furnish bidder with a Maintenance Bond in required form. The Consent of Surety shall be executed by an approved surety company authorized to do business in the State of New Jersey and in accordance with N.J.S.A. 2A:44-143, and 2A:44-144 and with AM BEST rating of A- or better companies nationally recognized.

This project is subject to the New Jersey State Prevailing Wage Act, N.J.S.A. 34:11-56.27 et seq.
All bidders must comply with N.J.S.A. 10:5-31 et seq., N.J.A.C. 17:27 et seq. and N.J.S.A. 10:2-1. An Initial Project Workforce Report will be required from the successful bidder (Form AA-201).

Pursuant to "The Public Works Contractor Registration Act", N.J.S.A. 34:11-56.48 et seq., bidders and their subcontractors are required to be registered with the New Jersey Department of Labor and Workforce Development and to possess a current certificate by said Department indicating compliance with the Act prior to the time and date that bids are received.

No bidder who is on the State Treasurer's or the Federal Government's List of Debarred, Suspended or Disqualified Bidders shall be eligible to bid on this project.

Per N.J.S.A. 52:32-44(b) all contractors and subcontractors must provide a Business Registration Certificate prior to contract award.

No bid may be withdrawn for a period of sixty (60) days after the date set for the opening thereof. The right is reserved to reject all bids pursuant to N.J.S.A. 18A:18A-22 and to waive minor informalities in the bidding in accordance with applicable law.

Princeton Public Schools Board of Education
Andrew Harris, Business Administrator/Board Secretary

BIDDING INFORMATION

SECTION 00100 - INSTRUCTIONS TO BIDDERS

1. INVITATION TO BID

A. All Bidders are required to prepare bids in accordance with all Drawings and Specifications (Bid Documents) prepared by Fraytak Veisz Hopkins Duthie, P.C. Architects-Planners.

1. Access to Bid Documents:
   a. Requests for electronic project documentation must be made through a registered account via FVHD Architect's Contractor Portal. If you have not already done so, please visit https://www.fvhdpc.com/contractors to register.
   b. To obtain Bid Documents, you must create/register a Contractor account on the Architect's website and submit a request for Bid Documents at https://www.fvhdpc.com/contractors/bidlisting

B. **DISCLAIMER**: Bidders should only rely on original digital and paper versions of the Bid Documents obtained directly from the Architect's office. Fraytak Veisz Hopkins Duthie, PC (FVHD) Architects-Planners is not responsible for any unauthorized copies made of the digital or paper Bid Documents obtained from sources other than the Architect's office. All information provided by Fraytak Veisz Hopkins Duthie, PC (FVHD) Architects-Planners is intellectual property and is protected under copyright laws. It is not to be used for any purpose other than for the indicated project. Any other use or manipulation of the information is strictly prohibited.

C. Bids for Contract(s), as listed in the Advertisement for Bids or Invitation to Bid as hereinafter described, will be received for the performance of the Project. The bids shall cover all costs of any nature, incident to and growing out of the Work. In explanation but not in limitation thereof, these costs shall include the cost of all Work, labor, materials, equipment, transportation and cost of all else necessary to perform and complete the Project in the manner and within the time required, all incidental expenses in connection therewith, all costs on account of loss by damage or destruction of the Project caused by the Contractor, or Contractor's Agent, to the extent that the cost of such loss is not recovered from insurance carried by the Owner and the Contractor, and any additional expenses for unforeseen difficulties encountered, for settlement of damages and for replacement of defective Work and materials.

D. Before submitting a Bid, the Bidder shall become familiar with the Drawings, Specifications and other documents that will form the Contract, shall investigate the site of the Project (not mandatory) and make such examination thereof as may be necessary to determine the character and amount of Work involved. The Bidder shall also determine that they can secure the necessary labor and equipment and

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that the materials proposed to use will comply with the requirements specified therefore and can be obtained by the Bidder in the quantities and at the time required.

1. **Site visit(s) can be arranged upon request by contacting the Architect (not mandatory): (gduthie@fvhdpc.com/ dschittone@fvhdpc.com/ info@fvhdpc.com).**

E. The Owner reserves the right to accept or reject all bids including Alternate Bids, if any, pursuant to applicable law under any Contract for a period up to sixty (60) days after receipt of bids.

2. ETHICS IN PURCHASING

A. School District Responsibility

1. Recommendation of Purchases
   a. It is the desire of the Board of Education to have all Board employees and officials practice exemplary ethical behavior in the procurement of goods, materials, supplies, and services.
   b. School district officials and employees who recommend purchases shall not extend any favoritism to any vendor. Each recommended purchase should be based upon quality of the items, service, price, delivery, and other applicable factors in full compliance with N.J.S.A. 18A:18A-26 et seq.
   c. Solicitation/Receipt of Gifts - Prohibited:
      1) School district officials and employees are prohibited from soliciting and receiving funds, gifts, materials, goods, services, favors, and any other items of value from vendors doing business with the Board of Education or anyone proposing to do business with the Board of Education.

2. Vendor Responsibility:
   a. Offer of Gifts, Gratuities – Prohibited
      1) Any vendor doing business or proposing to do business with the Board of Education, shall neither pay, offer to pay, either directly or indirectly, any fee, commission, or compensation, nor offer any gift, gratuity, or other thing of value of any kind to any official or employee of the Board of Education or to any member of the official's or employee's immediate family.
   b. Vendor Influence – Prohibited:
      1) No vendor shall cause to influence or attempt to cause to influence, any official or employee of the Board of Education, in any manner which might tend to impair the objectivity or independence of judgment of said official or employee.

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3. Vendor Certification:
    a. Vendors or potential vendors will be asked to certify that no official or employee of the Board of Education or immediate family members are directly or indirectly interested in this request or have any interest in any portions of profits thereof. The vendor participating in this request must be an independent vendor and not an official or employee of the Board of Education.

3. OBLIGATION OF BIDDER

A. At the time of the opening of bids, each Bidder will be presumed to have inspected the site (not mandatory) and to have read and to be thoroughly familiar with the Drawings, Specifications and all other Bid Documents, including all Addenda and Bulletins. The failure or omission of any Bidder to receive or examine any form, instrument or document shall not relieve Bidder from any obligation with respect to their bid. It is recommended the Bidders visit the site and acquaint themselves with the existing conditions.

B. Any and all discrepancies between the Drawings and Specifications or between trades shall be brought to the attention of the Architect prior to the Contractor's bid submission.

4. CHALLENGES TO BID SPECIFICATIONS (N.J.S.A. 18A:18A-15)

A. Any prospective Bidder who wishes to challenge a bid Specification shall file such challenges in writing with the School Business Administrator/Board Secretary no less than three (3) business days prior to the opening of bids. Challenges filed after that date shall be considered void and having no impact on the Board of Education or the award of a Contract.

5. NOTICE OF CLASSIFICATION OF BIDDERS (CONTRACTORS AND PRIME SUBCONTRACTORS)

A. Pursuant to N.J.S.A. 18A:18A-26 et seq., as amended, and N.J.A.C. 17:19-2.1 through N.J.A.C. 17:19-2.7, Bidders and their Prime Subcontractors, on any Contract on public work for a Board of Education (Owner) in the State of New Jersey in which the entire cost of the Contract exceeds $20,000.00, must:

1. Have a Classification from the Division of Property Management and Construction (DPMC), as to character and amount of public work on which they may submit bids. Bidder and their Prime Subcontractors must submit, a "Notice of Classification" setting forth the type of Work and the amount of Work for which the Bidder and their Prime Subcontractors have been qualified;

2. That there has been no material adverse change in their qualification information;

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3. The total amount of uncompleted work on Contracts at the time and the date of the bid due date.

Any Bidder and their Prime Subcontractors who do not possess a valid and active "Notice of Classification" may be ineligible to bid on this Project, and any bid submitted by such Bidder and their Prime Subcontractors may be rejected as non-responsive. (Forms for this purpose are available from the Director of the Division of Property Management and Construction - DPMC, Trenton, New Jersey 08625.)

4. Each classified Bidder's and their Prime Subcontractor's aggregate rating shall be calculated in accordance with formula prescribed by N.J.A.C. 17:19-2.8.
   a. Calculations shall be based on Bidder's base bid amount at time of bid or total amount of base bid and accepted Alternate Bids at time of Award.

B. In accordance with N.J.S.A. 34:11-56.48 et seq. and N.J.S.A. 18A:7G-37, each Bidder must be properly registered with the New Jersey Department of Labor and Workforce Development at the time of the bid. The Contractor shall enter into Subcontracts only with Subcontractors who are registered pursuant to N.J.S.A. 34:11-56.48 et seq.

1. No Contractor/Subcontractor will be permitted to bid on or engage in any Contract for public work, as defined in the "New Jersey Prevailing Wage Act," N.J.S.A. 34:11-56.26 et seq., unless that Contractor / Subcontractor is registered with the New Jersey Department of Labor and Workforce Development at the time of the bid.

C. The Owner may make such additional investigations as it deems necessary to determine the ability of the Bidder to perform the Work, and the Bidder shall furnish to the Owner all such information and data for this purpose as the Owner may request. Pursuant to N.J.S.A. 18A:18A-31, "where there have been developments subsequent to the qualifications and classification of a Bidder which in the opinion of the Owner would affect the responsibility of the Bidder, information to that effect shall forthwith be transmitted to the department for its review and reconsideration of the classification. Before taking final action on any such bid, the Owner concerned shall notify the Bidder and give them an opportunity to present to the department any additional information which might tend to substantiate the existing classification."

6. TOTAL AMOUNT OF UNCOMPLETED CONTRACTS

A. Uncompleted Contracts (For Contracts Exceeding $20,000) (N.J.A.C. 17:19-2.13(a))

1. The Board requires that each Bidder (and their Subcontractors) submit with their bid, a certified Total Amount of Uncompleted Contracts form as prescribed by the cited regulation. (Form DPMC 701). Failure to submit this document will lead to having the bid being rejected as non-responsive.

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7. CHANGES TO BID DOCUMENTS, INTERPRETATIONS AND ADDENDA

A. Changes to the Bid Documents may be required to be issued via Addenda. Fraytak Veisz Hopkins Duthie, P.C (FVHD) Architects - Planners will issue notice of the publication of all Addenda to prospective Bidders, who have obtained Bid Documents from Fraytak Veisz Hopkins Duthie, P.C (FVHD) Architects - Planners. **All Bidders are to check the Fraytak Veisz Hopkins Duthie, P.C (FVHD) Architects - Planners website www.fvhdpc.com and download Addenda if any are issued for the Project.**

1. All Addenda issued become a part of the Bid Documents as though originally incorporated into the Specifications.

2. For the/all Contract(s) for construction Work, notice shall be provided no later than seven days, Saturdays, Sundays, or holidays excepted, prior to the date for acceptance of bids, to any person who has submitted a bid or who has received a bid package in any of the following ways:
   i) in writing by certified mail or;
   ii) by certified facsimile transmission, meaning that the sender's facsimile machine produces a receipt showing date and time of transmission and that the transmission was successful or;
   iii) by a delivery service that provides certification of delivery to the sender.

3. Bidders must acknowledge receipt of all Addenda on the Bid Proposal Form or the bid shall be deemed non-responsive by the Owner.

B. Pre-bid Request for Information: No oral interpretations will be made to any Bidder as to the meaning of the Drawings and Specifications. **All Requests for Information (RFI's) must be submitted in writing by November 21, 2025 and sent by faxing to 609-883-2694; by emailing info@fvhdpc.com; or sent via common carrier to the Architect. All correspondence must include the Architect's Project Name and Project Number. The Architect is not responsible for misdirected or misrouted correspondence.**

Fraytak Veisz Hopkins Duthie, P.C.
Architects / Planners
1515 Lower Ferry Rd., Trenton, NJ 08618
Electronic Facsimile (609) 883-2694
FVHD Project No. 5607

1. Every interpretation made to a Bidder will be in the form of an Addendum. During the bidding period, the Architect may furnish Addenda for additions to or alterations of the Drawings and Specifications, which shall be included in the Work covered by the Bid Proposal Form(s).

2. Addenda, when issued, will be made available no later than seven (7) business days prior to the date for receiving bids, Saturday, Sunday or holidays

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excepted, to all persons who have obtained Bid Documents from the Architect.

3. Addenda will also be available for examination at the Architect's office.

4. It shall be the responsibility of the Bidder to ascertain that they have received and examined all Addenda and Bulletins issued, prior to submitting their bid. Failure of the Bidder to download and examine all Addenda shall not relieve the Bidder from any of the requirements of the Bid Documents.

5. All Addenda will be issued in accordance with N.J.S.A. 18A:18A-21(c).

8. PREPARATION OF BIDS

A. Enclose **two copies (one original and one copy)** of the Bid in a sealed envelope, identified on the outside of the envelope and clearly marked "BID" with the name and address of the Bidder, name of the Project and Contract number in which the Bidder is submitting.

B. Bids shall be submitted on the form of Bid furnished by the Architect, properly filled out and duly executed. Bid Proposal Forms shall not be altered or added to in any way. Lump Sum Bid or Base Bid prices shall be filled in, in ink or typewritten, in both words and figures. In case of discrepancy, the amount described in words shall govern.

1. **Bids containing any conditions, omissions, unexplained erasure or alteration, items not called for in the Bid Proposal Form, attachment of additive information not required by the Specifications, or irregularities of any kind may be rejected by the Owner.**

2. **Any changes, white-outs, strike-outs, etc. on the Bid Proposal Form must be initialed in ink by the person responsible for signing the Bid Proposal Form.**

C. When the Bid is made by an individual, their post office address shall be stated and they shall sign the Bid. When made by a firm or partnership, its name and post office address shall be stated and the Bid shall be signed by one or more of the partners. When made by a corporation, its name and principal post office address shall be stated, and the Bid shall be signed by an authorized official of the corporation.

D. Alternate Bids and Unit Prices for the various portions of Work for Contract shall be as stated in other Sections of the Specifications.

1. Attention is called particularly to the requirements for filling in all Alternate Bids called for on the Bid Proposal Form, as the Owner reserves the right to award a Contract based upon the possible inclusion of one or more such Alternate Bids.

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2. The amounts of the Alternate Bids shall include any and all modifications to related, adjacent or surrounding work made necessary by use of such Alternate Bids.

3. The Alternate Bids must be stated as additions to or deductions from the Base Bid, unless otherwise noted.

4. **The term "No Bid" shall not be used with respect to Alternate Bids and Unit Prices requested on the Bid Proposal Forms. The Bidder who does not desire to make a change from the Base Bid under a particular Alternate Bid shall so indicate by using the words "No Change" or "N/C." Failure to bid or use of the term "No Bid" on any Alternate shall cause rejection of entire bid.**

5. Bidders must bid on every Alternate Bid. Additions to, or deductions from, the base bid shall be indicated in the appropriate blanks on the Bid Proposal Form with additions to or deductions from the base bid filled in as appropriate. If a particular Alternate Bid does not result in an addition to or deduction from the base bid, the words "No Change" or N/C" shall be written in the blank for "No Change" on the Bid Proposal Form, and the words "No Change" shall be written in the blank provided for the purpose of stating the numeric amount in words. Failure to bid on every Alternate Bid shall render the bid nonresponsive and shall cause the bid to be rejected.

9. BID GUARANTEE

A. The Bid, when submitted, shall be accompanied by a Bid Guarantee in the form of a Certified Check, Cashier's Check or acceptable Bid Bond made payable unconditionally to the Owner, in the sum of ten percent (10%) of the Bid, but in no case in excess of $20,000.00 and as per Bid Bond Form included:

1. Bid Bond Form: Bid Bond shall be as per the form included and shall include an effective and current Power of Attorney authorizing the Attorney-in Fact to bind the Surety, on Bid Date and Time, for the full amount of the Bond.

2. Bid shall be accompanied by a Proposition of Surety in accordance with paragraph 1.10.

B. Pursuant to N.J.S.A. 18A:18A-36, all Bid Guarantees, except those of the three apparent lowest responsible Bidders, will be returned, if requested, after ten (10) days from opening of bids, Sundays and holidays excepted. Within three (3) days after the awarding of the Contract and the approval of the Contractor's performance bond and payment bond, the bid security of the remaining unsuccessful Bidders will be returned, Sundays and holidays excepted.

C. The Bid Guarantee shall be forfeited if successful Bidder fails to execute the Agreement between Owner and Contractor identified in paragraph 1.13 hereof and

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furnish the Performance-Payment Bond within ten (10) days after notification of award of Contract to them (Sundays and holidays excepted).

1. Any failure by the successful Bidder to perform its obligations regarding the time, manner, and substance of compliance with Bid Documents in relation to the Award of a Contract, shall constitute an Event of Default, entitling the Owner to:
   a. Demand, from said guarantor, immediate payment of the entire Bid Bond amount, as liquidated damages, not as a penalty, for the delay which is acknowledged and agreed that the Owner will sustain in connection with said Default; and in addition thereto,
   b. Recovery of any and all other Losses incurred by the Owner, to which the Owner shall, to the fullest extent permitted by Applicable Law, be entitled to recover, including without limitation Special Damages.

10. CONTRACT BONDS

A. Prior to start of guarantee period and before the final payment is made, the Contractor shall provide the Owner with a Maintenance Bond in the amount of ten percent (10%) of Final Contract Amount, to insure the replacement or repair of defective materials or workmanship during the two-year guarantee period.

B. Proposition of Surety:

1. Pursuant to N.J.S.A. 18A:18A-25, Bids shall be accompanied by a Proposition of Surety in form as bound in these documents, assuring that satisfactory arrangements have been made between the Surety and the Bidder by which Surety agrees to furnish within ten (10) days after notification of award, Sundays and holidays excepted, of Contract, a Performance Bond and a Payment Bond; each in the amount of 100% of the amount bid.

2. The Proposition of Surety shall be executed by an approved Surety company authorized to do business in the State of New Jersey and in accordance N.J.S.A. 2A:44-143, and with the three highest rating categories of rating companies nationally recognized and listed as per Appendix A (go to www.nj.gov/dobi/surety.htm).

3. If, at any time after execution and approval of a Contract and Performance-Payment Bond required by Bid Documents, such Bond shall cease to be adequate security for the Owner, the Contractor shall, within five (5) days after notice to do so, furnish a new or additional Bond, in form, sum and signed by such Sureties as shall be satisfactory to the Owner. No further payment shall be deemed due nor shall any further payment be made to the Contractor unless and until such new or additional Bond shall be furnished and approved.

C. Prior to start of guarantee period and before the final payment is made, the Contractor shall provide the Owner with a Maintenance Bond in the amount of ten

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percent (10%) of Final Contract Amount, to insure the replacement or repair of defective materials or workmanship during the **two-year** guarantee period.

D. The cost of all Bonds shall be paid for by the Contractor and shall be included as a part of Contractor's bid price.

11. POWER OF ATTORNEY

A. Attorneys-in-fact who sign Bid Bonds, Performance-Payment Bonds, Maintenance Bonds and Proposition of Surety forms must accompany each bond or proposition with a certified and effectively dated copy of their power-of-attorney.

12. FORM OF AGREEMENT

A. The form of agreement shall be AIA Document A132/CMa Standard Form of Agreement between Owner and Contractor, Construction Manager as Advisor, 2019 Edition, and in accordance with AIA Document A232/CMa General Conditions of the Contract, Construction Manager as Advisor, 2019 Edition as amended, and all other documents referenced herein.

13. CERTIFICATE OF AUTHORITY

A. All Bidders are to submit their Sworn Contractor Certification, a current valid "Certificate of Authority" as issued by the New Jersey Department of Treasury. Reference - N.J.S.A. 18A:7G-37.

14. AWARD OF CONTRACT

A. Award, if made, will be to the lowest responsive and responsible Bidder for the Single Overall Building Contract selected to include Alternate Bids, if any, which the Owner chooses to accept, that results in the lowest aggregate total sum pursuant to N.J.S.A. 18A:18A-4.

B. Award made to a Bidder not a resident of the State of New Jersey is conditioned upon Bidder designating a proper agent in the State of New Jersey on whom service can be made in the event of litigation.

C. If the successful Bidder is a corporation not organized under the laws of New Jersey, the award of Contract and payment of consideration thereunder shall be conditioned upon the Corporation procuring a certificate of authority to transact business in the State of New Jersey pursuant to N.J.S.A. 14A:13-3 and complying with the provisions of N.J.S.A.14A:13-4.

D. NJ Business Registration Certificate:

1. Pursuant to N.J.S.A. 52:32-44, Princeton Public Schools ("Owner") is prohibited from entering into a Contract with an entity unless the

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Bidder/proposer/Contractor, and each Subcontractor that is required by law to be named in a bid/proposal/Contract has a valid Business Registration Certificate on file with the Division of Revenue and Enterprise Services within the Department of the Treasury.

2. Prior to Contract award or authorization, the Contractor shall provide the Owner with its proof of business registration and that of any named Subcontractor(s).

3. Subcontractors named in a bid or other proposal shall provide proof of business registration to the Bidder, who in turn, shall provide it to the Owner prior to the time a Contract, purchase order, or other Bid Document is awarded or authorized.

4. During the course of Contract performance:
   a. the Contractor shall not enter into a Contract with a Subcontractor unless the Subcontractor first provides the Contractor with a valid proof of business registration.
   b. the Contractor shall maintain and submit to the Owner a list of Subcontractors and their addresses that may be updated from time to time.
   c. the Contractor and any Subcontractor providing goods or performing services under the Contract, and each of their affiliates, shall collect and remit to the Director of the Division of Taxation in the Department of the Treasury, the use tax due pursuant to the Sales and Use Tax Act, (N.J.S.A. 54:32B-1 et seq.) on all sales of tangible personal property delivered into the State. Any questions in this regard can be directed to the Division of Taxation at (609)292-6400. Form NJ-REG can be filed online at http://www.state.nj.us/treasury/revenue/busregcert.shtml.

5. Before final payment is made under the Contract, the Contractor shall submit to the Owner a complete and accurate list of all Subcontractors used and their addresses.

6. Pursuant to N.J.S.A. 54:49-4.1, a business organization that fails to provide a copy of a business registration, as required, or that provides false business registration information, shall be liable for a penalty of $25 for each day of violation, not to exceed $50,000, for each proof of business registration not properly provided under a Contract with the Owner.

7. Emergency Purchases or Contracts
   a. For purchases of an emergent nature, the Contractor shall provide its Business Registration Certificate within two weeks from the date of purchase or execution of the Contract or prior to payment for goods or services, whichever is earlier.

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E. The Owner reserves the right to reject all bids, or to waive minor informalities or non-material exceptions in a bid, pursuant to applicable law.

F. In accordance with requirements of the N.J.S.A. 18A:18A-36(b), execution of the Contract by all parties will be done within 21 days of the notification of the award date, Sundays and holidays excepted, after making the award.

1. The Bidder to whom the Contract is awarded shall be required to execute said Contract within twenty (20) calendar days of the notification of the award to them, Sundays and holidays excepted, after making the award.

G. Upon award of the Contract, the Contractor shall execute and return to the Owner the "Contractor Certification and Consent Upon Award of Contract," attached to the Contract as an Exhibit.

H. The award of the Contract is subject to availability and appropriation of sufficient funds.

15. BID PROTESTS AND CONTRACTOR'S RESPONSIBILITY

A. Contractors may contact the Purchasing Agent in writing, when they feel it necessary to challenge a procurement Specification item or to protest an award of Contract. All challenges and protests will be reviewed by the Purchasing Agent, the District Administrator of the Contract and the Board Attorney. All determinations shall be made in writing to the Contractor. The Purchasing Agent pursuant to N.J.S.A. 18A:18A-2 (b) is the School Business Administrator.

B. A bid protest filed shall:

1. Include the name, street address, electronic mail address, and telephone and facsimile numbers of the protester;

2. Be signed by the protester or its representative;

3. Identify the bid or solicitation number and date of bid or solicitation;

4. Include a detailed statement of the legal and factual grounds of protest including copies of relevant documents;

5. Set forth all information establishing that the protester is an interested party for the purpose of filing a protest;

6. Set forth all information establishing the timeliness of the protest; and

7. Provide any or all information pertaining to the bid protest.

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16. BID DOCUMENTS

A. The Bid Documents consist of but not limited to the following:

1. Instructions To Bidders in accordance with this Section,

2. General Conditions, AIA Document A232, and as supplemented in the Supplementary General Conditions; Section 00800,

3. Bid Form including attachments as per Bidder's Checklist,

4. Addenda, if issued,

5. Specifications: As outlined in the "Index" included in the Project Manual,

6. Drawings: As per List of Drawings indicated on Project Title Sheet and in accordance with Section 00850,

7. Agreement Between Owner & Contractor, AIA Document A132 and as amended by the Project Specifications.

B. Note: The above list is not intended to establish order of precedence.

17. TIME OF COMPLETION AND LIQUIDATED DAMAGES

A. Refer to Section 01800, "Time of Completion and Liquidated Damages".

18. LISTING OF STOCKHOLDERS, PARTNERS OR MEMBERS (N.J.S.A. 52:25-24.2)

A. Statement of Ownership

1. No business organization, regardless of form of ownership, shall be awarded any Contract for the performance of any work or the furnishing of any goods and services, unless, prior to the receipt of the bid or accompanying the bid of said business organization, Bidders shall submit a statement setting forth the names and addresses of all persons and entities that own ten (10%) percent or more of its stock or interest of any type at all levels of ownership.

2. The included Statement of Ownership shall be completed and attached to the bid proposal. This requirement applies to all forms of business organizations, including, but not limited to, corporations and partnerships, publicly-owned corporations, limited partnerships, limited liability corporations, limited liability partnerships, sole proprietorship, and Subchapter S corporations. Failure to submit a disclosure document shall result in rejection of the bid as it cannot be remedied after bids have been opened.

3. Not-for-profit entities should fill in their name, check the not-for-profit box, and certify the form. No other information is required.

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19. NON-COLLUSION AFFIDAVIT

A. The Bidder shall submit the Non-Collusion Affidavit, on form as bound herein, must be submitted with the bid. Failure to submit this document may lead to having the bid being rejected as non-responsive.

20. FALSE MATERIAL REPRESENTATION / TRUTH IN CONTRACTING

A. A person commits a crime if the person knowingly makes a material representation that is false in connection with the negotiation, award or performance of a government Contract. If the Contract amount is for $25,000.00 or above, the offender is guilty of a crime of the second degree. If the Contract amount exceeds $2,500.00, but is less than $25,000.00, the offender is guilty of a crime of the third degree. If the Contract amount is for $2,500.00 or less, the offender is guilty of a crime of the fourth degree. Bidder should be aware of the following statutes that represent "Truth in Contracting" laws:

1. N.J.S.A. 2C:21-34, governs false claims and representations by Bidders. It is a serious crime for the Bidder to knowingly submit a false claim and/or knowingly make material misrepresentation.

2. N.J.S.A. 2C:27-11 provides that a Bidder commits a crime if said person, directly or indirectly, confers or agrees to confer any benefit not allowed by law to a public servant.

3. Bidder should consult the statutes such as N.J.S.A. 18A:7G-39 or legal counsel for further information.

21. EQUIVALENT PRODUCTS

A. The use of manufacturers' brand names, catalogue numbers and similar proprietary identifying data in the Bid Documents are not intended to eliminate from consideration products that are equivalent in quality, appearance and function to those specified.

22. CONTRACT

A. As indicated in the Advertisement for Bids, the Owner is intended to receive sealed bids and to award and administer the Contract for the work required by the Bid Documents as follows:

Single Overall Contract

B. The Bidder shall be a firm classified by the State of New Jersey - Division of Property Management and Construction for the following classification:

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Prime HVACR Contractor
C032 - HVACR
and have Subcontractor(s) for the following classification(s) of work:

Subcontractors:
C009 - General Construction/Alterations and Additions
C047 - Electrical
C066 - Roofing - Membrane EPDM
C068 - Roofing Membrane Modified Bitumen

C. **Pursuant to N.J.S.A. 18A:18A-26, the Bidder shall be in possession of the required DPMC Classification for the specified Work.**

1. **In the case of a Combined Single Overall Bid, if the Contractor possess the DPMC Classification in one category, but not in all of the required categories, the Contractor must list the Prime Subcontractor(s) bidding the scope of work for the other categories. The Subcontractor(s) must possess the DPMC Classification(s) in that category.**

END OF SECTION 00100

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BID PROPOSAL FORM

SINGLE OVERALL CONTRACT

DPMC Classifications: C032 Prime with C009, C047, C066 & C068 Subcontractors

To: Princeton Public Schools Board of Education
Attn: Andrew Harris
25 Valley Road, Princeton, NJ 08540

1. The undersigned, having familiarized themself with the local conditions affecting the cost of the work, the Drawings, the Specifications and other Bid Documents, as in the Advertisement for Bids thereto, for the **HVAC Equipment Replacement at Princeton Middle School (FVHD-5607)** , 217 Walnut Lane, Princeton, NJ 08540, together with all work incidental thereto, in accordance with the requirements of the Drawings and Specifications prepared by Fraytak Veisz Hopkins Duthie, P.C., Architects/Planners, Trenton, New Jersey, hereby proposes to furnish all labor, materials and equipment required for all Work and as follows:

   SINGLE OVERALL CONTRACT - BASE BID: All Work at the above referenced school, including applicable Allowances - Section 01020, in accordance with the requirements of Bid Documents. If written amount differs from the numerical figure, only the written amount will be accepted as the correct bid.

   TOTAL BASE BID INCLUDING ALLOWANCE: $_____
   (Numerical)

   _____
   (To be written in full)

2. **Alternate Proposal(s) - Section 01030** shall be quoted as additions to, deductions from or No Change (NC) to the Base Bid and shall be in accordance with the specifications for Alternate Bid Work. If written amount differs from the numerical figure, only the written amount will be accepted as the correct bid.

   Alternate Bid No. 1: Removal and Replacement of Existing Rooftop Unit Serving the Boy's Locker Room (HVN-L1) ADD $_____

   _____
   (To be written in full)

   Alternate Bid No. 2: Removal and Replacement of Existing Rooftop Unit Serving the Girl's Locker Room (HVN-L2) ADD $_____

   _____
   (To be written in full)

   Alternate Bid No. 3: Removal and Replacement of Existing Rooftop Unit Serving the CST Suite (AHU-N-2) ADD $_____

   _____
   (To be written in full)

Submitted by: _____
(Firm Name)

3. **<u>UNIT PRICES - SECTION 01151:</u> Materials in Place.**

<u>UNIT PRICES - GENERAL CONSTRUCTION</u>: Materials in Place.

Replacement of existing damaged or deteriorated metal decking	$_____ per sq. ft.
Replacement of existing wet or deteriorated roof insulation board	$_____ per sq. ft.
Replacement of existing damaged or deteriorated wood nailers / blocking or framing, including removal of existing deteriorated wood, furnishing and installing new galvanized anchor bolts, expansion bolts at 4'-0" o.c. or nails through existing construction to remain:	$ **2.90** per board ft.
a. 2x4 for the above work	$_____ per lin. ft.
b. 2x6 for the above work	$_____ per lin. ft.
c. 2x8 for the above work	$_____ per lin. ft.
d. 2x10 for the above wor	$_____ per lin. ft.
e. 2x12 for the above work	$_____ per lin. ft.

THE REMAINDER OF THIS PAGE WAS INTENTIONALLY LEFT BLANK

Submitted by:_____
(Firm Name)

4. Bidder hereby acknowledges receipt of the following Addenda:
   No Addenda Issued ☐
   Addendum No.___, issued_____ received_____(initial)
   Addendum No.___, issued_____ received_____(initial)
   Addendum No.___, issued_____ received_____(initial)
   Addendum No.___, issued_____ received_____(initial)

5. In submitting this bid, it is understood that the right is reserved by the Owner to accept or to reject bids pursuant to N.J.S.A. 18A:18-22 and any bid that is non-responsive or submitted by a Bidder that is not responsible, and it is agreed that this bid may not be withdrawn for a period of sixty (60) days from the date set of the opening thereof.

6. Bid Security in the sum of_____($_____)
   in the form of _____ (Certified Check, Cashier's Check, or Bid Bond) is submitted herewith in accordance with the requirements of the Specifications.

7. The undersigned is an individual ( )
   a partnership ( )
   a corporation ( ) under the laws of the State of _____,
   having principal office in the _____ of _____, County
   of _____, and State of _____.

Respectfully Submitted,

_____
(Company Name, if Bidder is a company)

BIDDER'S SIGNATURE

_____
(Company Officer, if Bidder is a Corporation or LLC)

(Seal, if Corporation)

_____
Printed or Typed Name Title of Officer (if the Bidder is a Company)

_____
Address

_____
City, State, Zip Code

_____
Phone & Fax

_____
Dated

_____
Email Address

NOTE: SEE BIDDERS CHECKLIST

Submitted by:_____
(Firm Name)

BIDDER'S CHECKLIST

The following checklist must be signed and submitted with the bid package to the Owner as part of the Bid Documents. Bidders are encouraged to submit all items listed below with the bid. All must be provided prior to award of the contract. Failure to submit documents marked (*) mandatory may be cause for rejection of the bid.

	Reviewed the Bid Documents (Including the permits obtained by the Owner), satisfied themselves regarding the character of the reviewed locality, and all local conditions and Laws and Regulations That in any manner may affect cost, progress, performance or furnishing of work.	
	Reviewed General Bond Requirements	
	Reviewed the Contract Documents contained herein (Owner/Contractor)	
	ITEM	
(*)	Bidder's Proposal	
(*)	Bid Bond, Certified Check, Cashier's Check or Any Combination Thereof in an Amount of Ten Percent (10%) of the Total Amount of Bid, Not to Exceed $20,000 (Twenty Thousand Dollars) with Power of Attorney	
(*)	Consent of Surety for 100% of the Contract Amount with Power of Attorney to Provide Performance Bond and Labor and Material Payment Bond If Surety is being provided for Subcontractors by Bidder, indicate here _____ Initial	
(*)	Subcontractor Identification Statement	
(*)	Statement of Ownership Disclosure Certification	
(*)	Division of Property Management & Construction (DPMC) Form 701 - Total Amount of Uncompleted Contracts, N.J.A.C. 17:19-2.13 All Contractor(s) and Named Subcontractor(s)	
(*)	Division of Property Management & Construction (DPMC) Current Notice of Classification - All Contractor(s) and Named Subcontractor(s)	
(*)	Certification of No Material Change of Circumstances - All Contractor(s)	
(*)	Non Collusion Affidavit	
(*)	Equipment Certification	
	Prevailing Wage Certification	
	Public Works Contractors Registration Act Certificate (N.J.S.A. 34:11-56.48) All Contractor(s) and Named Subcontractor(s)	
	Business Registration Certificate - All Contractor(s) and Subcontractor(s)	
	Federal and State Non-debarment Certifications - All Contractor(s) and Subcontractor(s)	
	Certification of non Debarment for Federal Government Projects - All Contractors	
	Trade License - All Contractor(s) and Subcontractor(s)	
	HVACR Master License (HVACR Contractors)	

BIDDER'S CHECKLIST

	Compliance with New Jersey Prevailing Wage Act	
	Certification of Insurance Statement	
	Political Contribution Disclosure Form	
	Prohibited Russia-Belarus Activities & Iran Investment Activities	
	Americans with Disabilities Act Language	
	Mandatory Equal Employment Opportunity Language	
	Status of Present Contracts	
	Performance Record Certification	
	Contractor(s) shall participate in an "apprenticeship training program" and shall submit evidence of same and/or a description of the Contractor's apprenticeship training program prior to the award of the Contract.	

By signing below, I acknowledge having read and fully understand all the requirements of each of the documents referenced herein.

_____
BIDDER (Signature)

Dated:_____

_____
BIDDER (Print Name)

BID BOND

THE UNDERSIGNED BIDDER and **"Surety"**, a corporation duly authorized to transact business in the State of New Jersey, are held and firmly bound unto _____ (the **"OWNER"**) for the full and just sum of:

_____ Dollars ($_____),
(10% of the Bid Price not to exceed $20,000.00: words) **(figures)**

The payment of which sum the **BIDDER** has submitted a Bid to perform certain Work described in Bidding Documents entitled:

TITLE: _____

_____

CONTRACT NO.: _____

The **Surety** hereby agrees to pay the full face value of this Bond to the **OWNER**, as Liquidated Damages, and not as a penalty, unless this Bond is void.

This Bond shall only be void if the **BIDDER** well, truly and faithfully performs all requirements contained in the Bidding/Contract Documents incident to an Award of the Contract including, but not limited to, proper execution and submission of the Contract Forms and all other required documentation.

On this _____ day of _____ 20___, the **BIDDER** and **Surety** hereby bind themselves herein:

FOR THE BIDDER:	**FOR THE SURETY:**
_____	_____
(Name of **BIDDER**)	(Name of **Surety**)
By:_____	By:_____
(Print Name-**BIDDER's** Authorized Representative)	(Print Name of Attorney-in-Fact)
By:_____	By:_____
(Signature-**BIDDER's** Authorized Representative)	(Signature of Attorney-in-Fact)

IMPORTANT – ATTACH AND SUBMIT WITH THE BID:

- **A POWER OF ATTORNEY FOR THE ATTORNEY-IN-FACT WHICH IS CURRENTLY DATED AND VALID FOR THE ENTIRE AMOUNT OF THE BOND**

FORM OF CONSENT OF SURETY

PERFORMANCE BOND, PAYMENT BOND and MAINTENANCE BOND

For and in consideration of the sum of one dollar ($1.00) lawful money of the United States, the receipt is hereby acknowledged, paid to the undersigned surety, and for other valuable consideration, the undersigned surety, authorized to transact business in the State of _____, certifies and agrees that if the Contract entitled: _____

_____

CONTRACT _____, _____
(NUMBER) (TITLE)

is awarded to: _____
(BIDDER'S NAME)

the undersigned hereby warrants that it is in all respects qualified to provide the required Bonds as set forth in the Contract Documents, and that it will provide and execute the **Performance Bond** in the full amount of awarded contract in the event that said contractor is awarded a contract for the above project, the **Payment Bond**, and the **Maintenance Bond** in the form and as otherwise required by the Contract Documents.

_____
(Print Name of Surety)

_____ _____
(Print Name of Attorney-in-Fact) (Signature of Attorney-in-Fact)

ATTACH AND SUBMIT WITH THE BID: A POWER OF ATTORNEY FOR THE ATTORNEY -IN-FACT WHICH IS CURRENTLY DATED AND VALID FOR THE TOTAL AMOUNT OF ALL BONDS.

Consent of Surety must be signed by an authorized agent or representative of a surety company and not by the individual or company representative submitting the bid.

NOTE: IF SUBCONTRACTORS ARE LISTED ON BID FORM, N.J.S.A. 18A:18A-18 REQUIRES THAT EVIDENCE OF PERFORMANCE SECURITY AS TO SUBCONTRACTORS BE SUBMITTED WITH THE BID, EITHER BE THE BIDDER ON ITS OWN BEHALF AND ON BEHALF OF ALL LISTED SUBCONTRACTORS, OR BY EACH SUBCONTRACTOR, OR ANY COMBINATION THEREOF, PROVIDED THAT THE PERFORMANCE SECURITY IN TOTAL EQUALS, BUT DOES NOT EXCEED, THE TOTAL AMOUNT OF THE BID.

SUBCONTRACTOR IDENTIFICATION STATEMENT

The following information is to be provided in the case of all subcontractors who will furnish labor of the various trades governed by N.J.S.A. 18A:18A-18 (b) (General Construction, Steel, Plumbing, HVAC, Electric).

TRADE	**Contractor's Name/Address/Telephone**	**NJ License No.**

If work of the types designated by the above referenced law will be performed by the Bidder, the Bidder shall state below and shall enclose copies of licenses covering each trade.

TRADE	**N.J. License No.**

BIDDER _____

STATEMENT OF OWNERSHIP DISCLOSURE

N.J.S.A. 52:25-24.2 (P.L. 1977, c.33, as amended by P.L. 2016, c.43)

This statement shall be completed, certified to, and included with all bid and proposal submissions. Failure to submit the required information is cause for automatic rejection of the bid or proposal.

Name of Organization: _____

Organization Address: _____

Part I Check the box that represents the type of business organization:

☐Sole Proprietorship (skip Parts II and III, execute certification in Part IV)

☐Non-Profit Corporation (skip Parts II and III, execute certification in Part IV)

☐For-Profit Corporation (any type) ☐Limited Liability Company (LLC)

☐Partnership ☐Limited Partnership ☐Limited Liability Partnership (LLP)

☐Other (be specific): _____

Part II

☐ The list below contains the names and addresses of all stockholders in the corporation who own 10 percent or more of its stock, of any class, or of all individual partners in the partnership who own a 10 percent or greater interest therein, or of all members in the limited liability company who own a 10 percent or greater interest therein, as the case may be. (**COMPLETE THE LIST BELOW IN THIS SECTION**)

OR

☐ No one stockholder in the corporation owns 10 percent or more of its stock, of any class, or no individual partner in the partnership owns a 10 percent or greater interest therein, or no member in the limited liability company owns a 10 percent or greater interest therein, as the case may be. (**SKIP TO PART IV**)

(Please attach additional sheets if more space is needed):

Name of Individual or Business Entity	Home Address (for Individuals) or Business Address

Part III DISCLOSURE OF 10% OR GREATER OWNERSHIP IN THE STOCKHOLDERS, PARTNERS OR LLC MEMBERS LISTED IN PART II

If a bidder has a direct or indirect parent entity which is publicly traded, and any person holds a 10 percent or greater beneficial interest in the publicly traded parent entity as of the last annual federal Security and Exchange Commission (SEC) or foreign equivalent filing, ownership disclosure can be met by providing links to the website(s) containing the last annual filing(s) with the federal Securities and Exchange Commission (or foreign equivalent) that contain the name and address of each person holding a 10% or greater beneficial interest in the publicly traded parent entity, along with the relevant page numbers of the filing(s) that contain the information on each such person. **Attach additional sheets if more space is needed**.

Website (URL) containing the last annual SEC (or foreign equivalent) filing	Page #'s

Please list the names and addresses of each stockholder, partner or member owning a 10 percent or greater interest in any corresponding corporation, partnership and/or limited liability company (LLC) listed in Part II **other than for any publicly traded parent entities referenced above**. The disclosure shall be continued until names and addresses of every noncorporate stockholder, and individual partner, and member exceeding the 10 percent ownership criteria established pursuant to N.J.S.A. 52:25-24.2 has been listed. **Attach additional sheets if more space is needed.**

Stockholder/Partner/Member and Corresponding Entity Listed in Part II	Home Address (for Individuals) or Business Address

Part IV Certification

I, being duly sworn upon my oath, hereby represent that the foregoing information and any attachments thereto to the best of my knowledge are true and complete. I acknowledge: that I am authorized to execute this certification on behalf of the bidder/proposer; that the _____ (Owner) is relying on the information contained herein and that I am under a continuing obligation from the date of this certification through the completion of any contracts with ***Owner*** to notify the ***Owner*** in writing of any changes to the information contained herein; that I am aware that it is a criminal offense to make a false statement or misrepresentation in this certification, and if I do so, I am subject to criminal prosecution under the law and that it will constitute a material breach of my agreement(s) with the, permitting the ***Owner*** to declare any contract(s) resulting from this certification void and unenforceable.

Full Name (Print):		Title:	
Signature:		Date:	

NON-COLLUSION AFFIDAVIT

STATE OF NEW JERSEY/_____
(Specify, if Other)

COUNTY OF _____

I, _____ , of the (City, Town, Borough) of

_____State of _____ , of full age, being duly sworn according to law on my oath depose and say that:

I am _____ of the firm of _____, the Bidder making the Proposal for the above named Projects, and that I executed the said Proposal with full authority to do so; that said Bidder has not, directly or indirectly, entered into any agreement, participated in any collusion, or otherwise taken any action in restraint of free, competitive bidding in connection with the above named Project; and that all statements contained in said Proposal and in this affidavit are true and correct, and made with full knowledge, and the State of New Jersey relies upon the truth of the statements contained in this affidavit in awarding the contract for the said Project.

I further warrant that no person or selling agency has been employed or retained to solicit or secure such contract upon an agreement or understanding for a commission, percentage, brokerage or contingent fee, except bona fide employees or bona fide established commercial or selling agencies maintained by _____ . (Name of Contractor)

By: _____
(Signature of Authorized Representative)

Subscribed and sworn to before me
this _____ day of _____, 20___.

_____

(Seal) Notary Public of New Jersey/
Specify Other State
My Commission Expires _____, 20___.

THIS FORM MUST BE COMPLETED, SIGNED, NOTARIZED, AND SUBMITTED WITH BID

EQUIPMENT CERTIFICATION

Title of Bid: _____

Bid No. _____ Bid Date: _____
(Weekday, Month 00, 20__)

In accordance with N.J.S.A. 18A:18A-23, I hereby certify that

A) _____ *(Name of Company)* owns all the necessary equipment as required by the specifications and to complete the specified public work project.

or

B) _____ *(Name of Company)* leases or controls all the necessary equipment as required by the specifications and to complete the specified public work project.

PLEASE NOTE: If your company is not the actual owner of the equipment, **you shall submit with the bid**

1. A certificate stating the source from which the equipment will be obtained and
2. Obtain and submit with the bid a certificate from the owner and person in control of the equipment, definitely granting to the bidder the control of the equipment required during such time it may be necessary for the completion of that portion of the contract for which said equipment will be necessary.

Name of Company _____

Authorized Agent _____ Title _____

Authorized Signature _____

Compliance with New Jersey Prevailing Wage Act (N.J.S.A. 34:11-56.25 et seq.)

Every Contractor and Subcontractor performing services in connection with this Project, shall pay all workers a wage rate not less than the published prevailing wage rates, for the locality the work is being performed, as designated by the New Jersey Department of Labor and Workforce Development (NJ DLWD).

Wage rates for the county of the location of the Public Agency (Owner), as published by the State Department of Labor and Workforce Development (DLWD), can be viewed at https://www.nj.gov/labor/wagehour/wagerate/prevailing_wage_determinations.html

The Contractor must complete and sign the "Prevailing Wage Certification" form included in the bid package and submit with his bid. This form confirms the Contractor's intention to comply with the Act. The Owner may terminate the contract if Contractor fails to pay workers prevailing wage. The prevailing wage rates in affect at the time of award, will be included by Owner as a part of the construction contract.

Public Law S-1442/A-5345, now P.L. 2023, c. 138, requires public works contractors to register and certify payroll for public works projects to be completed online at https://njwage.nj.gov

PREVAILING WAGES COMPLIANCE CERTIFICATION

It is the determination that this is a public works project that in total will exceed $2,000.00 (two thousand dollars), therefore prevailing wages rules and regulations apply as promulgated by the New Jersey Prevailing Wage Act and in conformance with N.J.S.A. 34:11-56:25 et seq.

Certification

1. I certify that our company understands that this project requires prevailing wages to be paid in full accordance with the law.

2. I further certify that all subs named in this bid understand that this project requires the sub to pay prevailing wages in full accordance with the law.

Non-compliance Statement

If it is found that any worker, employed by the Contractor or any Subcontractor covered by said contract, has been paid a rate of wages less than the prevailing wage required to be paid by such contract, the Owner, may begin proceedings to terminate the Contractor's or Subcontractor's right to proceed with the work, or such part of the work as to which there has been a failure to pay required wages and to prosecute the work to completion or otherwise. The Contractor and his sureties shall be liable for any excess costs occasioned thereby to the public body.

NOTIFICATION OF VIOLATIONS – New Jersey Department of Labor and Workforce Development

Has the Bidder or any person having an "interest" with the Bidder, been notified by the New Jersey Department of Labor and Workforce Development by notice issued pursuant to N.J.S.A. 34:11-56a et seq that he/she has been in violation for failure to pay prevailing wages as required by the New Jersey Prevailing Wage Act within the last five (5) years?

*Yes_____ No_____

*If yes, please attach a signed document explaining any/or all administrative proceedings with the Department within the last five (5) years. Please include any pending administrative proceedings with the Department if any.

Submission of Certified Payroll Records

NJ Public Law S-1442/A-5345, now P.L.2023, c.138, requires public works contractors to register and certify payroll online for public works projects at https://njwages.nj.gov.

Name of Company _____

Authorized Agent _____

Authorized Signature _____

CERTIFICATION OF NON-DEBARTMENT FOR
FEDERAL GOVERNMENT CONTRACTS
N.J.S.A. 52:32-44.1 (P.L. 2019, c.406)

Public Works Contracts

Project No._____ Title of Bid_____

This certification shall be completed, certified to, and submitted to the contracting unit **prior to contract award**, except for emergency contracts where submission is required prior to payment.

PART I: VENDOR INFORMATION	
Individual or Organization Name	
Address of Individual or Organization	
DUNS Code (if applicable)	
CAGE Code (if applicable)	
Check the box that represents the type of business organization:	

☐Sole Proprietorship ☐Non-Profit Corporation (skip Parts III and IV)

☐For-Profit Corporation (any type) ☐Limited Liability Company (LLC) ☐Partnership

☐Limited Partnership ☐Limited Liability Partnership (LLP)

☐Other (be specific): _____

PART II – CERTIFICATION OF NON-DEBARMENT: Individual or Organization			
I hereby certify that the **individual or organization listed above in Part I** is not debarred by the federal government from contracting with a federal agency. I further acknowledge: that I am authorized to execute this certification on behalf of the above- named organization; that the _____ **("OWNER")** is relying on the information contained herein and that I am under a continuing obligation from the date of this certification through the date of contract award by **"OWNER"** to notify the **"OWNER"** in writing of any changes to the information contained herein; that I am aware that it is a criminal offense to make a false statement or misrepresentation in this certification, and if I do so, I am subject to criminal prosecution under the law and that it will constitute a material breach of my agreement(s) with the **"OWNER"**, permitting the **"OWNER"** to declare any contract(s) resulting from this certification void and unenforceable.			
Full Name (Print):		Title:	
Signature:		Date:	

PART III – CERTIFICATION OF NON-DEBARMENT: Individual or Entity Owning	
Section A	
☐	Below is the name and address of the stockholder in the corporation who owns more than 50 percent of its voting stock, or of the partner in the partnership who owns more than 50 percent interest therein, or of the member of the limited liability company owning more than 50 percent interest therein, as the case may be.
Name of Individual or Organization	
Address	
OR	
☐	No one stockholder in the corporation owns more than 50 percent of its voting stock, or no partner in the partnership owns more than 50 percent interest therein, or no member in the limited liability company owns more than 50 percent interest therein, as the case may be.
Section B (Skip if no Business entity is listed in Section A above)	
☐	Below is the name and address of the stockholder in the corporation who owns more than 50 percent of the voting stock of the organization's parent entity, or of the partner in the partnership who owns more than 50 percent interest in the organization's parent entity, or of the member of the limited liability company owning more than 50 percent interest in organization's parent entity, as the case may be.
Stockholder/Partner/Member Owning Greater Than 50 Percent of Parent Entity	
Address	
OR	
☐	No one stockholder in the parent entity corporation owns more than 50 percent of its voting stock, no partner in the parent entity partnership owns more than 50 percent interest therein, or no member in the parent entity limited liability company owns more than 50 percent interest therein, as the case may be.

I hereby certify that no individual or organization that is debarred by the federal government from contracting with a federal agency owns greater than 50 percent of the **Organization listed above in Part I** or, if applicable, owns greater than 50 percent of a parent entity of _____ ***(name of organization)***. I further acknowledge: that I am authorized to execute this certification on behalf of the above-named organization; that the **("OWNER")** is relying on the information contained herein and that I am under a continuing obligation from the date of this certification through the date of contract award **"OWNER"** to notify the **"OWNER"** in writing of any changes to the information contained herein; that I am aware that it is a criminal offense to make a false statement or misrepresentation in this certification, and if I do so, I am subject to criminal prosecution under the law and that it will constitute a material breach of my agreement(s) with the **"OWNER"**, permitting the **"OWNER"** to declare any contract(s) resulting from this certification void and unenforceable.

Full Name (Print):		Title:	
Signature:		Date:	

Part IV – CERTIFICATION OF Non-Debarment: Contractor – Controlled

Section A	
☐	Below is the name and address of the corporation(s) in which the **Organization listed in Part I** owns more than 50 percent of voting stock, or of the partnership(s) in which the **Organization listed in Part I** owns more than 50 percent interest therein, or of the limited liability company or companies in which the **Organization listed above in Part I** owns more than 50 percent interest therein, as the case may be.

Name of Business Entity	**Business Address**

Add additional sheets if necessary

OR	
☐	The **Organization listed above in Part I** does not own greater than 50 percent of the voting stock in any corporation and does not own greater than 50 percent interest in any partnership or any limited liability company.

Section B (skip if no business entities are listed in Section A of Part IV)	
☐	Below are the names and addresses of any entities in which an entity listed in Part III A owns greater than 50 percent of the voting stock (corporation) or owns greater than 50 percent interest (partnership or limited liability company).

Name of Business Entity Controlled by Entity Listed in Section A of Part IV	Business Address

Add additional Sheets if necessary

OR

☐	No entity listed in Part III A owns greater than 50 percent of the voting stock in any corporation or owns greater than 50 percent interest in any partnership or limited liability company.

Section C – Part IV Certification of Non-Debarment

I hereby certify that the **Organization listed above in Part I** does not own greater than 50 percent of any entity that that is debarred by the federal government from contracting with a federal agency and, if applicable, does not own greater than 50 percent of any entity that in turns owns greater than 50 percent of any entity debarred by the federal government from contracting with a federal agency. I further acknowledge: that I am authorized to execute this certification on behalf of the above-named organization; that the **("OWNER")** is relying on the information contained herein and that I am under a continuing obligation from the date of this certification through the date of contract award by **"OWNER"** to notify **"OWNER"** in writing of any changes to the information contained herein; that I am aware that it is a criminal offense to make a false statement or misrepresentation in this certification, and if I do so, I am subject to criminal prosecution under the law and that it will constitute a material breach of my agreement(s) with the **"OWNER"**, permitting the **"OWNER"** to declare any contract(s) resulting from this certification void and unenforceable.

Full Name (Print):		Title:	
Signature:		Date:	

FEDERAL AND STATE NON-DEBARMENT CERTIFICATIONS

I, _____ of the city of _____, in the County of _____ and the State of _____, of full age, certify that the entity listed on the form and/or any person or company employed by this entity, are not presently on the following:

- New Jersey Department of Treasury – Consolidated Debarment Report
- New Jersey Department of Labor – Prevailing Wage Debarment List
- Federal Debarred Vendor List – System for Award Management (SAM.gov)

Company Name: _____

Authorized Agent: _____

Signature: _____

Date: _____

CERTIFICATION OF INSURANCE STATEMENT

The Bidder fully understands the Owner's insurance requirements as stated in the Bid Documents and agrees to provide all insurance required by these documents at award of contract.

_____

COMPANY NAME

_____

BIDDER (Signature)

_____

BIDDER (Print Name)

Note: Failure to sign this document may result in the rejection of your Proposal.

CERTIFICATION OF INSURANCE STATEMENT

SAMPLE INSURANCE FORMS.xls: SCHOOL DISTRICT

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY)
01/01/03

PRODUCER:

XYZ Insurance
123 Any Street
Anywhere, NJ 12345

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AMMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW.

INSURERS AFFORDING COVERAGE

INSURED

School District
123 State St
Anywhere, NJ 12345

INSURER A:
INSURER B:
INSURER C:
INSURER D:
INSURER E:

COVERAGES

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. AGGREGATE LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	POLICY NUMBER	POLICY EFFECTIVE DATE (MM/DD/YY)	POLICY EXPIRATION DATE (MM/DD/YY)	LIMITS	
	GENERAL LIABILITY		01/01/03	01/01/04	EACH OCCURRENCE	$ 1,000,000
	✓ COMMERCIAL GENERAL LIABILTY				FIRE DAMAGE	$
	CLAIMS MADE				MED EXP	$
	AUTOMOBILE LIABILTY		01/01/03	01/01/04	COMBINED SINGLE LIMIT	$ 1,000,000
	✓ ANY AUTO				BODILY INJURY (per person)	$
	ALL OWNED AUTOS				BODILY INJURY (per accident)	$
	SCHEDULED AUTOS				PROPERTY DAMAGE	$
	✓ HIRED AUTOS					
	✓ NON-OWNED AUTOS					
	GARAGE LIABILTY				AUTO ONLY - EA ACCIDENT	$
	ANY AUTO				OTHER THAN AUTO ONLY:	$
					EACH ACCIDENT	$
					AGGREGATE	$
	EXCESS LIABILITY		01/01/03	01/01/04	EACH OCCURRENCE	$ 4,000,000
	✓ UMBRELLA FORM				AGGREGATE	$
	PROPERTY		START OF CONSTRUCTION	END OF CONSTRUCTION	STATED VALUE	$ project cost
	✓ BUILDER'S RISK					
	Builder's risk must be for Total Project cost less any excavations, foundations, or other structures normally excluded.					
	WORKERS COMPENSATION AND		01/01/03	01/01/04	X WC STATUTORY LIMITS	
	EMPLOYERS' LIABILITY				EL EACH ACCIDENT	$ 500,000
					EL DISEASE-POLICY LIMIT	$
					EL DISEASE-EA EMPLOYEE	$
	OTHER					

SAMPLE

DESCRIPTION OF OPERATIONS/LOCATIONS/VEHICLES/SPECIAL ITEMS

Listing of Additional Insured

The Owner, Architect, Construction Manager, THE STATE OF NJ, NJ DEPARTMENT OF EDUCATION, NJ SCHOOLS DEVELOPMENT AUTHORITY, AND NJ ECONOMIC DEVELOPMENT AUTHORITY ARE NAMED AS ADDITIONAL INSURED WITH RESPECT TO COMMERCIAL GENERAL LIABILTY, AUTOMOBILE LIABILITY, & BUILDER'S RISK AS LOSS PAYEES AS THERE INTEREST MAY APPEAR.

CERTIFICATE HOLDER	CANCELLATION
	SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, THE ISSUING COMPNAY WILL ENDEAVOR TO MAIL 30 DAYS WRITTEN NOTICE TO THE CERTIFICATE HOLDER NAMED TO THE LEFT. BUT FAILURE TO MAIL SUCH NOTICE SHALL IMPOSE NO OBLIGATION OR LIABILITY OF ANY KIND UPON THE COMPANY, ITS AGENTS OR REPRESENTATIVES.
	AUTHORIZED REPRESENTATIVE

CERTIFICATION OF NO MATERIAL CHANGE OF CIRCUMSTANCES

Bidder's Name: _____

Address: _____

1. A statement as to the financial ability, adequacy of plant equipment, organization and prior experience of the Bidder, as required by N.J.S.A. 18A:18A-28 has been submitted to the Department of Treasury within the last twelve (12) months preceding the date of opening of bids for this contract.

2. I certify, as required by N.J.S.A. 18A:18A-32, that there has been no material adverse change in the qualification except:

   _____

   _____

   _____

   _____

_____
(Name and Title of Signer - Please print or type)

_____ _____
(Signature) (Date)

STATUS OF PRESENT CONTRACTS

PURSUANT TO N.J.A.C. 17:19-2.13, BIDDER DECLARES THE FOLLOWING WITH RESPECT TO ITS UNCOMPLETED CONTRACTS, ON ALL WORK, FROM WHATEVER SOURCE (PUBLIC AND PRIVATE), BOTH IN NEW JERSEY AND FROM OTHER GOVERNMENTAL JURISDICTIONS.

- **Each classified bidder's aggregate rating shall be calculated in accordance with formula prescribed by N.J.A.C. 17:19-2.8.**
- **Calculations shall be based on Bidder's base bid amount only at time of bid or total amount of base bid and accepted Alternate Bids at time of Award.**

Entity	Project Title	Original Contract Amount	Uncompleted Amount As of Bid Opening Date	Name and Telephone Number of Party To Be Contacted From Entity For Verification

Sworn and Subscribed to before me
this_____day of_____, 20___

BIDDER

_____
Notary Public

_____
(Print and Signature)

PERFORMANCE RECORD

How many years has your organization been in business as a Contractor under your present business name? _____

How many years experience in construction work has your organization had:
(a) As a Prime contractor? _____ (b) As a subcontractor? _____

What is the construction experience of the principal individuals of your organization?

Individual's Name	Present Position or Office	Years of Constr. Experience	Magnitude and Type of Work	In What Capacity

Have you ever failed to complete any work contracted to you? _____

If so, where and why? _____

_____

Has any officer or partner of your organization ever failed to complete a construction contract handled in its own name?

_____

If so, state name of individual, name of owner, location and type of project and reason for the failure to complete.

_____

_____

PERFORMANCE RECORD (Continued)

List of all contracts completed by you.

Name of Owner	Name & Location of Project/ Type of Work	Prime or Sub-Contractor	Architect or Engineer in Charge for Owner	Contract Price (Omit Cost)	Date Completed	Was* Time Extension Necessary	Were any Penalties Imposed	Were* Liens Claims or Stop Notice Filed

*Explain "Yes" answers.

PERFORMANCE RECORD
CERTIFICATION

Explanation of details in connection with non-completion of contracts, time extensions, penalties imposed, labor troubles experience, liens, termination of contracts, poor performance, debarment, claims and notices filed against contracts.

_____

_____

_____

_____

_____

The information above is true and complete to the best of my knowledge and belief.

_____
(Name of Organization)

_____
(Signature)

_____
(Title)

STATE OF)
)ss.
COUNTY OF)

_____, being duly sworn to law, deposes and says that it is authorized to make this affidavit for, and on behalf of, the individual, partnership or corporation herein first named as the Bidder, that deponent is familiar with the books of the said Bidder and that the foregoing statement is a true and accurate statement taken from the books of said Bidder of such financial condition as of the date herein first named; that the answers to the foregoing interrogatories are true and correct.

Subscribed and sworn to before me

This _____ day of _____, 20___

_____
(Signature)

_____
(Seal) Notary Public of New Jersey/
Specify Other State
My Commission Expires_____, 20___.

C. 271 POLITICAL CONTRIBUTION DISCLOSURE FORM

Contractor Instructions

Business entities (contractors) receiving contracts from a public agency that are NOT awarded pursuant to a "fair and open" process (defined at N.J.S.A. 19:44A-20.7) are subject to the provisions of N.J.S.A. 19:44A-20.26. This law provides that 10 days prior to the award of such a contract, the contractor shall disclose contributions to:

- any continuing political committee (a.k.a., political action committee)
- any candidate committee of a candidate for, or holder of, an elective office:
    - of the public entity awarding the contract
    - of that county in which that public entity is located
    - of another public entity within that county
    - or of a legislative district in which that public entity is located or, when the public entity is a county, of any legislative district which includes all or part of the county

The disclosure must list reportable contributions to any of the committees that exceed $200 per election cycle that were made during the 12 months prior to award of the contract. See N.J.S.A. 19:44A-8 and 19:44A-16 for more details on reportable contributions.

N.J.S.A. 19:44A-20.26 itemizes the parties from whom contributions must be disclosed when a business entity is not a natural person. This includes the following:

- individuals with an "interest" ownership or control of more than 10% of the profits or assets of a business entity or 10% of the stock in the case of a business entity that is a corporation for profit
- all principals, partners, officers, or directors of the business entity or their spouses
- any subsidiaries directly or indirectly controlled by the business entity
- IRS Code Section 527 New Jersey based organizations, directly or indirectly controlled by the business entity and filing as continuing political committees, (PACs).

When the business entity is a natural person, "a contribution by that person's spouse or child, residing therewith, shall be deemed to be a contribution by the business entity." [N.J.S.A. 19:44A-20.26(b)] The contributor must be listed on the disclosure.

Any business entity that fails to comply with the disclosure provisions shall be subject to a fine imposed by ELEC in an amount to be determined by the Commission which may be based upon the amount that the business entity failed to report.

The enclosed list of agencies is provided to assist the contractor in identifying those public agencies whose elected official and/or candidate campaign committees are affected by the disclosure requirement. It is the contractor's responsibility to identify the specific committees to which contributions may have been made and need to be disclosed. The disclosed information may exceed the minimum requirement.

The enclosed form, a content-consistent facsimile, or an electronic data file containing the required details (along with a signed cover sheet) may be used as the contractor's submission and is disclosable to the public under the Open Public Records Act.

The contractor must also complete the attached Ownership Disclosure Certification. This will assist the agency in meeting its obligations under the law. **NOTE: This section does not apply to Board of Education contracts.**

C. 271 POLITICAL CONTRIBUTION DISCLOSURE FORM

Required Pursuant To N.J.S.A. 19:44A-20.26

This form or its permitted facsimile must be submitted to the local unit no later than 10 days prior to the award of the contract.

Part I – Vendor Information

Vendor Name:			
Address:			
City:		State:	Zip:

The undersigned being authorized to certify, hereby certifies that the submission provided herein represents compliance with the provisions of N.J.S.A. 19:44A-20.26 and as represented by the Instructions accompanying this form.

Signature	Printed Name	Title

Part II – Contribution Disclosure

Disclosure requirement: Pursuant to N.J.S.A. 19:44A-20.26 this disclosure must include all reportable political contributions (more than $200 per election cycle) over the 12 months prior to submission to the committees of the government entities listed on the form provided by the local unit.

☐ Check here if disclosure is provided in electronic form.

Contributor Name	Recipient Name	Date	Dollar Amount
			$

☐ Check here if the information is continued on subsequent page(s)

Continuation Page

C. 271 POLITICAL CONTRIBUTION DISCLOSURE FORM

Required Pursuant To N.J.S.A. 19:44A-20.26

Page ___ of ______

Vendor Name:

Contributor Name	Recipient Name	Date	Dollar Amount
			$

☐ Check here if the information is continued on subsequent page(s)

List of Agencies with Elected Officials Required for Political Contribution Disclosure
N.J.S.A. 19:44A-20.26

County Name:
State: Governor
Legislative District #s:
State Senator and two members of the General Assembly per district.

County:
County Commissioners County Clerk Sheriff
{County Executive} Surrogate

Municipalities (Mayor and members of governing body, regardless of title):

USERS SHOULD CREATE THEIR OWN FORM, OR DOWNLOAD FROM https://www.nj.gov/dca/divisions/dlgs/programs/pay_2_play.html A COUNTY-BASED, CUSTOMIZABLE FORM.

STATE OF NEW JERSEY -- DIVISION OF PURCHASE AND PROPERTY
DISCLOSURE OF INVESTMENT ACTIVITIES IN IRAN

Quote Number: _____ **Bidder/Offeror:** _____

PART 1: CERTIFICATION

BIDDERS MUST COMPLETE PART 1 BY CHECKING EITHER BOX.

FAILURE TO CHECK ONE OF THE BOXES WILL RENDER THE PROPOSAL NON-RESPONSIVE.

Pursuant to Public Law 2012, c. 25, any person or entity that submits a bid or proposal or otherwise proposes to enter into or renew a contract must complete the certification below to attest, under penalty of perjury, that neither the person or entity, nor any of its parents, subsidiaries, or affiliates, is identified on the Department of Treasury's Chapter 25 list as a person or entity engaging in investment activities in Iran. The Chapter 25 list is found on the Division's website at http://www.state.nj.us/treasury/purchase/pdf/Chapter25List.pdf. Bidders **must** review this list prior to completing the below certification. **Failure to complete the certification will render a bidder's proposal non-responsive**. If the Director finds a person or entity to be in violation of law, s/he shall take action as may be appropriate and provided by law, rule or contract, including but not limited to, imposing sanctions, seeking compliance, recovering damages, declaring the party in default and seeking debarment or suspension of the party

PLEASE CHECK THE APPROPRIATE BOX:

☐ **I certify, pursuant to Public Law 2012, c. 25, that neither the bidder listed above nor any of the bidder's parents, subsidiaries, or affiliates is listed** on the N.J. Department of the Treasury''s list of entities determined to be engaged in prohibited activities in Iran pursuant to P.L. 2012, c. 25 ("Chapter 25 List"). I further certify that I am the person listed above, or I am an officer or representative of the entity listed above and am authorized to make this certification on its behalf. **I will skip Part 2 and sign and complete the Certification below.**

OR

☐ **I am unable to certify as above because the bidder and/or one or more of its parents, subsidiaries, or affiliates is listed on the Department's Chapter 25 list. I will provide a detailed, accurate and precise description of the activities in Part 2 below and sign and complete the Certification below**. Failure to provide such will result in the proposal being rendered as non-responsive and appropriate penalties, fines and/or sanctions will be assessed as provided by law.

PART 2: PLEASE PROVIDE FURTHER INFORMATION RELATED TO INVESTMENT ACTIVITIES IN IRAN

You must provide a detailed, accurate and precise description of the activities of the bidding person/entity, or one of its parents, subsidiaries or affiliates, engaging in the investment activities in Iran outlined above by completing the boxes below.

EACH BOX WILL PROMPT YOU TO PROVIDE INFORMATION RELATIVE TO THE ABOVE QUESTIONS. PLEASE PROVIDE THOROUGH ANSWERS TO EACH QUESTION. IF YOU NEED TO MAKE ADDITIONAL ENTRIES, CLICK THE "ADD AN ADDITIONAL ACTIVITIES ENTRY" BUTTON.

Delete

Name _____ Relationship to Bidder/Offeror _____

Description of Activities _____

_____

Duration of Engagement _____ Anticipated Cessation Date _____

Bidder/Offeror Contact Name _____ Contact Phone Number _____

ADD AN ADDITIONAL ACTIVITIES ENTRY

Certification: I, being duly sworn upon my oath, hereby represent that the foregoing information and any attachments thereto to the best of my knowledge are true and complete. I acknowledge: that I am authorized to execute this certification on behalf of the bidder; that the State of New Jersey is relying on the information contained herein and that I am under a continuing obligation from the date of this certification through the completion of any contracts with the State to notify the State in writing of any changes to the information contained herein; that I am aware that it is a criminal offense to make a false statement or misrepresentation in this certification, and if I do so, I am subject to criminal prosecution under the law and that it will constitute a material breach of my agreement(s) with the State, permitting the State to declare any contract(s) resulting from this certification void and unenforceable.

Full Name (Print): _____ Signature: _____

Do Not Enter PIN as a Signature

Title: _____ Date: _____

CERTIFICATION OF NON-INVOLVEMENT IN PROHIBITED ACTIVITIES IN RUSSIA OR BELARUS

N.J.S.A. 18A:18A-49.5

Pursuant to N.J.S.A. 52:32-60.1, et seq. (L. 2022, c. 3) any person or entity (hereinafter "Vendor[i]") that seeks to enter into or renew a contract with a State agency for the provision of goods or services, or the purchase of bonds or other obligations, must complete the certification below indicating whether or not the Vendor is identified on the Office of Foreign Assets Control (OFAC) Specially Designated Nationals and Blocked Persons list, available here: https://sanctionssearch.ofac.treas.gov/. If the Department of the Treasury finds that a Vendor has made a certification in violation of the law, it shall take any action as may be appropriate and provided by law, rule, or contract, including but not limited to, imposing sanctions, seeking compliance, recovering damages, declaring the party in default and seeking debarment or suspension of the party.

I, the undersigned, certify that I have read the definition of "Vendor" below, and have reviewed the Office of Foreign Assets Control (OFAC) Specially Designated Nationals and Blocked Persons list, and having done so certify:

(Check the Appropriate Box)

○ A. That the Vendor is not identified on the OFAC Specially Designated Nationals and Blocked Persons list on account of activity related to Russia and/or Belarus.

OR

○ B. That I am unable to certify as to "A" above, because the Vendor is identified on the OFAC Specially Designated Nationals and Blocked Persons list on account of activity related to Russia and/or Belarus.

OR

○ C. That I am unable to certify as to "A" above, because the Vendor is identified on the OFAC Specially Designated Nationals and Blocked Persons list. However, the Vendor is engaged in activity related to Russia and/or Belarus consistent with federal law, regulation, license or exemption. A detailed description of how the Vendor's activity related to Russia and/or Belarus is consistent with federal law is set forth below.

_____

_____

_____

_____

_____

(Attach Additional Sheets If Necessary.)

Signature of Vendor's Authorized Representative	Date
Print Name and Title of Vendor's Authorized Representative	Vendor's FEIN
Vendor's Name	Vendor's Phone Number
Vendor's Address (Street Address)	Vendor's Fax Number
Vendor's Address (City/State/Zip Code)	Vendor's Email Address

[i] Vendor means: (1) A natural person, corporation, company, limited partnership, limited liability partnership, limited liability company, business association, sole proprietorship, joint venture, partnership, society, trust, or any other nongovernmental entity, organization, or group; (2) Any governmental entity or instrumentality of a government, including a multilateral development institution, as defined in Section 1701(c)(3) of the International Financial Institutions Act, 22 U.S.C. 262r(c)(3); or (3) Any parent, successor, subunit, direct or indirect subsidiary, or any entity under common ownership or control with, any entity described in paragraph (1) or (2). NJ Rev. 1.22.2024

AMERICANS WITH DISABILITIES ACT OF 1990
Equal Opportunity for Individuals with Disability

The contractor and the Board of Education (hereafter "owner") do hereby agree that the provisions of Title 11 of the Americans With Disabilities Act of 1990 (the "Act")
(42 U.S.C. S121 01 et seq.), which prohibits discrimination on the basis of disability by public entities in all services, programs, and activities provided or made available by public entities, and the rules and regulations promulgated pursuant there unto, are made a part of this contract. In providing any aid, benefit, or service on behalf of the owner pursuant to this contract, the contractor agrees that the performance shall be in strict compliance with the Act. In the event that the contractor, its agents, servants, employees, or subcontractors violate or are alleged to have violated the Act during the performance of this contract, the contractor shall defend the owner in any action or administrative proceeding commenced pursuant to this Act. The contractor shall indemnify, protect, and save harmless the owner, its agents, servants, and employees from and against any and all suits, claims, losses, demands, or damages, of whatever kind or nature arising out of or claimed to arise out of the alleged violation. The contractor shall, at its own expense, appear, defend, and pay any and all charges for legal services and any and all costs and other expenses arising from such action or administrative proceeding or incurred in connection therewith. In any and all complaints brought pursuant to the owner's grievance procedure, the contractor agrees to abide by any decision of the owner which is rendered pursuant to said grievance procedure. If any action or administrative proceeding results in an award of damages against the owner, or if the owner incurs any expense to cure a violation of the ADA which has been brought pursuant to its grievance procedure, the contractor shall satisfy and discharge the same at its own expense.

The owner shall, as soon as practicable after a claim has been made against it, give written notice thereof to the contractor along with full and complete particulars of the claim, If any action or administrative proceeding is brought against the owner or any of its agents, servants, and employees, the *owner shall* expeditiously forward or have forwarded to the contractor every demand, complaint, notice, summons, pleading, or other process received by the owner or its representatives.

It is expressly agreed and understood that any approval by the owner of the services provided by the contractor pursuant to this contract will not relieve the contractor of the obligation to comply with the Act and to defend, indemnify, protect, and save harmless the owner pursuant to this paragraph.

It is further agreed and understood that the owner assumes no obligation to indemnify or save harmless the contractor, its agents, servants, employees and subcontractors for any claim which may arise out of their performance of this Agreement. Furthermore, the contractor expressly understands and agrees that the provisions of this indemnification clause shall in no way limit the contractor's obligations assumed in this Agreement, nor shall they be construed to relieve the contractor from any liability, nor preclude the owner from taking any other actions available to it under any other provisions of the Agreement or otherwise at law.

Name of Company_____

Authorized Agent_____

Title or Position _____

Signature_____ Date_____

EXHIBIT B
MANDATORY EQUAL EMPLOYMENT OPPORTUNITY LANGUAGE
N.J.S.A. 10:5-31 et seq. (P.L.1975, c.127)
N.J.A.C. 17:27-1.1 et seq.
CONSTRUCTION CONTRACTS

During the performance of this contract, the contractor agrees as follows:

The contractor or subcontractor, where applicable, will not discriminate against any employee or applicant for employment because of age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex. Except with respect to affection or sexual orientation and gender identity or expression, the contractor will ensure that equal employment opportunity is afforded to such applicants in recruitment and employment, and that employees are treated during employment, without regard to their age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex. Such equal employment opportunity shall include, but not be limited to the following: employment, upgrading, demotion, or transfer, recruitment or recruitment advertising; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship. The contractor agrees to post in conspicuous places, available to employees and applicants for employment, notices to be provided by the Public Agency Compliance Officer setting forth provisions of this nondiscrimination clause.

The contractor or subcontractor, where applicable will, in all solicitations or advertisements for employees placed by or on behalf of the contractor, state that all qualified applicants will receive consideration for employment without regard to age, race, creed, color, national origin, ancestry, marital status, affectional or sexual orientation, gender identity or expression, disability, nationality or sex.

The contractor or subcontractor will send to each labor union, with which it has a collective bargaining agreement, a notice, to be provided by the agency contracting officer, advising the labor union or workers' representative of the contractor's commitments under this act and shall post copies of the notice in conspicuous places available to employees and applicants for employment.

The contractor or subcontractor, where applicable, agrees to comply with any regulations promulgated by the Treasurer, pursuant to N.J.S.A. 10:5-31 et seq., as amended and supplemented from time to time and the Americans with Disabilities Act.

When hiring or scheduling workers in each construction trade, the contractor or subcontractor agrees to make good faith efforts to employ minority and women workers in each construction trade consistent with the targeted employment goal prescribed by N.J.A.C. 17:27-7.2; provided, however, that the Dept. of LWD, Construction EEO Monitoring Program, may, in its discretion, exempt a contractor or subcontractor from compliance with the good faith procedures prescribed by the following provisions, A, B, and C, as long as the Dept. of LWD, construction EEO Monitoring Program is satisfied that the contractor or subcontractor is employing workers provided by a union which provides evidence, in accordance with standards prescribed by the Dept. of LWD, Construction EEO Monitoring Program, that its percentage of active "card carrying" members who are minority and women workers is equal to or greater than the targeted employment goal established in accordance with N.J.A.C 17:27-7.2. The contractor or subcontractor agrees that a good faith effort shall include compliance with the following procedures:

(A) If the contractor or subcontractor has a referral agreement or arrangement with a union for a construction trade, the contractor or subcontractor shall, within three business days of the contract award, seek assurances from the union that it will cooperate with the contractor or subcontractor as it fulfills its affirmative action obligations under this contract and in accordance with the rules promulgated by the Treasurer pursuant to N.J.S.A. 10:5-31 et seq., as supplemented and amended from time to time and the American with Disabilities Act. If the contractor or subcontractor is unable to obtain said assurances from the construction trade union at least five business days prior to the commencement of construction work, the contractor or subcontractor agrees to afford equal employment opportunities minority and women workers directly, consistent with this chapter. If the contractor's or subcontractor's prior experience with a construction trade union, regardless of whether the union has provided said assurances, indicates a significant possibility that the trade union will not refer sufficient minority and women workers consistent with affording equal employment opportunities as specified in this chapter, the contractor or subcontractor agrees to be prepared to provide such opportunities to minority and women workers directly, consistent with this chapter, by complying with the hiring or scheduling procedures prescribed under (B) below; and the contractor or subcontractor further agrees to take said action immediately if it determines that the union is not referring minority and women workers consistent with the equal employment opportunity goals set forth in this chapter.

EXHIBIT B (Continued)

(B) If good faith efforts to meet targeted employment goals have not or cannot be met for each construction trade by adhering to the procedures of (A) above, or if the contractor does not have a referral agreement or arrangement with a union for a construction trade, the contractor or subcontractor agrees to take the following actions:

1) To notify the public agency compliance officer, the Dept. of LWD, Construction EEO Monitoring Program, and minority and women referral organizations listed by the Division pursuant to N.J.A.C. 17:27-5.3, of its workforce needs, and request referral of minority and women workers;
2) To notify any minority and women workers who have been listed with it as awaiting available vacancies;
3) Prior to commencement of work, to request that the local construction trade union refer minority and women workers to fill job openings, provided the contractor or subcontractor has a referral agreement or arrangement with a union for the construction trade;
4) To leave standing requests for additional referral to minority and women workers with the local construction trade union, provided the contractor or subcontractor has a referral agreement or arrangement with a union for the construction trade, the State Training and Employment Service and other approved referral sources in the area;
5) If it is necessary to lay off some of the workers in a given trade on the construction site, layoffs shall be conducted in compliance with the equal employment opportunity and nondiscrimination standards set forth in this regulation, as well as with applicable Federal and State court decisions;
6) To adhere to the following procedure when minority and women workers apply or are referred to the contractor or subcontractor:

i. The contractor or subcontractor shall interview the referred minority or women worker.
ii. If said individuals have never previously received any document or certification signifying a level of qualification lower than that required in order to perform the work of the construction trade, the contractor or subcontractor shall in good faith determine the qualifications of such individuals. The contractor or subcontractor shall hire or schedule those individuals who satisfy appropriate qualification standards in conformity with the equal employment opportunity and non-discrimination principles set forth in this chapter. However, a contractor or subcontractor shall determine that the individual at least possesses the requisite skills, and experience recognized by a union, apprentice program or a referral agency, provided the referral agency is acceptable to the Dept. of LWD, Construction EEO Monitoring Program. If necessary, the contractor or subcontractor shall hire or schedule minority and women workers who qualify as trainees pursuant to these rules. All of the requirements, however, are limited by the provisions of (C) below.
iii. The name of any interested women or minority individual shall be maintained on a waiting list, and shall be considered for employment as described in (i) above, whenever vacancies occur. At the request of the Dept. of LWD, Construction EEO Monitoring Program, the contractor or subcontractor shall provide evidence of its good faith efforts to employ women and minorities from the list to fill vacancies.
iv. If, for any reason, said contractor or subcontractor determines that a minority individual or a woman is not qualified or if the individual qualifies as an advanced trainee or apprentice, the contractor or subcontractor shall inform the individual in writing of the reasons for the determination, maintain a copy of the determination in its files, and send a copy to the public agency compliance officer and to the Dept. of LWD, Construction EEO Monitoring Program.

7) To keep a complete and accurate record of all requests made for the referral of workers in any trade covered by the contract, on forms made available by the Dept. of LWD, Construction EEO Monitoring Program upon request.

(C) The contractor or subcontractor agrees that nothing contained in (B) above shall preclude the contractor or subcontractor from complying with the union hiring hall or apprenticeship policies in any applicable collective bargaining agreement or union hiring hall arrangement, and, where required by custom or agreement, it shall send journeymen and trainees to the union for referral, or to the apprenticeship program for admission, pursuant to such agreement or arrangement. However, where the practices of a union or apprenticeship program will result in the exclusion of minorities and women or the failure to refer minorities and women consistent with the targeted county employment goal, the contractor or subcontractor shall consider for employment persons referred pursuant to (B) above without regard to such agreement or arrangement; provided further, however, that the contractor or subcontractor shall not be required to employ women and minority advanced trainees and trainees in numbers which

result in the employment of advanced trainees and trainees as a percentage of the total workforce for the construction trade, which percentage significantly exceeds the apprentice to journey worker ratio specified in the applicable collective bargaining agreement, or in the absence of a collective bargaining agreement, exceeds the ration established by practice in the area for said construction trade. Also, the contractor or subcontractor agrees that, in implementing the procedures of (B) above, it shall, where applicable, employ minority and women workers residing within the geographical jurisdiction of the union.

After notification of award, but prior to signing a construction contract, the contractor shall submit to the public agency compliance officer and the Dept. of LWD, Construction EEO Monitoring Program an initial project workforce report (Form AA-201) electronically provided to the public agency by the Dept. of LWD, Construction EEO Monitoring Program, through its website, for distribution to and completion by the contractor, in accordance with N.J.A.C. 17:27-7. The contractor also agrees to submit a copy of the Monthly Project Workforce Report once a month thereafter for the duration of this contract to the Dept. of LWD, Construction EEO Monitoring Program, and to the public agency compliance officer.

The contractor agrees to cooperate with the public agency in the payment of budgeted funds, as is necessary, for on-the-job and/or off-the-job programs for outreach and training of minorities and women.

(D) The contractor and its subcontractors shall furnish such reports or other documents to the Dept. of LWD, Construction EEO Monitoring Program as may be requested by the Dept. of LWD, Construction EEO Monitoring Program from time to time in order to carry out the purposes of these regulations, and public agencies shall furnish such information as may be requested by the Dept. of LWD, Construction EEO Monitoring Program for conducting a compliance investigation pursuant to N.J.A.C. 17:27-1.1 et seq.

(Revised: January, 2016)

Reviewed By:_____ Title: _____

Company:_____ Date: _____

Signature: _____

AFFIRMATIVE ACTION COMPLIANCE NOTICE
N.J.S.A. 10:5-31 and N.J.A.C. 17:27

GOODS AND SERVICES CONTRACTS
(INCLUDING PROFESSIONAL SERVICES)

This form is a summary of the successful bidder's requirement to comply with the requirements of N.J.S.A. 10:5-31 and N.J.A.C. 17:27-1 et seq.

The successful bidder shall submit to the public agency, after notification of award but prior to execution of this contract, one of the following three documents as forms of evidence:

(a) A photocopy of a valid letter that the contractor is operating under an existing Federally approved or sanctioned affirmative action program (good for one year from the date of the letter);

OR

(b) A photocopy of a Certificate of Employee Information Report approval, issued in accordance with N.J.A.C. 17:27-4;

OR

(c) A photocopy of an Employee Information Report (Form AA302) provided by the Division and distributed to the public agency to be completed by the contractor in accordance with N.J.A.C. 17:27-4.

The successful vendor may obtain the Affirmative Action Employee Information Report (AA302) from the contracting unit during normal business hours.

The successful vendor(s) must submit the copies of the AA302 Report to the Division of Contract Compliance and Equal Employment Opportunity in Public Contracts (Division). The Public Agency copy is submitted to the public agency, and the vendor copy is retained by the vendor.

The undersigned vendor certifies that he/she is aware of the commitment to comply with the requirements of N.J.S.A. 10:5-31 and N.J.A.C. 17:27.1 et seq. and agrees to furnish the required forms of evidence.

The undersigned vendor further understands that his/her bid shall be rejected as non-responsive if said contractor fails to comply with the requirements of N.J.S.A. 10:5-31 and N.J.A.C. 17:27-1 et seq.

COMPANY: _____ SIGNATURE: _____

PRINT NAME: _____ TITLE: _____

DATE: _____

Form AA302
Rev. 02/22

STATE OF NEW JERSEY

Division of Purchase & Property
Contract Compliance Audit Unit
EEO Monitoring Program

EMPLOYEE INFORMATION REPORT

IMPORTANT-READ INSTRUCTIONS CAREFULLY BEFORE COMPLETING FORM. FAILURE TO PROPERLY COMPLETE THE ENTIRE FORM AND TO SUBMIT THE REQUIRED $150.00 FEE MAY DELAY ISSUANCE OF YOUR CERTIFICATE. DO NOT SUBMIT EEO-1 REPORT FOR SECTION B, ITEM 11. For Instructions on completing the form, go to: https://www.nj.gov/treasury/contract_compliance/documents/pdf/forms/aa302ins.pdf

SECTION A - COMPANY IDENTIFICATION

1. FID. NO. OR SOCIAL SECURITY	2. TYPE OF BUSINESS ☐ 1. MFG ☐ 2. SERVICE ☐ 3. WHOLESALE ☐ 4. RETAIL ☐ 5. OTHER	3. TOTAL NO. EMPLOYEES IN THE ENTIRE COMPANY

4. COMPANY NAME — COMPANY E-MAIL

5. STREET — CITY — COUNTY — STATE — ZIP CODE

6. NAME OF PARENT OR AFFILIATED COMPANY (IF NONE, SO INDICATE) — CITY — STATE — ZIP CODE

7. CHECK ONE: IS THE COMPANY: ☐ SINGLE-ESTABLISHMENT EMPLOYER ☐ MULTI-ESTABLISHMENT EMPLOYER

8. IF MULTI-ESTABLISHMENT EMPLOYER, STATE THE NUMBER OF ESTABLISHMENTS IN NJ

9. TOTAL NUMBER OF EMPLOYEES AT ESTABLISHMENT WHICH HAS BEEN AWARDED THE CONTRACT

10. PUBLIC AGENCY AWARDING CONTRACT — CITY — COUNTY — STATE — ZIP CODE

Official Use Only	DATE RECEIVED	INAUG.DATE	ASSIGNED CERTIFICATION NUMBER

SECTION B - EMPLOYMENT DATA

11. Report all permanent, temporary and part-time employees ON YOUR OWN PAYROLL. Enter the appropriate figures on all lines and in all columns. Where there are no employees in a particular category, enter a zero. Include ALL employees, not just those in minority/non-minority categories, in columns 1, 2, & 3. *DO NOT SUBMIT AN EEO-1 REPORT.*

JOB CATEGORIES	ALL EMPLOYEES	PERMANENT MINORITY/NON-MINORITY EMPLOYEE BREAKDOWN													
	COL. 1	COL. 2	COL. 3	********* MALE*********						********* FEMALE*********					
	Total	Male	Female												
	(Cols.2 &3)			BLACK	HISPANIC	AMER INDIAN	ASIAN	NON MIN	2 OR MORE RACES	BLACK	HISPANIC	AMER INDIAN	ASIAN	NON MIN	2 OR MORE RACES
Officials/ Managers															
Professionals															
Technicians															
Sales Workers															
Office & Clerical															
Craftworkers (Skilled)															
Operatives (Semi-skilled)															
Laborers (Unskilled)															
Service Workers															
TOTAL															
Total employment From previous Report (if any)															
	The data below shall NOT be included in the figures for the appropriate categories above.														
Temporary & Part-Time Employees															

12. HOW WAS INFORMATION AS TO RACE OR ETHNIC GROUP IN SECTION B OBTAINED?
☐ 1. Visual Survey ☐ 2. Employment Record ☐ 3. Other (Specify)

13. DATES OF PAYROLL PERIOD USED
From: To:

14. IS THIS THE FIRST Employee Information Report Submitted?
1. YES ☐ 2. NO ☐

15. IF NO, DATE LAST REPORT SUBMITTED
MO. | DAY | YEAR

SECTION C - SIGNATURE AND IDENTIFICATION

16. NAME OF PERSON COMPLETING FORM (Print or Type) — SIGNATURE — TITLE — DATE MO | DAY | YEAR

17. ADDRESS NO. & STREET — CITY — COUNTY — STATE — ZIP CODE — PHONE (AREA CODE, NO.,EXTENSION)

- -

INSTRUCTIONS FOR COMPLETING THE EMPLOYEE INFORMATION REPORT (FORM AA302)

IMPORTANT: READ THE FOLLOWING INSTRUCTIONS CAREFULLY BEFORE COMPLETING THE FORM. PRINT OR TYPE ALL INFORMATION. FAILURE TO PROPERLY COMPLETE THE ENTIRE FORM **AND TO SUBMIT THE REQUIRED $150.00 NON-REFUNDABLE FEE MAY DELAY ISSUANCE OF YOUR CERTIFICATE**. **IF YOU HAVE A CURRENT CERTIFICATE OF EMPLOYEE INFORMATION REPORT, DO NOT COMPLETE THIS FORM UNLESS YOUR ARE RENEWING A CERTIFICATE THAT IS DUE FOR EXPIRATION. DO NOT COMPLETE THIS FORM FOR CONSTRUCTION CONTRACT AWARDS.**

ITEM 1 - Enter the Federal Identification Number assigned by the Internal Revenue Service, or if a Federal Employer Identification Number has been applied for, or if your business is such that you have not or will not receive a Federal Employer Identification Number, enter the Social Security Number of the owner or of one partner, in the case of a partnership.

ITEM 2 - Check the box appropriate to your TYPE OF BUSINESS. If you are engaged in more than one type of business check the predominate one. If you are a manufacturer deriving more than 50% of your receipts from your own retail outlets, check "Retail".

ITEM 3 - Enter the total "number" of employees in the entire company, including part-time employees. This number shall include all facilities in the entire firm or corporation.

ITEM 4 - Enter the name by which the company is identified and the company email. If there is more than one company name, enter the predominate one.

ITEM 5 - Enter the physical location of the company. Include City, County, State and Zip Code.

ITEM 6 - Enter the name of any parent or affiliated company including the City, County, State and Zip Code. If there is none, so indicate by entering "None" or N/A.

ITEM 7 - Check the box appropriate to your type of company establishment. "Single-establishment Employer" shall include an employer whose business is conducted at only one physical location. "Multi-establishment Employer" shall include an employer whose business is conducted at more than one location.

ITEM 8 - If "Multi-establishment" was entered in item 8, enter the number of establishments within the State of New Jersey.

ITEM 9 - Enter the total number of employees at the establishment being awarded the contract.

ITEM 10 - Enter the name of the Public Agency awarding the contract. Include City, County, State and Zip Code. This is not applicable if you are renewing a current Certificate.

ITEM 11 - Enter the appropriate figures on all lines and in all columns. THIS SHALL ONLY INCLUDE EMPLOYMENT DATA FROM THE FACILITY THAT IS BEING AWARDED THE CONTRACT. DO NOT list the same employee in more than one job category. **DO NOT attach an EEO-1 Report**.

Racial/Ethnic Groups will be defined:
Black: Not of Hispanic origin. Persons having origin in any of the Black racial groups of Africa.
Hispanic: Persons of Mexican, Puerto Rican, Cuban, or Central or South American or other Spanish culture or origin, regardless of race.
American Indian or Alaskan Native: Persons having origins in any of the original peoples of North America, and who maintain cultural identification through tribal affiliation or community recognition.
Asian or Pacific Islander: Persons having origin in any of the original peoples of the Far East, Southeast Asia, the Indian Sub-continent or the Pacific Islands. This area includes for example, China, Japan, Korea, the Phillippine Islands and Samoa.
Non-Minority: Any Persons not identified in any of the aforementioned Racial/Ethnic Groups.
2 or More Races: Persons identifying as 2 or More Races.

ITEM 12 - Check the appropriate box. If the race or ethnic group information was not obtained by 1 or 2, specify by what other means this was done in 3.

ITEM 13 - Enter the dates of the payroll period used to prepare the employment data presented in Item 12.

ITEM 14 - If this is the first time an Employee Information Report has been submitted for this company, check block "Yes".

ITEM 15 - If the answer to Item 15 is "No", enter the date when the last Employee Information Report was submitted by this company.

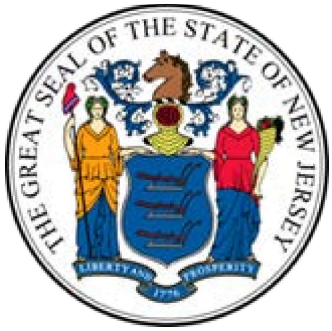
ITEM 16 - Print or type the name of the person completing the form. Include the signature, title and date.

ITEM 17 - Enter the physical location where the form is being completed. Include City, State, Zip Code and Phone Number.

TYPE OR PRINT IN SHARP BALL POINT PEN

THE VENDOR IS TO COMPLETE THE EMPLOYEE INFORMATION REPORT FORM (AA302) AND RETAIN A COPY FOR THE VENDOR'S OWN FILES. THE VENDOR SHOULD ALSO SUBMIT A COPY TO THE PUBLIC AGENCY AWARDING THE CONTRACT IF THIS IS YOUR FIRST REPORT; AND FORWARD ONE COPY **WITH A CHECK IN THE AMOUNT OF $150.00 PAYABLE TO THE TREASURER, STATE OF NEW JERSEY(FEE IS NON-REFUNDABLE)** TO:

NJ Department of the Treasury
Division of Purchase & Property
Contract Compliance Audit Unit
EEO Monitoring Program
P.O. Box 206
Trenton, New Jersey 08625-0206 **Telephone No. (609) 292-5473**



FREQUENTLY ASKED QUESTIONS

WEBSITE TO OBTAIN FORMS: www.state.nj.us/treasury/contract_compliance

WHO SHOULD CHECK OR MONEY ORDER BE PAYABLE TO? The Treasurer, State of New Jersey

HOW TO OBTAIN A DUPLICATE CERTIFICATE: Visit the website above and select forms. Print and complete the Duplicate Request Form and mail with a $75 check or money order payable to The Treasurer, State of NJ, PO Box 206, Trenton, NJ 08625. **NOTE**: No fee is required for name and/or address updates.

HOW LONG DOES IT TAKE TO PROCESS FORM AA-302 AND RECEIVE CERTIFICATE OF EMPLOYEE INFORMATION REPORT? The initial Form AA-302 certificate may take up to three (3) weeks. Renewals certificates may take up to two (2) weeks.

HOW LONG ARE CERTIFICATES VALID? For entities with fewer than 50 employees, the certificate is valid for seven (7) years. For entities with 50 employees or more, the certificate is valid for three (3) years.

WHICH ADDRESS SHOULD BE USED? When using the United States Postal Service (regular mail) to deliver the Form AA-302 and payment, the following address must be used:

NJ Dept. of the Treasury
Contract Compliance and Audit Unit
EEO Monitoring Program
PO Box 206
Trenton, NJ 08625-0206

When using a commercial delivery service such as FEDEX, UPS or other delivery service, the following address must be used:

NJ Dept. of the Treasury
Contract Compliance and Audit Unit
EEO Monitoring Program
33 West State Street, 9th floor
Trenton, NJ 08625

FOR QUESTIONS RELATED TO CONSTRUCTION FORMS AA-201 AND AA-202: Contact the NJ Dept. of Labor and Workforce Development, Office of Diversity and Compliance, Construction EEO Monitoring Program at (609) 292-9550.

HOW TO REGISTER FOR SUBMISSION OF ELECTRONIC RENEWAL CERTIFICATE: Visit www.state.nj.us/treasury/contract_compliance. Select the Premier Business Services Online Forms Account Instructions and follow the instructions.

HOW TO SUBMIT PAYMENT AFTER FILING RENEWAL CERTIFICATE ELECTRONICALLY? Mail check or money order (in the amount of $150) to the Division along with a print out of the online submission screen. Make check or money order payable to: The Treasurer, State of New Jersey. Please write your certificate number on the check or money order.

RECEIVED RENEWAL NOTICE – HOW DO I RENEW MY CERTIFICATE? Follow the instructions on the renewal notice, refer to the Division's website and select forms, print out the renewal package, complete Form AA-302, Vendor Activity Summary Reports and mail in along with a check or money order payable to: The Treasurer, State of New Jersey.

TO OBTAIN THE STATUS OF YOUR CERTIFICATE: Please call (609) 292-5473 and a representative will be available to assist you. Please have your federal ID or certificate number available to ensure faster service. **NOTE**: Renewal Notices will be mailed within 90 days prior to the expiration date of your certificate.

CAN PAYMENTS BE MADE WITH CREDIT CARDS? Payments are only accepted in the form of a check or money order in the amount of $150 and must be submitted with the Form AA-302 (Employee Information Report).

DO NONPROFIT ORGANIZATIONS HAVE TO COMPLETE FORM AA-302? Yes, the Employee Information Report (Form AA-302) must be completed by nonprofit organizations to ensure compliance with the EEO requirements.

WHAT DOES THE CERTIFICATE LOOK LIKE? The Certificate of Employee Information Report is yellow in color, 3 ½ X 8 ½ and has your assigned certificate number in the top right corner. The entity's name and address along with the effective date and expiration date also are included on the certificate.

THE COMPANY HAS NO EMPLOYEES. SHOULD THE OWNER OPERATING THE BUSINESS REPORT NO EMPLOYEES OR ONE EMPLOYEE FOR HIMSELF/HERSELF? A company with no employees must report the officials and managers on line #3 and also on line #11 (officials/managers).

SAMPLE CERTIFICATE OF EMPLOYEE INFORMATION REPORT

Certification 111XX

CERTIFICATE OF EMPLOYEE INFORMATION REPORT

INITIAL

This is to certify that the contractor listed below has submitted an Employee Information Report pursuant to N.J.A.C. 17:27-1.1 et. seq. and the State Treasurer has approved said report. This approval will remain in effect for the period of 15-DEC-20XX to 15-DEC-20XX

SAMPLE COMPANY, INC.
33 WEST STATE STREET
TRENTON, NJ 08625

VOID

State Treasurer

INSTRUCTIONS FOR COMPLETING THE INITIAL PROJECT WORKFORCE REPORT – CONSTRUCTION (AA201)

DO NOT COMPLETE THIS FORM FOR GOODS AND/OR SERVICE CONTRACTS

1. **Enter the Federal Identification Number assigned to the contractor by the Internal Revenue Service, or if a Federal Employer Identification Number has been applied for but not yet issued, or if your business is such that you have not or will not receive a Federal Identification Number, enter the social security number assigned to the single owner or one partner, in the case of a partnership.**

2. **Note: The Department of Labor & Workforce Development, Construction EEO Monitoring Program will assign a contractor ID number to your company. This number will be your permanently assigned contractor ID number that must be on all correspondence and reports submitted to this office.**

3. **Enter the prime contractor's name, address and zip code number.**

4. **Check box if Company is Minority Owned or Woman Owned**

5. **Enter the complete name and address of the Public Agency awarding the contract. Include the contract number, date of award and dollar amount of the contract.**

6. **Enter the name and address of the project, including the county in which the project is located.**

7. **Note: A project contract ID number will be assigned to your firm upon receipt of the completed Initial Project Workforce Report (AA201) for this contract. This number must be indicated on all correspondence and reports submitted to this office relating to this contract.**

8. **Check "Yes" or "No" to indicate whether a Project Labor Agreement (PLA) was established with the labor organization(s) for this project.**

9. **Under the Projected Total Number of Employees in each trade or craft and at each level of classification, enter the total composite workforce of the prime contractor and all subcontractors projected to work on the project. Under Projected Employees enter total minority and female employees of the prime contractor and all subcontractors projected to work on the project. Minority employees include Black, Hispanic, American Indian and Asian, (J=Journeyworker, AP=Apprentice). Include projected phase-in and completion dates.**

10. **Print or type the name of the company official or authorized Equal Employment Opportunity (EEO) official include signature and title, phone number and date the report is submitted.**

This report must be submitted to the Public Agency that awards the contract and the Department of Labor & Workforce Development, Construction EEO Compliance Monitoring Program after notification of award, but prior signing the contract.

THE CONTRACTOR IS TO RETAIN A COPY AND SUBMIT COPY TO THE PUBLIC AGENCY AWARDING THE CONTRACT AND FORWARD A COPY TO:

NEW JERSEY DEPARTMENT OF LABOR & WORKFORCE DEVELOPMENT
CONSTRUCTION EEO COMPLIANCE MONITORING UNIT
P.O. BOX 209
TRENTON, NJ 08625-0209
(609) 292-9550

STATE OF NEW JERSEY

DEPARTMENT OF LABOR & WORKFORCE DEVELOPMENT
CONSTRUCTION EEO COMPLIANCE MONITORING PROGRAM

FORM AA-201
Revised 11/11

INITIAL PROJECT WORKFORCE REPORT CONSTRUCTION

Official Use Only

Assignment

Code

For instructions on completing the form, go to: http://www.state.nj.us/treasury/contract_compliance/pdf/aa201ins.pdf

1. FID NUMBER

2. CONTRACTOR ID NUMBER

3. NAME AND ADDRESS OF PRIME CONTRACTOR

(Name)

(Street Address)

(City) **(State)** **(Zip Code)**

4. IS THIS COMPANY MINORITY OWNED [ ] OR WOMAN OWNED [ ]

5. NAME AND ADDRESS OF PUBLIC AGENCY AWARDING CONTRACT

Name:
Address:

CONTRACT NUMBER **DATE OF AWARD** **DOLLAR AMOUNT OF AWARD**

6. NAME AND ADDRESS OF PROJECT

Name:
Address:

COUNTY

7. PROJECT NUMBER

8. IS THIS PROJECT COVERED BY A PROJEC
LABOR AGREEMENT (PLA)? YES

9. TRADE OR CRAFT	PROJECTED TOTAL EMPLOYEES				PROJECTED MINORITY EMPLOYEES				**PROJECTED PHASE - IN DATE**	**PROJECTED COMPLETION DATE**
	MALE		FEMALE		MALE		FEMALE			
	J	AP	J	**AP**	J	AP	J	AP		
1. ASBESTOS WORKER										
2. BRICKLAYER OR MASON										
3. CARPENTER										
4. ELECTRICIAN										
5. GLAZIER										
6. HVAC MECHANIC										
7. IRONWORKER										
8. OPERATING ENGINEER										
9. PAINTER										
10. PLUMBER										
11. ROOFER										
12. SHEET METAL WORKER										
13. SPRINKLER FITTER										
14. STEAMFITTER										
15. SURVEYOR										
16. TILER										
17. TRUCK DRIVER										
18. LABORER										
19. OTHER										
20. OTHER										

I hereby certify that the foregoing statements made by me are true. I am aware that if any of the foregoing statements are willfully false, I am subject to punishment.

(Signature)

10. **(Please Print Your Name)** **(Title)**

(Area Code) **(Telephone Number)** **(Ext.)** **(Date)**

FORM AA-202
REVISED 11/11

State Of New Jersey

Department of Labor & Workforce Development
Construction EEO Compliance Monitoring Program

MONTHLY PROJECT WORKFORCE REPORT - CONSTRUCTION

For instructions on completing the form, go to:
http://www.state.nj.us/treasury/contract_compliance/pdf/aa202ins.pdf

3. F ID or SS Number

1.Name and address of Prime Contractor

2. Contractor ID Number

4. Reporting Period

(NAME)

5. Public Agency Awarding Contract **Date of Award**

(ADDRESS)

6. Name and Location of Project **County**

7. Project ID Number

(CITY) (STATE) (ZIP CODE)

8. CONTRACTOR NAME (LIST PRIME CONTRACTOR WITH SUBS FOLLOWING)	9. PERCENT OF WORK COMPLETED	10. TRADE OR CRAFT	CLASSIFICATION (SEE REVERSE)	11. NUMBER OF EMPLOYEES A. TOTAL	B. BLACK	C. HISPANIC	D. AMERICAN INDIAN	E. ASIAN	F. FEMALES	12. TOTAL NO. OF MIN. EMP.	13. WORK HOURS TOTAL WORK HOURS	A. MIN. W/H	B. FEMALE W/H	14. % OF WORK HRS A. % OF MIN. W/H	B. % OF FEMALE W/H	15. CUM. WORK HRS TOTAL WORK HOURS	A. MIN. HOURS	B. FEMALE HOURS	16. CUM. % OF W/H A. % OF MIN. W/H	B. % OF FEM. W/H
			J																	
			AP																	
			J																	
			AP																	
			J																	
			AP																	
			J																	
			AP																	
			J																	
			AP																	

17. COMPLETED BY (PRINT OR TYPE)

(NAME) (SIGNATURE) (TITLE)

(AREA CODE) (TELEPHONE NUMBER) (EXT.) (DATE)

PERFORMANCE BOND

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned _____ as PRINCIPAL and sureties with underwriting office at _____ to which all communication in regard to this bond should be addressed, a Corporation organized and existing under the laws of the State of_____and duly authorized to do business in the state of New Jersey, as SURETY, are hereby held and firmly bound unto the _____ (Owner) in the penal sum of _____ Dollars, ($_____) for payment of which well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors, and assigns.

SIGNED and SEALED this_____day of_____two thousand and_____.

THE CONDITION OF THE ABOVE OBLIGATION IS SUCH THAT, WHEREAS, the above named Principal did on the _____ day of _____, 20____, entered into a contract with _____ identified as _____ which said contract, upon execution by the Owner, and the Principal, will be a part of this bond the same as though set forth herein.

Now, if the said Principal shall well and faithfully do and perform each and every, all and singular, the things agreed by it (or them) to be done and performed according to the terms of said contract, and shall pay all lawful claims of beneficiaries as defined by N.J.S.2A:44-143 for labor performed or materials, provisions, provender or other supplies or teams, fuels, oils, implements or machinery furnished, used or consumed in the carrying forward, performing or completing of said contract, we agreeing and assenting that this undertaking shall be for the benefit of any beneficiary as defined in N.J.S.2A:44-143 having a just claim, as well as for the oblige herein; then this obligation shall be void; otherwise the same shall remain in full force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall in no event exceed the penal amount of this obligation as herein stated.

The said Surety hereby stipulated and agrees that no modifications, omissions or additions in or to the terms of the said contract, or in or to the plans or specifications therefore, shall in anyway affect the obligations of said Surety on its bond.

Recovery of any claimant under the bond shall be subject to the conditions and provisions of this article to the same extent as if such conditions and provisions were fully incorporated in the form set forth above.

Principal:

Affix Corporate Seal

_____
Witness

_____
Print or Type Name

By: _____
Print Name:
Print Title:

Surety:

Affix Corporate Seal

_____
Witness

_____
Print or Type Name

By: _____
Print Name:
Print Title:

PAYMENT BOND

Bond No. _____

KNOW ALL MEN BY THESE PRESENTS, that we, the undersigned _____ as PRINCIPAL and sureties with underwriting office at _____ to which all communication in regard to this bond should be addressed, a Corporation organized and existing under the laws of the State of_____and duly authorized to do business in the state of New Jersey, as SURETY, are hereby held and firmly bound unto the _____ in the penal sum of _____, for payment of which well and truly to be made, we hereby jointly and severally bind ourselves, our heirs, executors, administrators, successors, and assigns.

SIGNED and SEALED this_____day of_____two thousand and_____.

THE CONDITION OF THE ABOVE OBLIGATION IS SUCH THAT, WHEREAS, the above named Principal did on the _____ day of _____, 20____, entered into a contract with _____ identified as _____ which said contract, upon execution by the Owner, and the Principal, will be a part of this bond the same as though set forth herein.

Now, if the said Principal shall pay all lawful claims of beneficiaries as defined by N.J.S.2A:44-143 for labor performed or materials, provisions, provender or other supplies or teams, fuels, oils, implement or machinery furnished, used or consumed in carrying forward, performing or completing of said contract, we agreeing and assenting that this undertaking shall be for the benefit of any beneficiary as defined in N.J.S.2A;44-143 having a just claim, as well as for the party of the first part mentioned in the contract aforesaid; then this obligation shall be void; otherwise the same shall remain in full force and effect; it being expressly understood and agreed that the liability of the Surety for any and all claims hereunder shall in no event exceed the penal amount of this obligation as herein stated.

The said Surety hereby stipulated and agrees that no modifications, omissions or additions in or to the terms of the said contract, or in or to the plans or specifications therefore, shall in anyway affect the obligations of said Surety on its bond.

Principal:

Affix Corporate Seal

By: _____

Print Name:

Print Title:

_____
Witness

_____
Print or Type Name

Surety:

Affix Corporate Seal

By: _____

Print Name:

Print Title:

_____
Witness

_____
Print or Type Name

MAINTENANCE BOND

KNOW ALL MEN BY THESE PRESENTS, That we, the undersigned,

_____

as principal, and _____ a Corporation organized and existing under the laws of the state of _____, and duly authorized to do business in the State of New Jersey, as Surety, are held and firmly bound unto the _____ as Owner, in the penal sum of _____

_____

(10% of the Final Contract Amount)

for payment of which, well and truly to be made, we hereby, jointly, and severally, bind ourselves, our heirs, executors, administrators, successors and assigns.

THE CONDITION OF THE ABOVE OBLIGATION IS SUCH, That whereas the above named principal did on the _____ day of _____, 20___ , enter into a Contract with the Owner for_____

_____

_____

(Project Name)

which said Contract is made a part of this bond the same as though set forth herein.

NOW, if the said principal shall remedy without cost to the Owner any defects which may develop during the two (2) year Maintenance Period of the work performed under the said Contract, provided such defects, in the judgment of the Owner are caused by defective or inferior materials or workmanship, then this obligation shall be void, otherwise it shall be and remain in full force and effect. The two (2) year period shall commence on the date established in the Certificate of Substantial Completion.

The said Surety hereby stipulates and agrees that no modifications, deletions or additions in or to the terms of the said Contract or the plans or specifications therefor shall in any way affect its obligations on this bond.

Signed and Sealed this _____ day of _____, 20__.

_____
(Principal) (Seal)

_____
(Witness)

_____
(Title)

_____
(Surety) (Seal)

_____
(Witness)

_____
(Title)

Surety Disclosure Statement and Certification
N.J.S. A. 2A:44-143

SAMPLE

SURETY DISCLOSURE STATEMENT AND CERTIFICATION

....., surety(ies) on the attached bond, hereby certifies(y) the following:

(1) The surety meets the applicable capital and surplus requirements of N.J.S.A.17:17-6 or N.J.S.A. 17:17-7 as of the surety's most current annual filing with the New Jersey Department of Insurance.

(2) The capital (where applicable) and surplus, as determined in accordance with the applicable laws of this State, of the surety(ies) participating in the issuance of the attached bond is (are) in the following amount(s) as of the calendar year ended December 31, ... (most recent calendar year for which capital and surplus amounts are available), which amounts have been certified as indicated by certified public accountants (indicating separately for each surety that surety's capital and surplus amounts, together with the name and address of the firm of certified public accounts that shall have certified those amounts):

.....

.....

.....

(3) (a) With respect to each surety participating in the issuance of the attached bond that has received from the United States Secretary of the Treasury a certificate of authority pursuant to 31 U.S.C. 9305, the underwriting limitation established therein and the date as of which that limitation was effective is as follows (indicating for each such surety that surety's underwriting limitation and the effective date thereof):

.....

.....

.....

(b) With respect to each surety participating in the issuance of the attached bond that has not received such a certificate of authority from the United States Secretary of the Treasury, the underwriting limitation of that surety as established pursuant to N.J.S.A. 17:18-9 as of (date on which such limitation was so established) is as follows (indicating for each such surety that surety's underwriting limitation and the date on which that limitation was established):

.....

.....

.....

(4) The amount of the bond to which this statement and certification is attached is $.....

(5) If, by virtue of one or more contracts of reinsurance, the amount of the bond indicated under item (4) above exceeds the total underwriting limitation of all sureties on the bond as set forth in items (3)(a) or (3)(b) above, or both, then for each such contract of reinsurance:

(a) The name and address of each such reinsurer under that contract and the amount of that reinsurer's participation in the contract is as follows:.....

.....

.....

.....; and

(b) Each surety that is party to any such contract of reinsurance certifies that each reinsurer listed under item (5)(a) satisfies the credit for reinsurance requirement established under NJSA 17:51B-1 et seq. and any applicable regulations in effect as of the date on which the bond to which this statement and certification is attached shall have been filed with the appropriate public agency.

CERTIFICATE

(to be completed by an authorized certifying agent

for each surety on the bond)

I ..... (name of agent), as ..... (title of agent) for ..... (name of surety), a corporation/mutual insurance company/other (indicating type of business organization) (circle one) domiciled in ..... (state of domicile), DO HEREBY CERTIFY that, to the best of my knowledge, the foregoing statements made by me are true, and ACKNOWLEDGE that, if any of those statements are false, this bond is VOIDABLE.

.....

(Signature of certifying agent)

.....

(Printed name of certifying agent)

.....

(Title of certifying agent)

AIA® Document A132® – 2019

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

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

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

Princeton Public Schools Board of Education
25 Valley Road, 2nd Floor
Princeton, NJ 08540

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

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

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

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

Fraytak Veisz Hopkins Duthie, P.C.
1515 Lower Ferry Road
Trenton, NJ 08618

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.

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

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TABLE OF ARTICLES

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2 THE WORK OF THIS CONTRACT

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6 DISPUTE RESOLUTION

7 TERMINATION OR SUSPENSION

8 MISCELLANEOUS PROVISIONS

9 ENUMERATION OF CONTRACT DOCUMENTS

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

ARTICLE 1 THE CONTRACT DOCUMENTS

The Contract Documents consist of this Agreement, Conditions of the Contract (General, Supplementary, and other Conditions), Drawings, Specifications, Addenda issued prior to execution of this Agreement, other documents listed in this Agreement, and Modifications issued after execution of this Agreement, all of which form the Contract, and are as fully a part of the Contract as if attached to this Agreement or repeated herein. The Contract represents the entire and integrated agreement between the parties hereto and supersedes prior negotiations, representations, or agreements, either written or oral. An enumeration of the Contract Documents, other than Modifications, appears in Article 9. In the event of any conflict among the Contract Documents, the Contractor shall notify the Owner and the Architect of same and follow and comply with their interpretation of same.

ARTICLE 2 THE WORK OF THIS CONTRACT

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

ARTICLE 3 DATE OF COMMENCEMENT AND DATES OF SUBSTANTIAL COMPLETION

§ 3.1 The date of commencement of the Work shall be:
(Check one of the following boxes.)

[ ] The date of this Agreement.

[**X**] 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.

(Paragraph deleted)

§ 3.3 Substantial Completion of the Project or Portions Thereof

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

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(Insert the date of Substantial Completion of the Work of all Contractors for the Project.)

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

Portion of Work	Substantial Completion Date

§ 3.4 When the Work of this Contract, or any Portion Thereof, is Substantially Complete

§ 3.4.1 Subject to adjustments of the Contract Time as provided in the Contract Documents, the Contractor shall substantially complete the entire Work of this Contract:
(Check one of the following boxes and complete the necessary information.)

[ ] Not later than ( ) calendar days from the Notice to Proceed.

[ ] By the following date:

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

Portion of Work	Date to be substantially complete

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

ARTICLE 4 CONTRACT SUM

§ 4.1 The Owner shall pay the Contractor the Contract Sum in current funds for the Contractor's performance of the Contract. The Contract Sum shall be one of the following:
(Check the appropriate box.)

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

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

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

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

§ 4.2 Stipulated Sum

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

§ 4.2.2 Alternates

§ 4.2.2.1 Alternates, if any, included in the Contract Sum: Section 01030 – Alternate Bids

Item	Price

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

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Item	Price	Conditions for Acceptance

§ 4.2.3 Allowances, if any, included in the Contract Sum: Section 01020 - Allowances
(Identify each allowance.)

Item	Price

§ 4.2.4 Unit prices, if any: Section 01151 – Unit Prices
(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)

(Paragraphs deleted)

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

Liquidated Damages to be assessed in accordance with the Specification requirements, Section 01800, entitled "Time of Completion and Liquidated Damages." By executing the Agreement, the Contractor confirms that the Contract Time is a reasonable period for performing the Work. TIME IS OF THE ESSENCE. If the Contractor fails to complete his work or fails to complete a portion of his work and therefore not achieve Substantial Completion and/or Final Completion on the respective dates required, s/he shall pay the Owner, as liquidated damages and not as a penalty, ($2,000) per day, which is agreed upon as a reasonable and proper measure which the Owner will sustain each calendar day by failure of the Contractor to complete work within the stipulated time. Substantial Completion and Final Completion liquidated damages shall be stacked and be concurrently imposed.

ARTICLE 5 PAYMENTS

§ 5.0 No billings shall be deemed approved and certified by passage of time unless submitted in accordance with the application date as specified in Section 5.1.3 above. Moreover, if the contractor materially fails to perform in accordance with the provisions of the contract, the remedies of the Prompt Payment Act will not be applied, and failure by the Owner to act within the time allowed by N.J.S.A. 2A:30A-1 *et seq*. , resulting from the contractor's significant failure to perform, shall not constitute an implied approval of the Payment Application.

§ 5.1 Progress Payments

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

§ 5.1.2 The period covered by each Application for Payment shall be one calendar month ending on the last day of the month, or as follows: Each Application for Payment must be accompanied by Certified Payroll Records for the period covered by the Application. The payroll records shall indicate the proper classification of employees and the payment of overtime, if any. These records shall include each Contractor's subcontractor's certified payroll.

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Payment will not be authorized if the required payroll records have not been submitted.

§ 5.1.3 Provided that an Application for Payment is received by the Construction Manager not later than the 25th day of a month, and provided the Application for Payment is approved, and the Owner thereafter approves the Application for Payment, the Owner shall make payment of the amount certified to the Contractor not later than the end of the following month.

§ 5.1.3 .1 The Owner will issue timely payments for those duly approved and undisputed to the contractor(s) in accordance with the requirements of the Prompt Payment Act, N.J.S.A. 2A:30A-1 et seq., as described in Section 00860.

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

§ 5.1.4.1 Each Application for Payment shall be based on the most recent schedule of values submitted by the Contractor in accordance with the Contract Documents. The schedule of values shall allocate the entire Contract Sum among the various portions of the Work. The schedule of values shall be prepared in such form, and supported by such data to substantiate its accuracy, as the Construction Manager and Architect may require. This schedule of values shall be used as a basis for reviewing the Contractor's Applications for Payment. Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or material supplier, unless such Work has been performed by others whom the Contractor intends to pay. Moreover, if the contractor fail to perform in accordance with the provisions of the contract in a significant way, the remedies of the Prompt Payment Act will not be applied, and failure by the Owner to act within the time allowed by N.J.S.A. 2A:30A-1 et seq. shall not constitute an implied approval of the Payment Application.

§ 5.1.4.2 Applications for Payment shall show the percentage of completion of each portion of the Work as of the end of the period covered by the Application for Payment, which period shall be a calendar month in accordance with N.J.S.A. 40A:11-16.2. No billings shall be deemed approved and certified by passage of time unless submitted in accordance with the application date as specified in Section 5.1.3 above. Applications for Payment shall not include requests for payment for portions of the Work for which the Contractor does not intend to pay a Subcontractor or material supplier, unless such Work has been performed by others whom the Contractor intends to pay.

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

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

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

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

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

(Paragraphs deleted

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

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

(Paragraphs deleted)

§ 5.1.7 Retainage

§ 5.1.7.1 For each progress payment made prior to when the Work of this Contract is substantially complete, the Owner may withhold the following amount, as retainage, from the payment otherwise due:

.1 Pursuant to N.J.S.A. 18A: 18-40.3, unless indicated otherwise in the Contract Documents, if the Contractor does have a performance bond, 2% of the amount due on each partial payment shall be withheld by the Owner when the outstanding balance of the contract exceeds $500,000, and 5% of the amount due on each partial payment shall be withheld by the Owner when the outstanding balance of the Contract is $500,000 or less, until final completion and acceptance of all work covered by the Contract until final completion and acceptance of all work covered by the Contract, including the completion of all corrective or punch list items. Pending final determination of cost to the Owner of changes in the Work, amounts not in dispute may be included as provided in Section 7.3 of the General Conditions.

.2 Take that portion of the Contract Sum properly allocable to completed Work as determined by multiplying the percentage completion of each portion of the Work by the share of the total Contract Sum allocable to that portion of the Work in the schedule of values, less retainage of two percent (2%) when the contract balance is over $500,000 and five percent (5%) when the contract balance is $500,000 or less. **.3** Add 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), less retainage of two percent (2% when the Contract balance is over $500,000 and five percent (5% when the contract balance is $500,000 or less**.**

.**4** Retainage shall be withheld until the Owner approves the Architect's determination that the work has been satisfactorily completed and no unsettled claims exist. The final acceptance shall not be binding or conclusive upon the Owner should it subsequently discover that the Contractor has supplied inferior material or workmanship or has departed from the terms of his contract. Should such a condition appear the Owner shall have the right, notwithstanding final acceptance and payment, to cause the work to be properly done in accordance with the drawings and specifications at the cost and expense of the Contractor.

(Paragraphs deleted)

§ 5.2 Final Payment

§ 5.2.1 Final Payment Where the Contract Sum is Based on a Stipulated Sum

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

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

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

§ 5.2.1.2 The Owner's final payment to the Contractor shall be made no later than 30 days after the issuance of the final Certificate for Payment or Project Certificate for Payment or as follows: The Architect will submit the final Certificate for Payment once the Contractor has satisfactorily addressed all punch-list items and requisite close-out documents, including but not limited to, the Release of Mechanic Lien claims of all sub-contractors, suppliers and other contractor(s).

(Paragraphs deleted)

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

No interest will be paid.

ARTICLE 6 DISPUTE RESOLUTION

§ 6.1 Initial Decision Maker

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

§ 6.2 Binding Dispute Resolution

For any Claim, the method of binding dispute resolution shall be as follows:
(Check the appropriate box.)

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

[X] Litigation in a court of competent jurisdiction.

[ ] 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. If there are any claims or disputes, the Contractor is to submit in accordance with Article 15 as a pre-requisite to such a claim. Notwithstanding the foregoing and anything construed to the contrary, the foregoing shall only be applicable in the event that: (i) the Contractor has produced an updated Schedule prior to the alleged material delay; (ii) there are no components of the project for which the Contractor has delayed; and (iii) the alleged materially delayed component of the project affects the critical path and no other Work can continue to keep the project on schedule.

ARTICLE 7 TERMINATION OR SUSPENSION

§ 7.1 Where the Contract Sum is a Stipulated Sum

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

§ 7.1.2 If the Contract is terminated for the Owner's convenience in accordance with Article 14 of AIA Document A232–2019, then the Owner shall pay the Contractor a termination fee as follow: No Termination Fee.

(Paragraphs deleted)

ARTICLE 8 MISCELLANEOUS PROVISIONS

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

§ 8.1.1 A condition of this Agreement is that the Contractor will comply with all applicable governmental laws and regulations including, but without limitation, those set forth in Section 00860 of the Specifications, which are hereby incorporated by reference as if set forth herein at length.

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§ 8.4 The Contractor's representative shall not be changed without ten days' prior notice to the other party.

§ 8.5 Insurance and Bonds

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

§ 8.5.2 The Contractor shall provide bonds as set forth in AIA Document A132™–2019, Exhibit A, and elsewhere in the Contract Documents.

(Paragraphs deleted)

§ 8.7 Relationship of the Parties

:

(Paragraphs deleted)

ARTICLE 9 ENUMERATION OF CONTRACT DOCUMENTS

§ 9.1 This Agreement is comprised of the following documents:

.1 AIA Document A132™–2019, Standard Form of Agreement Between Owner and Contractor, Construction Manager as Adviser Edition

.2 AIA Document A132™–2019, Exhibit A, Insurance and Bonds Exhibit (Bond requirements are intended to comply with the Public Works Bond Act, N.J.S.A 2A:44-143-147. Any conflicting provisions are deleted and replaced with those conforming to applicable law.)

.3 AIA Document A232™–2019, General Conditions of the Contract for Construction, Construction Manager as Adviser Edition and its revisions.

(Paragraphs deleted)

.5 Drawings

Number	Title	Date

.6 Specifications

Section	Title	Date	Pages
Part 1	Contract Conditions and General Requirements		In Full

.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:

[ ] Supplementary and other Conditions of the Contract:

Document	Title	Date	Pages
Part 1	Contract Conditions and		In Full

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.9 Other documents, if any, listed below:
(List here any additional documents that are intended to form part of the Contract Documents. AIA Document A232–2019 provides that the advertisement or invitation to bid, Instructions to Bidders, sample forms, the Contractor's bid or proposal, portions of Addenda relating to bidding or proposal requirements, and other information furnished by the Owner in anticipation of receiving bids or proposals, are not part of the Contract Documents unless enumerated in this Agreement. Any such documents should be listed here only if intended to be part of the Contract Documents.)

Proposal, dated
Exhibit B

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

OWNER *(Signature)*	**CONTRACTOR** *(Signature)*
(Printed name and title)	*(Printed name and title)*

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AIA® Document A101® – 2017 Exhibit A

Insurance and Bonds

This Insurance and Bonds Exhibit is part of the Agreement, between the Owner and the Contractor, dated the day of in the year
(In words, indicate day, month and year.)

for the following **PRO T**:
(Name and location ress)

THE OWNER:
(Name, legal s nd s)

THE CO CT
(Nam , l s nd)

TABLE OF AR ICL

A.1 GEN

A.2 OWNER'S INSURANCE

A.3 CONTRACTOR'S INSURANCE AND BONDS

A.4 SPECIAL TERMS AND CONDITIONS

ARTICLE A.1 GENERAL

The Contractor shall purchase and maintain insurance, and provide bonds, as set forth in this Exhibit. As used in this Exhibit, the term General Conditions refers to AIA Document A201™–2017, General Conditions of the Contract for Construction and the Project Manual.

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

ARTICLE A.3 CONTRACTOR'S INSURANCE AND BONDS

§ A.3.1 General

§ A.3.1.1 Certificates of Insurance. The Contractor shall provide certificates of insurance acceptable to the Owner evidencing compliance with the requirements in this Article A.3 at the following times: (1) prior to commencement of the Work; (2) upon renewal or replacement of each required policy of insurance; and (3) upon the Owner's written

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

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

This document is intended to be used in conjunction with AIA Document A201®–2017, General Conditions of the Contract for Construction. Article 11 of A201®–2017 contains additional insurance provisions.

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request. An additional certificate evidencing continuation of commercial liability coverage, including coverage for completed operations, shall be submitted with the final Application for Payment and thereafter upon renewal or replacement of such coverage until the expiration of the periods required by Section A.3.2.1 and Section A.3.3.1. The certificates will show the Owner and such other parties as the Owner may designate as an additional insured, pursuant to A.3.1.3, on the Contractor's Commercial General Liability and excess or umbrella liability policy or policies. The coverage maintained by the Contractor shall be written by companies licensed to do business in the State where the project is located and maintaining an AM BEST rating of A- or better with a financial size rating of Class IX or larger.

§ A.3.1.2 Deductibles and Self-Insured Retentions. The Contractor shall disclose, in accordance with A.3.1.1, to the Owner any deductible or self- insured retentions applicable to any insurance required to be provided by the Contractor. Such deductibles or self-insured retentions shall be subject to the Owner's reasonable approval. The Contractor shall be responsible for all loss not covered because of such deductibles or retentions.

§ A.3.1.3 Additional Insured Obligations. To the fullest extent permitted by law, the Contractor (and all Subcontractors) shall cause the commercial general liability coverage to include (1) the Owner, the Architect, and the Architect's consultants as additional insureds; Grant funded projects shall also include the State of NJ, NJ Dept. of Education, NJ Schools Development Authority & NJ Economic Development Authority as additional insured, for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's operations; and (2) the Owner as an additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions for which loss occurs during completed operations. The additional insured coverage shall be primary and non-contributory to any of the Owner's general liability insurance policies and shall apply to both ongoing and completed operations. To the extent commercially available, the additional insured coverage shall be no less than that provided under Article A.3.2 Contractor's Required Insurance Coverage. The Products and Completed Operations insurance shall be maintained for five (5) years after final payment or the then current applicable statute of repose. A "per project endorsement" shall be included, so that the general aggregate limit applies solely to the Project that is the subject of this contract.

§ A.3.1.5 Contractor shall, without in any way altering Contractor's liability under the Contract or applicable law, obtain, pay for and maintain insurance for the coverages and amounts of coverage not less than those set forth below in the Schedule of Insurance Coverages and shall provide to Owner certificates issued by insurance companies satisfactory to Owner to evidence such coverage no later than 7 days from the date of the execution of this Contract and prior to any personnel or equipment being brought onto and/or before any work commences at the job site. The coverage afforded under any insurance obtained pursuant to this paragraph shall be primary to any valid and collectible insurance carried separately by any of the indemnities. Such certificates shall provide that there shall be no cancellation, non-renewal or material change of such coverage without thirty (30) days prior written notice to Owner. In the event of any failure by Contractor to comply with the provisions of this Article 3, Owner may, at its option, on notice to Contractor, suspend the Contract for cause until there is full compliance with this Article 3 and/ or terminate the Contract for cause. Alternatively, Owner may purchase such insurance at Contractor's expense, provided that Owner shall have no obligation to do so, and if Owner shall do so, Contractor shall not be relieved of or excused from the obligation to obtain and maintain such insurance amounts and coverages. Contractor shall provide to Owner a copy of any and all applicable insurance policies. The Owner shall be named as an additional insured on a primary and non-contributory basis on all Insurance Policies to be provided by the Contractor.

§ A.3.2 Contractor's Required Insurance Coverage

§ A.3.2.1 The Contractor shall purchase and maintain the following types and limits of insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Contractor shall maintain the required insurance until the expiration of the period for correction of Work as set forth in Section 12.2.2 of the General

(Paragraphs deleted)

Conditions The Contractor shall either require each of his subcontractors to procure and to maintain during the life of their subcontracts, subcontractor's public liability and property damage, of the type and in the same amounts as specified below; or insure the activities of their subcontractors under their respective policies.

§ **A.3.2.2 Commercial General Liability**

§ A.3.2.2.1 Commercial General Liability insurance for the Project written on an occurrence form with policy limits of not less than two million dollars ($ 2,000,000.00) each occurrence, two million dollars ($ 2,000,000.00) general

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aggregate, and two million dollars ($ 2,000,000.00) aggregate for products-completed operations hazard (and independent contractor liability), providing coverage for claims including

.1 damages because of bodily injury, sickness or disease, including occupational sickness or disease, and death of any person;

.2 personal injury and advertising injury;

.3 damages because of physical damage to or destruction of tangible property, including the loss of use of such property;

.4 bodily injury or property damage arising out of completed operations; and

.5 the Contractor's indemnity obligations under Section 3.18 of the General Conditions.

.6 the policy shall name the Owner, Architect, Construction Manager (if applicable) and their Consultants, Agents and Employees as additional insured; Grant funded projects shall also include the State of NJ, NJ Dept. of Education, NJ Schools Development Authority & NJ Economic Development Authority as additional insured.

§ A.3.2.2.2 The Contractor's Commercial General Liability policy under this Section A.3.2.2 shall not contain an exclusion or restriction of coverage for the following:

.1 Claims by one insured against another insured, if the exclusion or restriction is based solely on the fact that the claimant is an insured, and there would otherwise be coverage for the claim.

.2 Claims for property damage to the Contractor's Work arising out of the products-completed operations hazard where the damaged Work or the Work out of which the damage arises was performed by a Subcontractor.

.3 Claims for bodily injury other than to employees of the insured.

.4 Claims for indemnity under Section 3.18 of the General Conditions arising out of injury to employees of the insured.

.5 Claims or loss excluded under a prior work endorsement or other similar exclusionary language.

.6 Claims or loss due to physical damage under a prior injury endorsement or similar exclusionary language.

.7 Claims related to residential, multi-family, or other habitational projects, if the Work is to be performed on such a project.

.8 Claims related to roofing, if the Work involves roofing.

.9 Claims related to exterior insulation finish systems (EIFS), synthetic stucco or similar exterior coatings or surfaces, if the Work involves such coatings or surfaces.

.10 Claims related to earth subsidence or movement, where the Work involves such hazards.

.11 Claims related to explosion, collapse and underground hazards, where the Work involves such hazards.

§ A.3.2.3 Automobile Liability covering vehicles owned, and non-owned vehicles used, by the Contractor, with policy limits of not less than one million dollars ($ 1,000,000.00) per accident, for bodily injury, death of any person, and property damage arising out of the ownership, maintenance and use of those motor vehicles along with any other statutorily required automobile coverage.

§ A.3.2.4 The Contractor may achieve the required limits and coverage for Commercial General Liability and Automobile Liability through a combination of primary and excess or umbrella liability insurance, provided such primary and excess or umbrella insurance policies result in the same or greater coverage as the coverages required under Section A.3.2.2 and A.3.2.3, and in no event shall any excess or umbrella liability insurance provide narrower coverage than the primary policy. The excess policy shall not require the exhaustion of the underlying limits only through the actual payment by the underlying insurers.

§ A.3.2.5 Workers' Compensation at statutory limits applicable to the laws of the State and other State or Federal jurisdiction required to protect the employees of the Contractor and any Subcontractor who will be engaged in the performance of this Contract. The certificate must also indicate that no proprietor, partner, executive officer or member is excluded. This insurance shall include Employers' Liability Protection.

§ A.3.2.6 Employers' Liability with policy limits not less than one million dollars ($1,000,000) bodily injury, each occurrence, one million dollars ($1,000,000) disease, each employer, and one million dollars ($1,000,000) disease, aggregate limit. Including the employer's liability insurance under the umbrella insurance can satisfy the limit requirements.

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(Paragraphs deleted)

§ A.3.2.13 Excess Liability, umbrella insurance form, applying excess of primary to the commercial general liability, commercial automobile liability and employer's liability insurance shall be provided with minimum limits in an amount such that the commercial general liability insurance and excess/umbrella is equal to $2,000,000 per occurrence, general aggregate, and products/completed operations.

§ A.3.2.14 The General Liability insurance, General Aggregate and Umbrella Excess Liability limits shall apply and be written exclusively, in total, to this Project only. A per project endorsement for all coverages and limits must be included in each policy.

A.3.2.14.1 Bodily injury and property damage insurance policies shall be so written as to provide coverage for special hazards where such hazards will be incidental to subcontractors' work.

§ A.3.3 Contractor's Other Insurance Coverage

§ A.3.3.1 Insurance selected and described in this Section A.3.3 shall be purchased from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Contractor shall maintain the required insurance until the expiration of the period for correction of Work as set forth in Section 12.2.2 of the General Conditions, unless a different duration is stated below:

(If the Contractor is required to maintain any of the types of insurance selected below for a duration other than the expiration of the period for correction of Work, state the duration.)

§ A.3.3.2 The Contractor shall purchase and maintain the following types and limits of insurance in accordance with Section A.3.3.1.

(Select the types of insurance the Contractor is required to purchase and maintain by placing an X in the box(es) next to the description(s) of selected insurance. Where policy limits are provided, include the policy limit in the appropriate fill point.)

[ ] **§ A.3.3.2.1** Property insurance of the same type and scope satisfying the requirements identified in Section A.2.3, which, if selected in this section A.3.3.2.1, relieves the Owner of the responsibility to purchase and maintain such insurance except insurance required by Section A.2.3.1.3 and Section A.2.3.3. The Contractor shall comply with all obligations of the Owner under Section A.2.3 except to the extent provided below. The Contractor shall disclose to the Owner the amount of any deductible, and the Owner shall be responsible for losses within the deductible. Upon request, the Contractor shall provide the Owner with a copy of the property insurance policy or policies required. The Owner shall adjust and settle the loss with the insurer and be the trustee of the proceeds of the property insurance in accordance with Article 11 of the General Conditions unless otherwise set forth below:

(Where the Contractor's obligation to provide property insurance differs from the Owner's obligations as described under Section A.2.3, indicate such differences in the space below. Additionally, if a party other than the Owner will be responsible for adjusting and settling a loss with the insurer and acting as the trustee of the proceeds of property insurance in accordance with Article 11 of the General Conditions, indicate the responsible party below.)

[ ] **§ A.3.3.2.4** Insurance for physical damage to property while it is in storage and in transit to the construction site on an "all-risks" completed value form.

[ ] **§ A.3.3.2.5** Property insurance on an "all-risks" completed value form, covering property owned by the Contractor and used on the Project, including scaffolding and other equipment.

[ ] **§ A.3.3.2.6 Other Insurance**

(List below any other insurance coverage to be provided by the Contractor and any applicable limits.)

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Coverage	Limits

§ A.3.4 Performance Bond and Payment Bond

The Contractor shall provide surety bonds, from a company or companies lawfully authorized to issue surety bonds in the jurisdiction where the Project is located, as follows:
(Specify type and penal sum of bonds.)

Type	Penal Sum ($0.00)
Payment Bond	Amount equal to the Contract Sum
Performance Bond	Amount equal to the Contract Sum

Payment and Performance Bonds shall be in a form acceptable to the Owner.

§ A.3.4.1 Contractor shall furnish each of the performance bond and payment bond meeting all statutory requirements of the State of New Jersey in form and substance satisfactory to the Owner and, without limitation, complying with the following specific requirements:

.1 Except as otherwise required by statute, the form and substance of such bonds shall be satisfactory to the Owner in the Owner's sole judgment;

.2 The bonds shall be executed by an approved surety company authorized to do business in the State of New Jersey and in accordance with N.J.S.A. 2A:44-143 and 2A:44-144, and with the three highest rating categories of rating companies nationally recognized and listed as per Appendix A, (go to www.nj.gov/dobi/surety.htm), and shall remain in effect for a period of not less than one year following the date of substantial completion or the time required to resolve any items of incomplete or inadequate work and the payment of any disputed amounts, whichever time period is longer;

.3 The performance bond and the labor and material payment bond shall each be in an amount equal to the Contract Sum;

.4 The Contractor shall require the attorney-in-fact who executes the required bonds on behalf of the surety to affix thereto a certified and current copy of his/her power of attorney indicating the monetary limit of such power;

.5 Any bond under this Paragraph must display the surety's bond number. 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. Any other alterations, 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 surety of such matter is hereby waived.

.2 Surety further agrees that in the event of any default by the Owner in the performance of the Owner's obligations to the Contractor under the Contract, the Contractor or surety shall cause written notice of such default (specifying said default in writing) to be given to the Owner, and the Owner shall have thirty (30) calendar days after receipt of such notice within which to cure such default or such additional reasonable time as may be required if the nature of such default is such that it cannot be cured within thirty (30) calendar days. Such notice of default shall be sent by certified or registered U.S. mail, return receipt requested, first class postage, prepaid to the Owner.

Special terms and conditions that modify this Insurance and Bonds Exhibit, if any, are as follows:

(Paragraphs deleted)

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Coverage **Sub-Limit**

§ A.2.3.1.3 Unless the parties agree otherwise, upon Substantial Completion, the Owner shall continue the insurance required by Section A.2.3.1 or, if necessary, replace the insurance policy required under Section A.2.3.1 with property insurance written for the total value of the Project that shall remain in effect until expiration of the period for correction of the Work set forth in Section 12.2.2 of the General Conditions.

§ A.2.3.1.4 Deductibles and Self-Insured Retentions. If the insurance required by this Section A.2.3 is subject to deductibles or self-insured retentions, the Owner shall be responsible for all loss not covered because of such deductibles or retentions.

§ A.2.3.2 Occupancy or Use Prior to Substantial Completion. The Owner's occupancy or use of any completed or partially completed portion of the Work prior to Substantial Completion shall not commence until the insurance company or companies providing the insurance under Section A.2.3.1 have consented in writing to the continuance of coverage. The Owner and the Contractor shall take no action with respect to partial occupancy or use that would cause cancellation, lapse, or reduction of insurance, unless they agree otherwise in writing.

§ A.2.3.3 Insurance for Existing Structures

If the Work involves remodeling an existing structure or constructing an addition to an existing structure, the Owner shall purchase and maintain, until the expiration of the period for correction of Work as set forth in Section 12.2.2 of the General Conditions, "all-risks" property insurance, on a replacement cost basis, protecting the existing structure against direct physical loss or damage from the causes of loss identified in Section A.2.3.1, notwithstanding the undertaking of the Work. The Owner shall be responsible for all co-insurance penalties.

§ A.2.4 Optional Extended Property Insurance.

The Owner shall purchase and maintain the insurance selected and described below.

(Select the types of insurance the Owner is required to purchase and maintain by placing an X in the box(es) next to the description(s) of selected insurance. For each type of insurance selected, indicate applicable limits of coverage or other conditions in the fill point below the selected item.)

[–] **§ A.2.4.1 Loss of Use, Business Interruption, and Delay in Completion Insurance**, to reimburse the Owner for loss of use of the Owner's property, or the inability to conduct normal operations due to a covered cause of loss.

[–] **§ A.2.4.2 Ordinance or Law Insurance**, for the reasonable and necessary costs to satisfy the minimum requirements of the enforcement of any law or ordinance regulating the demolition, construction, repair, replacement or use of the Project.

[–] **§ A.2.4.3 Expediting Cost Insurance**, for the reasonable and necessary costs for the temporary repair of damage to insured property, and to expedite the permanent repair or replacement of the damaged property.

[–] **§ A.2.4.4 Extra Expense Insurance**, to provide reimbursement of the reasonable and necessary excess costs incurred during the period of restoration or repair of the damaged property that are over and above the total costs that would normally have been incurred during the same period of time had no loss or damage occurred.

[–] **§ A.2.4.5 Civil Authority Insurance**, for losses or costs arising from an order of a civil authority

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prohibiting access to the Project, provided such order is the direct result of physical damage covered under the required property insurance.

[ ] **§ A.2.4.6 Ingress/Egress Insurance**, for loss due to the necessary interruption of the insured's business due to physical prevention of ingress to, or egress from, the Project as a direct result of physical damage.

[ ] **§ A.2.4.7 Soft Costs Insurance**, to reimburse the Owner for costs due to the delay of completion of the Work, arising out of physical loss or damage covered by the required property insurance: including construction loan fees; leasing and marketing expenses; additional fees, including those of architects, engineers, consultants, attorneys and accountants, needed for the completion of the construction, repairs, or reconstruction; and carrying costs such as property taxes, building permits, additional interest on loans, realty taxes, and insurance premiums over and above normal expenses.

§ A.2.5 Other Optional Insurance.

The Owner shall purchase and maintain the insurance selected below.

(Select the types of insurance the Owner is required to purchase and maintain by placing an X in the box(es) next to the description(s) of selected insurance.)

[ ] **§ A.2.5.1 Cyber Security Insurance** for loss to the Owner due to data security and privacy breach, including costs of investigating a potential or actual breach of confidential or private information. *(Indicate applicable limits of coverage or other conditions in the fill point below.)*

[ ] **§ A.2.5.2 Other Insurance**

(List below any other insurance coverage to be provided by the Owner and any applicable limits.)

Coverage	**Limits**

...

§ A.3.1.1 Certificates of Insurance. The Contractor shall provide certificates of insurance acceptable to the Owner evidencing compliance with the requirements in this Article A.3 at the following times: (1) prior to commencement of the Work; (2) upon renewal or replacement of each required policy of insurance; and (3) upon the Owner's written request. An additional certificate evidencing continuation of commercial liability coverage, including coverage for completed operations, shall be submitted with the final Application for Payment and thereafter upon renewal or replacement of such coverage until the expiration of the periods required by Section A.3.2.1 and Section A.3.3.1. The certificates will show the Owner as an additional insured and such other parties as the Owner may designate as an additional insured, pursuant to A.3.1.3, on the Contractor's Commercial General Liability and excess or umbrella liability policy or policies. The coverage maintained by the Contractor shall be written by companies licensed to do business in the State where the project is located and maintaining an AM BEST rating of A- or better with a financial size rating of Class IX or larger.

§ A.3.1.2 Deductibles and Self-Insured Retentions. The Contractor shall disclose disclose, in accordance with A.3.1.1, to the Owner any deductible or self- insured retentions applicable to any insurance required to be provided by the Contractor. Such deductibles or self-insured retentions shall be subject to the Owner's reasonable approval. The Contractor shall be responsible for all loss not covered because of such deductibles or retentions.

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§ A.3.1.3 Additional Insured Obligations. To the fullest extent permitted by law, the Contractor (and all Subcontractors) shall cause the commercial general liability coverage to include (1) the Owner, the Architect, and the Architect's consultants as additional ~~insureds~~ insureds; Grant funded projects shall also include the State of NJ, NJ Dept. of Education, NJ Schools Development Authority & NJ Economic Development Authority as additional insured, for claims caused in whole or in part by the Contractor's negligent acts or omissions during the Contractor's operations; and (2) the Owner as an additional insured for claims caused in whole or in part by the Contractor's negligent acts or omissions for which loss occurs during completed operations. The additional insured coverage shall be primary and non-contributory to any of the Owner's general liability insurance policies and shall apply to both ongoing and completed operations. To the extent commercially available, the additional insured coverage shall be no less than that provided ~~by Insurance Services Office, Inc. (ISO) forms CG 20 10 07 04, CG 20 37 07 04, and, with respect to the Architect and the Architect's consultants, CG 20 32 07 04.~~under Article A.3.2 Contractor's Required Insurance Coverage. The Products and Completed Operations insurance shall be maintained for five (5) years after final payment or the then current applicable statute of repose. A "per project endorsement" shall be included, so that the general aggregate limit applies solely to the Project that is the subject of this contract.

§ A.3.1.5 Contractor shall, without in any way altering Contractor's liability under the Contract or applicable law, obtain, pay for and maintain insurance for the coverages and amounts of coverage not less than those set forth below in the Schedule of Insurance Coverages and shall provide to Owner certificates issued by insurance companies satisfactory to Owner to evidence such coverage no later than 7 days from the date of the execution of this Contract and prior to any personnel or equipment being brought onto and/or before any work commences at the job site. The coverage afforded under any insurance obtained pursuant to this paragraph shall be primary to any valid and collectible insurance carried separately by any of the indemnities. Such certificates shall provide that there shall be no cancellation, non-renewal or material change of such coverage without thirty (30) days prior written notice to Owner. In the event of any failure by Contractor to comply with the provisions of this Article 3, Owner may, at its option, on notice to Contractor, suspend the Contract for cause until there is full compliance with this Article 3 and/ or terminate the Contract for cause. Alternatively, Owner may purchase such insurance at Contractor's expense, provided that Owner shall have no obligation to do so, and if Owner shall do so, Contractor shall not be relieved of or excused from the obligation to obtain and maintain such insurance amounts and coverages. Contractor shall provide to Owner a copy of any and all applicable insurance policies. The Owner shall be named as an additional insured on a primary and non-contributory basis on all Insurance Policies to be provided by the Contractor.

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§ A.3.2.1 The Contractor shall purchase and maintain the following types and limits of insurance from an insurance company or insurance companies lawfully authorized to issue insurance in the jurisdiction where the Project is located. The Contractor shall maintain the required insurance until the expiration of the period for correction of Work as set forth in Section 12.2.2 of the General ~~Conditions, unless a different duration is stated below:~~
~~*(If the Contractor is required to maintain insurance for a duration other than the expiration of the period for correction of Work, state the duration.)*~~

Conditions The Contractor shall either require each of his subcontractors to procure and to maintain during the life of their subcontracts, subcontractor's public liability and property damage, of the type and in the same amounts as specified below; or insure the activities of their subcontractors under their respective policies.

...

§ A.3.2.2.1 Commercial General Liability insurance for the Project written on an occurrence form with policy limits of not less than two million dollars ($ 2,000,000.00) each occurrence, two million dollars ($ 2,000,000.00) general aggregate, and two million dollars ($ 2,000,000.00) aggregate for products-completed operations ~~hazard,~~ hazard (and independent contractor liability), providing coverage for claims including

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.5 the Contractor's indemnity obligations under Section 3.18 of the General Conditions.

.6 the policy shall name the Owner, Architect, Construction Manager (if applicable) and their Consultants, Agents and Employees as additional insured; Grant funded projects shall also include the State of NJ, NJ Dept. of Education, NJ Schools Development Authority & NJ Economic Development Authority as additional insured.

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...

§ A.3.2.3 Automobile Liability covering vehicles owned, and non-owned vehicles used, by the Contractor, with policy limits of not less than one million dollars ($ 1,000,000.00) per accident, for bodily injury, death of any person, and property damage arising out of the ownership, maintenance and use of those motor vehicles along with any other statutorily required automobile coverage.

...

§ A.3.2.5 Workers' Compensation at statutory ~~limits.~~limits applicable to the laws of the State and other State or Federal jurisdiction required to protect the employees of the Contractor and any Subcontractor who will be engaged in the performance of this Contract. The certificate must also indicate that no proprietor, partner, executive officer or member is excluded. This insurance shall include Employers' Liability Protection.

§ A.3.2.6 Employers' Liability with policy limits not less than ~~($) each accident, ($) each employee, and ($) policy limit.~~one million dollars ($1,000,000) bodily injury, each occurrence, one million dollars ($1,000,000) disease, each employer, and one million dollars ($1,000,000) disease, aggregate limit. Including the employer's liability insurance under the umbrella insurance can satisfy the limit requirements.

~~**§ A.3.2.7** Jones Act, and the Longshore & Harbor Workers' Compensation Act, as required, if the Work involves hazards arising from work on or near navigable waterways, including vessels and docks~~

~~**§ A.3.2.8** If the Contractor is required to furnish professional services as part of the Work, the Contractor shall procure Professional Liability insurance covering performance of the professional services, with policy limits of not less than ($) per claim and ($) in the aggregate.~~

~~**§ A.3.2.9** If the Work involves the transport, dissemination, use, or release of pollutants, the Contractor shall procure Pollution Liability insurance, with policy limits of not less than ($) per claim and ($) in the aggregate.~~

~~**§ A.3.2.10** Coverage under Sections A.3.2.8 and A.3.2.9 may be procured through a Combined Professional Liability and Pollution Liability insurance policy, with combined policy limits of not less than ($) per claim and ($) in the aggregate.~~

~~**§ A.3.2.11** Insurance for maritime liability risks associated with the operation of a vessel, if the Work requires such activities, with policy limits of not less than ($) per claim and ($) in the aggregate.~~

~~**§ A.3.2.12** Insurance for the use or operation of manned or unmanned aircraft, if the Work requires such activities, with policy limits of not less than ($) per claim and ($) in the aggregate.~~

§ A.3.2.13 Excess Liability, umbrella insurance form, applying excess of primary to the commercial general liability, commercial automobile liability and employer's liability insurance shall be provided with minimum limits in an amount such that the commercial general liability insurance and excess/umbrella is equal to $2,000,000 per occurrence, general aggregate, and products/completed operations.

§ A.3.2.14 The General Liability insurance, General Aggregate and Umbrella Excess Liability limits shall apply and be written exclusively, in total, to this Project only. A per project endorsement for all coverages and limits must be included in each policy.

A.3.2.14.1 Bodily injury and property damage insurance policies shall be so written as to provide coverage for special hazards where such hazards will be incidental to subcontractors' work.

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[ ] ~~**§ A.3.3.2.2 Railroad Protective Liability Insurance**, with policy limits of not less than ($) per claim and ($) in the aggregate, for Work within fifty (50) feet of railroad property.~~

~~[ ] **§ A.3.3.2.3 Asbestos Abatement Liability Insurance**, with policy limits of not less than ($) per claim~~

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PART 1 - CONTRACT CONDITIONS AND GENERAL REQUIREMENTS

SECTION 00700 - GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION
AIA DOCUMENT A232 – 2019

AIA® Document A232® – 2019

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

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

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

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

Princeton Public Schools Board of Education
25 Valley Road, 2nd Floor, Princeton, NJ 08540

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

Fraytak Veisz Hopkins Duthie, P.C. Architects - Planners
1515 Lower Ferry Road, Trenton, NJ 08618

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

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

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

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ARTICLE 1 GENERAL PROVISIONS

§ 1.1 Basic Definitions

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

§1.1.2.1 The Contractor acknowledges and warrants that it has closely examined all of the Contract Documents, that they are suitable and sufficient to enable the Contractor to complete the Work in a timely manner for the Contract Sum, and that they include all Work, whether or not shown or described, which reasonably may be inferred to be required or useful for the competition of the Work in full compliance with all applicable codes, laws, ordinances and regulations and that questions regarding the bid documents and any interpretation(s) regarding same have been asked by the Contractor, in the form and manner required in the instructions to bidders.

§1.1.2.2 In connection therewith, Contractor specifically represents and warrants to Owner that it has, by careful examination, satisfied itself as to: (1) the nature, location, and character of the general area in which the Project is located, including without limitation, its climatic conditions, available labor supply and labor costs, and available equipment supply and equipment costs; and (2) the quality and quantity of materials, supplies, tools, equipment, labor, and professional services necessary to complete the Work in the manner and within the cost and time frame required by the Contract Documents; and (3) the condition of existing and planned structures on the site and the ability, safety and appropriateness of same to receive the Work in the manner required by the Contract Documents.

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

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

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

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

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

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§1.1.7.1. Construction Drawings prepared by the Architect are intended to show the scope of work, including but not limited to general arrangement of stairs, equipment, ducts, piping and other elements of the structure, and approximate locations and sizes of equipment. This does not relieve the Contractor from providing all connections and accessories necessary to make structural, mechanical and electrical work complete, ready to operate, in compliance with all applicable codes, laws and other regulations, and acceptable to the Architect. As such, they are not to serve as Shop Drawings.

§1.1.7.2 Locations and arrangements of items are designated by dimensions at less than full scale, unless otherwise noted. Such reductions of scale may vary and will be noted.

§1.1.7.3 Designs, information, reports and other materials and/or data may be performed and/or provided for the project by other than the Architect. Such designs, information, reports and other materials and/or data may include, without limitation, designs, information, reports and other materials and/or data performed and/or provided by the Contractor(s) or by Subcontractors and/or other consultants retained by the Contractor(s) and/or the Owner. Such designs, information, reports and other materials and/or data may include without limitation the locations, quantities, sizes, conditions and scope of specific items of the construction Work required to be provided for the Project. The Contractor shall immediately notify the Construction Manager and Architect in writing upon its discovery or knowledge of any errors, omissions or defects in any designs, information, reports and other materials and/or data prepared or provided by the Contractor or on the Contractor's behalf which are provided to the Architect for the Architect's preparation of its design documentation for the Project. The Contractor shall also be required to immediately notify the Architect in writing in the event that it discovers or becomes aware of any errors, omissions or defects in any designs, information, reports or other materials or data that are provided to the Architect by others for the preparation of the Architect's design documentation. The Contractor shall also be required to immediately notify the Construction Manager and Architect in writing if it discovers or becomes aware of any discrepancies between any design documentation prepared by the Architect and any designs, information, reports or other materials and/or data provided to the Architect by the Contractor(s), the Owner, Subcontractors or Subconsultants retained by the Contractor(s) or Owner, or by others. In such event, the Contractor shall promptly submit a written request for resolution of such discrepancy to the Architect and Owner.

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

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

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

§ 1.2 Correlation and Intent of the Contract Documents

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

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

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

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

§1.2.3.1 In the event of a conflict or an inconsistency in or among the Contract Documents, or between the Contract Documents and applicable codes in effect at the time the Contract Sum is bid or negotiated, the Contractor shall, unless directed otherwise in writing by and Addendum or Change Order, provide the greatest quantity, highest quality, highest degree of safety and most stringent material, equipment or Work.

§ 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. Any information or data obtained or derived from electronic files to create shop drawings or other submissions must be compared with the hard paper Construction Documents issued by the Architect for construction. Use of electronic documents for any reason is at the user's sole risk.

§ 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 may designate in writing a representative who shall have express authority to bind the Owner with respect to all matters requiring the Owner's approval or authorization. Except as otherwise provided in Section 4.2.1, the Construction Manager and the Architect do not have such authority. The term "Owner" means the Owner or the Owner's authorized representative.

§ 2.2 Evidence of the Owner's Financial Arrangements

(Paragraphs deleted)

§ 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. Unless otherwise provided under the Contract Documents, the Owner, assisted by the Construction Manager, shall secure and pay for the building permit.

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

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

§ 2.3.4 If the employment of the Construction Manager or Architect terminates, the Owner shall employ a successor construction manager or architect to whom the Contractor has no reasonable objection and whose status under the Contract Documents shall be that of the Construction Manager or Architect, respectively.

§ 2.3.5 If necessary and requested by the Architect, 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. The furnishing of these surveys and the legal description of the site shall not relieve the Contractor from its duties under the Contract Documents. Neither the Owner nor Architect is required to provide subsurface information. Any such investigations were for their own purposes and are not part of the Contract Documents. If shared, this information is for convenience only and without warranty.

§ 2.3.6 If necessary and requested by the Architect, 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.

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

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

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§ 2.4 Owner's Right to Stop the Work

If, in the reasonable belief of the Owner, the Contractor fails to correct alleged defective 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, or fails or refuses to provide a sufficient amount of properly supervised and coordinated labor, materials, or equipment so as to be able to complete the Work within the Contract Time or fails to remove and discharge (within ten days) any lien filed upon Owner's property by anyone claiming by, though, or under Contractor, or disregards the instructions of Architect or Owner when based on the requirements of 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, and the Contractor shall have no claim for damage by reason thereof.

§ 2.4.1 Notwithstanding the foregoing, the Owner shall have the authority to immediately correct, service, repair, replace or otherwise make operational any component of their facilities, including equipment, if, in the sole discretion of the Owner, the damaged component is a threat to education, safety, or security. The Owner is obligated to notify the Contractor of the issue threatening education, safety or security, and the Owner's intent to remedy immediately with other resources, backcharging the Contractor for the cost of said service. However, there is no obligation to provide the Contractor an opportunity to cure, as required for corrective actions necessary to protect the Owner's interest in education, safety, and security.

§ 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 (i) 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, or (ii) Owner and Architect reasonably believe that such correction cannot be properly completed within a twenty-day period, the Owner may, without prejudice to other remedies the Owner may have, correct such default or neglect. Such action by the Owner and amounts charged to the Contractor are both subject to review by the Construction Manager and prior approval of the Architect, and the Construction Manager or Architect may, pursuant to Section 9.5.1, withhold or nullify a Certificate for Payment in whole or in part, to the extent reasonably necessary to reimburse the Owner for the reasonable cost of correcting such deficiencies, including Owner's expenses and compensation for the Construction Manager's and Architect's and their respective consultants' additional services made necessary by such default, neglect, or failure. If current and future payments are not sufficient to cover such amounts, the Contractor shall pay the difference to the Owner. If the Contractor disagrees with the actions of the Owner as approved by the Architect, or the amounts claimed as costs to the Owner, the Contractor may file a Claim pursuant to Article 15. Notwithstanding the above, if deficiencies create an emergency threatening safety or property, the Owner may immediately correct the issue without prior notice, and deduct related costs from payments due the Contractor. This right does not relieve the Contractor of its obligations, nor does it impose any duty on the Owner to act for the benefit of the Contractor or others.

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 Construction Manager or Architect in their administration of the Contract, or by tests, inspections or approvals required or performed by persons or entities other than the Contractor.

§ 3.2 Review of Contract Documents and Field Conditions by Contractor

§ 3.2.1 Execution of the Contract by the Contractor is a representation that the Contractor has visited the site, become generally familiar with local conditions under which the Work is to be performed, and correlated personal observations with requirements of the Contract Documents. The Contractor has carefully examined the Plans, Specifications, and the site of the work, and based on their own investigations, the Contractor has satisfied themselves

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regarding the nature and location of the work, the character, quality, and quantity of the surface and subsurface materials likely to be encountered, the character of equipment and other facilities needed for the performance of the work, the general local conditions, and all other materials that may in any way affect the work or their performance.

§ 3.2.2 Because the Contract Documents are complementary, the Contractor shall, before starting each portion of the Work, carefully study and compare the various Contract Documents relative to that portion of the Work, as well as the information furnished by the Owner pursuant to Section 2.3.5, shall take field measurements of any existing conditions related to that portion of the Work, and shall observe any conditions at the site affecting it. The Contractor shall satisfy itself as to the accuracy of all dimensions and locations. In all cases of interconnection of its work with existing or other work, it shall verify at the site, all dimensions relating to such existing or other work. These obligations are for the purpose of facilitating coordination and construction by the Contractor and are not for the purpose of discovering errors, omissions, or inconsistencies in the Contract Documents; however, the Contractor shall promptly report to the Construction Manager and Architect any errors, inconsistencies or omissions discovered by or made known to the Contractor as a request for information submitted to the Construction Manager in such form as the Construction Manager and Architect may require. It is recognized that the Contractor's review is made in the Contractor's capacity as a contractor and not as a licensed design professional, unless otherwise specifically provided in the Contract Documents. If the Contractor performs any construction activity involving an error, inconsistency, nonconformity, or omission in the Contract Documents – which the Contractor either recognized or reasonably should have recognized – and fails to notify the Architect, the Contractor shall assume complete responsibility for such performance, including the full amount of attributable costs for correction and any damages to Owner, Architect, Owner's Representative, or Separate Contractors arising from that work. The Contractor may not be liable to the Owner for damage resulting from errors, inconsistencies or omissions in the Contract Documents that could not have been discovered by a prudent and experienced Contractor in advance and that are not in the nature described in and intended to be covered in the Contract Documents, unless the Contractor recognized or reasonably should have recognized such error, inconsistency or omission and failed to report it to the Architect. If the Contractor proceeds with construction activities involving such recognized or reasonably recognizable errors, inconsistencies, or omissions without notifying the Architect, the Contractor shall assume full responsibility for such work and bear all associated costs for correction.

§ 3.2.3 The Contractor is not required to ascertain that the Contract Documents are in accordance with applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of public authorities, but the Contractor shall promptly report to the Construction Manager and Architect any nonconformity discovered by or made known to the Contractor as a request for information submitted to Construction Manager in such form as the Construction Manager and Architect may require. Notwithstanding the foregoing, as an inducement for the Owner to execute the Owner-Contractor Agreement, the Contractor represents and warrants to the Owner (in addition to the other representations and warranties contained in the Contract Documents) that they are familiar with local ordinances and applicable building codes affecting the Work, and these representations and warranties shall survive the execution and delivery of the Owner-Contractor Agreement and the final completion of the Work.

§ 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 and/or their Surety 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 of Sections 3.2.2. or 3.2.3, 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, unless the Contractor recognized or should have recognized such error, inconsistency, omission or difference and yet knowingly failed to timely report it to the Architect.

§ 3.2.4.1 The General Contractor shall perform no portion of the Work at any time without Contract Documents or, where required, approved Shop Drawings, Product Data or Samples for such portion of the Work.

§ 3.2.4.2 Should the General Contractor elect to release work without approvals, same shall be at his/her own risk and expense. Such work, if it is determined by the Architect and Construction Manager to not be in accordance with the requirements of the Contract Documents, shall be removed and replaced without additional cost or extension of time.

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§ 3.3 Supervision and Construction Procedures

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

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

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

§ 3.4 Labor and Materials

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

§ 3.4.2 Except in the case of minor changes in the Work approved by the Architect in accordance with Section 3.12.8 or ordered by the Architect in accordance with Section 7.4, the Contractor may make substitutions only with the consent of the Owner, after evaluation by the Architect, in consultation with the Construction Manager, and in accordance with a Change Order or Construction Change Directive. The Owner may back charge the Contractor for expenses incurred due to the Contractor's error, act, omission, or noncompliance, with deductions made from payments due. The Contractor has 30 days to dispute a back charge; failure to do so constitutes acceptance and waiver of any objection.

§ 3.4.3 The Contractor shall maintain sufficient skilled workers on site at all times, with all Work supervised by a qualified Project Superintendent. The Contractor shall enforce strict discipline and good order among the Contractor's employees and other persons carrying out the Work. The Contractor shall not permit employment of unfit persons or persons not properly skilled in tasks assigned to them. The Contractor shall also at all times use best efforts and its judgment as an experienced General Contractor to adopt and implement policies and practices which are designed to avoid work stoppages, slowdowns, disputes or strikes; and shall at all times use best efforts to maintain project-wide labor harmony. The Owner reserves the right to require the Contractor to remove from the Project any of its personnel, or Subcontractor's personnel, for violating Owner's policies, rules or regulations.

§3.4.5 All materials delivered to the premises which are to form a part of the work are to be considered the property of the Owner and must not be removed without the Owner's consent. Materials not incorporated into the work shall become the Contractor's property and must be removed from the Project Site at or prior to Substantial Completion, unless other arrangements are made with the Owner.

§ 3.5 Warranty

§ 3.5.1 The Contractor warrants to the Owner, Construction Manager, and Architect that materials and equipment furnished under the Contract will be of good quality and new unless the Contract Documents require or permit otherwise. The Contractor further warrants that the Work will conform to the requirements of the Contract Documents and will be free from defects, except for those inherent in the quality of the Work the Contract Documents require or permit. Work, materials, or equipment not conforming to these requirements may be considered defective. The Contractor's warranty excludes remedy for damage or defect caused by abuse, alterations to the Work not executed by

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the Contractor, improper or insufficient maintenance, improper operation, or normal wear and tear and normal usage. If required by the Construction Manager or Architect, the Contractor shall furnish satisfactory evidence as to the kind and quality of materials and equipment. The Contractor's maintenance warranty shall be at least 2 years from Substantial Completion and shall not reduce any Manufacturer's Warranty period.

§ 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.

§ 3.5.3 The Contractor represents that all manufacturer and supplier warranties shall run directly to or be specifically assignable to the Owner. The Contractor warrants that all portions of the Work that will be covered by a manufacturer's or supplier's warranty shall be performed in such a manner so as to preserve all rights under such warranties. The Contractor hereby assigns to the Owner, effective upon the termination of this Contract, all manufacturer's and supplier's warranties relating to the Work; and the Contractor shall, upon request of Owner, execute any documents reasonably requested by Owner to effectuate such assignment. If the Owner attempts to enforce a claim based upon a manufacturer's or supplier's warranty and such manufacturer or supplier refuses to honor such warranty based in whole or in part on a claim of defective installation by the Contractor, the Contractor shall be responsible for any resulting loss or damages incurred by the Owner as a result of the manufacturer's or supplier's refusal to honor such warranty. The Contractor's obligation under this Subparagraph 3.5.3 shall survive the expiration or earlier termination of the Contract.

§ 3.5.4 The Contractor agrees that all warranties in the Contract Documents survive acceptance of, delivery of and payment for the goods, whether any defect shall be latent or patent. The Contractor agrees to correct, without expense to, and to the satisfaction of the Owner, any defects that may develop in the Work. Any facilities, including buildings and their contents, which have been damaged either directly or indirectly by the Work performed by the Contractor shall be repaired within ten (10) working days after receipt of written notice of the defect from the Owner by the Contractor at no cost to the Owner.

§ 3.6 Taxes

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

§ 3.7 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. The Contractor shall secure and pay 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. The Contractor shall arrange for any inspections by governmental authorities needed to obtain any necessary occupancy permits.

§ 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 Prior to application for final payment, furnish a written certification that the Work is in conformance with applicable laws, ordinances, rules, regulations and lawful orders.

§ 3.7.4 Concealed or Unknown Conditions. If the Contractor encounters conditions at the site that are (1) subsurface or otherwise concealed physical conditions that differ materially from those indicated in the Contract Documents or (2) unknown physical conditions of an unusual nature that differ materially from those ordinarily found to exist and generally recognized as inherent in construction activities of the character provided for in the Contract Documents, the Contractor shall promptly provide notice to the Owner, Construction Manager, and the Architect before conditions are disturbed and in no event later than 14 days after first observance of the conditions. The Architect and Construction

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Manager will promptly investigate such conditions and, if the Architect, in consultation with the Construction Manager, determines that they differ materially and cause an increase or decrease in the Contractor's cost of, or time required for, performance of any part of the Work, will recommend that an equitable adjustment be made in the Contract Sum or Contract Time, or both. If the Architect, in consultation with the Construction Manager, determines that the conditions at the site are not materially different from those indicated in the Contract Documents and that no change in the terms of the Contract is justified, the Architect shall promptly notify the Owner, Construction Manager, and Contractor, stating the reasons. If the Owner or Contractor disputes the Architect's determination or recommendation, either party may submit a Claim as provided in Article 15.

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

§ 3.8 Allowances

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

§ 3.8.2 Unless otherwise provided in the Contract Documents:

- **.1** allowances shall cover the cost to the Contractor of materials and equipment delivered at the site and all required taxes, less applicable trade discounts;
- **.2** Contractor's costs for 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; 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..

§ 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, acceptable to the Owner and Architect, who shall be in attendance at the Project site during performance of the Work, and until the final completion of all work, including all corrections and punch list items. The superintendent shall represent the Contractor, and communications given to the superintendent shall be as binding as if given to the Contractor.

§ 3.9.1.1 The Contractor must provide a Superintendent for the project and a Foreman at each site during all work, including by subcontractors, ensuring adequate supervision. If supervision is deemed insufficient, the Contractor must add staff at no extra cost.

§ 3.9.2 The Contractor, as soon as practicable after award of the Contract, shall notify the Owner and Architect, through the Construction Manager, of the name and qualifications of a proposed superintendent. Within ten (10) days of receiving the Notice to Proceed, the Contractor shall submit resumes for the proposed project manager and full-time superintendent, including at least three similar recent projects with Owner and Architect contact information for each. Within 14 days of receipt of the information, the Construction Manager may notify the Contractor, stating whether the Owner, the Construction Manager, or the Architect (1) has reasonable objection to the proposed superintendent or (2) require additional time for review. Failure of the Construction Manager to provide notice within the 14-day period shall constitute notice of no reasonable objection.

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

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§3.9.4 The Contractor shall immediately remove from the Project, whenever requested by the Owner or Construction Manager, any employee, Project Manager or Superintendent who is considered by the Owner or Construction Manager to be incompetent or disposed to be disorderly, or who, for any reason, is not satisfactory to the Owner and the Project. The replacement shall be at no additional cost, and that person shall not be employed on the Project again without the consent of the Owner or Construction Manager.

§ 3.10 Contractor's Construction and Submittal Schedules

§ 3.10.1 The Contractor, promptly after being awarded the Contract, shall submit for the Owner's and Architect's information, and the Construction Manager's use in developing the Project schedule, a Contractor's construction schedule for the Work. The schedule shall contain detail appropriate for the Project, including (1) the date of commencement of the Work, interim schedule milestone dates, and the date of Substantial Completion; (2) an apportionment of the Work by construction activity; and (3) the time required for completion of each portion of the Work. The schedule shall provide for the orderly progression of the Work to completion and shall not exceed time limits current under the Contract Documents. The schedule shall be revised at appropriate intervals as required by the conditions of the Work and Project. The Contractor shall cooperate with the Construction Manager in scheduling and performing the Contractor's Work to avoid conflict with, and as to cause no delay in, the work or activities of other Contractors, or the construction or operations of the Owner's own forces or Separate Contractors.

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

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

§ 3.10.4 The Contractor shall perform the Work in general accordance with the most recent schedules submitted to the Owner, Construction Manager, and Architect, and incorporated into the approved Project schedule.

§ 3.11 Documents and Samples at the Site

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

§ 3.12 Shop Drawings, Product Data, and Samples

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

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

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

§ 3.12.4 Shop Drawings, Product Data, Samples, and similar submittals are not Contract Documents. Their purpose is to demonstrate how the Contractor proposes to conform to the information given and the design concept expressed in the Contract Documents for those portions of the Work for which the Contract Documents require submittals. Review by the Architect and Construction Manager is subject to the limitations of Sections 4.2.10 through 4.2.12.

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Informational submittals upon which the Construction Manager and Architect are not expected to take responsive action may be so identified in the Contract Documents. Submittals that are not required by the Contract Documents may be returned by the Construction Manager or Architect without action.

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

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

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

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

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

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

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

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

§ 3.12.10.3 By approving and submitting Shop Drawings, Product Data, Samples and similar submittals, the Contractor represents that the Contractor has determined and verified materials, field measurements and field construction criteria related thereto, or will do so, and has checked and coordinated the information contained within such submittals with the requirements of the Work and of the Contract Documents.

§ 3.12.12 Substitutions – All substitutions or deviations must be clearly noted on shop drawings. The Contractor is responsible for coordinating and covering any additional requirements, including change orders and extra work by other trades. Substitution requests must be submitted with 30 days of Notice to Proceed and should include a credit change order.

§ 3.13 Use of Site

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

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

§**3.13.3** The Contractor shall send proper notices, make all necessary arrangements and perform all other services required in order to protect and maintain all marked, identified or known public utilities such a fire lines and plugs, electric, gas, water lines, sewer pipes, mechanical systems and all other items of this nature, and assume all responsibility and pay all costs for which the Owner may be liable if said services are interrupted by actions of the Contractor or Subcontractors . The Contractor acknowledges that all public utilities or other infrastructure may not be identified or marked, and Contractor acknowledges that all public utilities or other infrastructure may not be identified or marked and that Contractor has taken all reasonable precautions to identify all known and unknown utilities or other infrastructure. Only materials and equipment needed for the Work may be stored on site and must be removed when no longer needed. The Contractor is solely responsible for protecting stored items. No signs may be posted without Owner and Construction Manager approval. The Contractor must maintain safe access, keep adjacent areas clear of debris, and minimize disruption. Workers may use only designated facilities and must follow all Owner rules, insurance, and labor agreements. Any issues complying must be reported in writing with alternatives for Owner review.

§ 3.14 Cutting and Patching

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

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

§ 3.15 Cleaning Up

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

§ 3.15.2 If the Contractor fails to clean up as provided in the Contract Documents, the Owner, or Construction Manager with the Owner's approval, may do so and the Owner shall be entitled to reimbursement from the Contractor.

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§ 3.16 Access to Work

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

§3.16.1 The Contractor shall keep only necessary equipment on-site and shall cooperate with the Construction Manager regarding the location of stored material. No Contractor shall unreasonably encumber the Project site (or building) with equipment and stored material, and they shall afford other contractors a reasonable opportunity for the introduction and storage of their materials and the execution of other work.

§ 3.17 Royalties, Patents and Copyrights

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

§ 3.18 Indemnification

§ 3.18.1 To the fullest extent permitted by law, the Contractor shall indemnify and hold harmless the Owner, Construction Manager, Architect, Construction Manager's and Architect's consultants, and agents and employees of any of them from and against claims, damages, losses, and 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), to the extent caused by the actual or alleged 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. The Contractor shall prevent any mechanics or other liens against the Project. If a lien is filed or served, the Contractor must have it discharged within 20 days or, if contesting in good faith, provide security to prevent foreclosure. The Owner may withhold payments sufficient to protect against the lien.

§3.18.3 The Contractor's indemnity obligations under this Section 3.18 shall also specifically include, without limitation, all fines, penalties, damages, liability, costs, expenses (including, without limitation, reasonable attorneys' fees) and punitive damages (if any) arising out of, or in connection with, and (i) violation of or failure to comply with any law, statute, ordinance, rules, regulations, code or requirement of a public authority that bears upon the performance of the Work by the Contractor, a Subcontractors or any person or entity for whom either is responsible, (ii) means, methods procedures, techniques or sequences of execution or performance of the Work, and (iii) failure to secure and pay for permits, fees, approvals, licenses and inspections as required under the Contract Documents, or any violation of any permit or other approval of a public authority applicable to the Work by the Contractor, Subcontractors or any person or entity for whom either is responsible.

§3.18.4 The Contractor has determined what local ordinances, if any, will accent his work. The Contractor has checked for any County, City, Borough, or Township rules or regulations applicable to the area in which the Project is being constructed and in addition, for any rules or regulations of other organizations having jurisdiction, such as chambers-of-commerce, planning commission, industries, or utility companies who have jurisdiction over property on which the Work will be performed. Any costs of compliance with local controls are included in the prices bid, even if documents of such local controlling agencies are not listed specifically in the Contract Documents.

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§3.18.5 If the Contractor makes any significant changes to the form, type, system, or details from the Drawings — due to approval of substitute equipment or otherwise —they shall pay all related costs, including architectural and engineering review fees. All changes require prior written approval from the Architect. The Contractor must reimburse the Owner for site visit or redesign costs caused by the Contractor's fault or deficiencies.

ARTICLE 4 ARCHITECT AND CONSTRUCTION MANAGER

§ 4.1 General

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

§ 4.1.2 The Construction Manager is the person or entity retained by the Owner pursuant to Section 2.3.3 and identified as such in the Agreement.

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

§ 4.2 Administration of the Contract

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

§ 4.2.2 The Architect will visit the site at intervals appropriate to the stage of construction, or as otherwise agreed with the Owner, to become reasonably informed with the progress and quality of the portion of the Work completed, and to determine in general if the Work observed is being performed in a manner indicating that the Work, when fully completed, will be in accordance with the Contract Documents. However, the Architect will not be required to make exhaustive or continuous on-site inspections to check the quality or quantity of the Work. On the basis of the site visits, the Architect will keep the Owner and the Construction Manager reasonably informed about the progress and quality of the portion of the Work completed, and promptly report to the Owner and Construction Manager known deviations from the Contract Documents and defects and deficiencies observed in the Work.

§ 4.2.3 The Construction Manager shall provide one or more representatives who shall be in attendance at the Project site whenever the Work is being performed. The Construction Manager will determine in general if the Work observed is being performed in accordance with the Contract Documents, will keep the Owner and Architect reasonably informed of the progress of the Work, and will promptly report to the Owner and Architect known deviations from the Contract Documents and the most recent Project schedule, and defects and deficiencies observed in the Work.

§ 4.2.4 The Construction Manager will schedule and coordinate the activities of the Contractor and other Contractors in accordance with the latest approved Project schedule to maintain all completion dates. Adherence to provided direction is required.

§ 4.2.5 The Construction Manager, except to the extent required by Section 4.2.4, and Architect will not have control over, charge of, or responsibility for, the construction means, methods, techniques, sequences or procedures, or for the safety precautions and programs in connection with the Work, since these are solely the Contractor's rights and responsibilities under the Contract Documents, and neither will be responsible for the Contractor's failure to perform the Work in accordance with the requirements of the Contract Documents. Neither the Construction Manager nor the Architect will have control over or charge of, or be responsible for acts or omissions of, the Contractor, Subcontractors, or their agents or employees, or of any other persons or entities performing portions of the Work. No claims by any Contractor for delay or cost will be entertained if the Owner determines that said Contractor and their Subcontractors have been uncooperative with the Construction Manager.

§ 4.2.6 Communications. Except as otherwise provided in the Contract Documents or when direct communications have been specially authorized, the Owner shall communicate with the Contractor and the Construction Manager's consultants through the Construction Manager about matters arising out of or relating to the Contract Documents. The Owner and Construction Manager shall include the Architect in all communications that relate to or affect the

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

§ 4.2.7 The Construction Manager and Architect will review and certify all Applications for Payment by the Contractor, in accordance with the provisions of Article 9.

§ 4.2.8 The Architect and Construction Manager have authority to reject Work that does not conform to the Contract Documents, and will notify each other about the rejection. Whenever the Construction Manager considers it necessary or advisable, the Construction Manager will have authority to require inspection or testing of the Work in accordance with Sections 13.4.2 and 13.4.3, upon written authorization of the Owner, whether or not the Work is fabricated, installed or completed. The foregoing authority of the Construction Manager will be subject to the provisions of Sections 4.2.18 through 4.2.20 inclusive, with respect to interpretations and decisions of the Architect. However, neither the Architect's nor the Construction Manager's authority to act under this Section 4.2.8 nor a decision made by either of them in good faith either to exercise or not to exercise such authority shall give rise to a duty or responsibility of the Architect or the Construction Manager to the Contractor, Subcontractors, suppliers, their agents or employees, or other persons performing any of the Work.

§ 4.2.9 Utilizing the submittal schedule provided by the Contractor, the Construction Manager shall prepare, and revise as necessary, a Project submittal schedule incorporating information from other Contractors, the Owner, Owner's consultants, Owner's Separate Contractors and vendors, governmental agencies, and participants in the Project under the management of the Construction Manager. The Project submittal schedule and any revisions shall be submitted to the Architect for approval.

§ 4.2.10 The Construction Manager will receive and promptly review for conformance with the submittal requirements of the Contract Documents, all submittals from the Contractor such as Shop Drawings, Product Data, and Samples. Where there are other Contractors, the Construction Manager will also check and coordinate the information contained within each submittal received from the Contractor and other Contractors, and transmit to the Architect those recommended for approval. By submitting Shop Drawings, Product Data, Samples, and similar submittals, the Construction Manager represents to the Owner and Architect that the Construction Manager has reviewed and recommended them for approval. The Construction Manager's actions will be taken in accordance with the Project submittal schedule approved by the Architect or, in the absence of an approved Project submittal schedule, with reasonable promptness while allowing sufficient time to permit adequate review by the Architect.

§ 4.2.11 The Architect will review and approve, or take other appropriate action upon, the Contractor's submittals such as Shop Drawings, Product Data, and Samples, but only for the limited purpose of checking for conformance with information given and the design concept expressed in the Contract Documents. The Architect's action will be taken in accordance with the submittal schedule approved by the Architect or, in the absence of an approved submittal schedule, with reasonable promptness while allowing sufficient time in the Architect's professional judgment to permit adequate review. Upon the Architect's completed review, the Architect shall transmit its submittal review to the Construction Manager.

§ 4.2.12 Review of the Contractor's submittals by the Construction Manager and Architect is not conducted for the purpose of determining the accuracy and completeness of other details such as dimensions and quantities, or for substantiating instructions for installation or performance of equipment or systems, all of which remain the responsibility of the Contractor as required by the Contract Documents. The Construction Manager and Architect's review of the Contractor's submittals shall not relieve the Contractor of the obligations under Sections 3.3, 3.5, and 3.12. The Construction Manager and Architect's review shall not constitute approval of safety precautions or of any construction means, methods, techniques, sequences, or procedures. The Architect's approval of a specific item shall not indicate approval of an assembly of which the item is a component.

§ 4.2.13 The Construction Manager will prepare Change Orders and Construction Change Directives.

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§ 4.2.14 The Construction Manager and the Architect will take appropriate action on Change Orders or Construction Change Directives in accordance with Article 7, and the Architect will have authority to order minor changes in the Work as provided in Section 7.4. The Architect, in consultation with the Construction Manager, will investigate and make determinations and recommendations regarding concealed and unknown conditions as provided in Section 3.7.4.

§ 4.2.15 Utilizing the documents provided by the Contractor, the Construction Manager will maintain at the site for the Owner one copy of all Contract Documents, approved Shop Drawings, Product Data, Samples, and similar required submittals, in good order and marked currently to record all changes and selections made during construction. These will be available to the Architect and the Contractor, and will be delivered to the Owner upon completion of the Project.

§ 4.2.16 The Construction Manager will assist the Architect in conducting inspections to determine the date or dates of Substantial Completion and the date of final completion; issue Certificates of Substantial Completion in conjunction with the Architect pursuant to Section 9.8; and receive and forward to the Owner written warranties and related documents required by the Contract and assembled by the Contractor pursuant to Section 9.10. The Construction Manager will forward to the Architect a final Application and Certificate for Payment or final Project Application and Project Certificate for Payment upon the Contractor's compliance with the requirements of the Contract Documents.

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

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

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

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

§ 4.2.21 The Construction Manager will receive and review requests for information from the Contractor, and forward each request for information to the Architect, with the Construction Manager's recommendation. The Architect will review and respond in writing, through the Construction Manager, to requests for information about the Contract Documents. The Construction Manager's recommendation and the Architect's response to each request will be made in writing within any time limits agreed upon or otherwise with reasonable promptness. If appropriate, the Architect will prepare and issue supplemental Drawings and Specifications in response to the requests for information.

§ 4.2.22 The Architect has final say on material or equipment substitutions and may waive specifications, accept superior alternatives, or require specified products. The Contractor must submit credit proposals and may be responsible for review costs. Approval does not relieve the Contractor of responsibility for the work, guarantees, or necessary related modifications.

ARTICLE 5 SUBCONTRACTORS

§ 5.1 Definitions

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

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

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

§ 5.2.1 Unless otherwise stated in the Contract Documents, the Contractor, within 15 days after award of the Contract, shall notify the Construction Manager, for review by the Owner, Construction Manager and Architect, of the persons or entities proposed for each principal portion of the Work, including those who are to furnish materials or equipment fabricated to a special design. Within 14 days of receipt of the information, the Construction Manager may notify the Contractor whether the Owner, the Construction Manager or the Architect (1) has reasonable objection to any such proposed person or entity or, (2) requires additional time for review. Failure of the Construction Manager to provide notice within the 14-day period shall constitute notice of no reasonable objection.

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

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

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

§ 5.3 Subcontractual Relations

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

§ 5.4 Contingent Assignment of Subcontracts

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

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

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

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§ 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.

§ 5.4.4 When the Contractor sublets any Work, full responsibility for dividing, managing, coordinating, and inspecting the Work remains with the Contractor. The Owner and Architect are not responsible for disputes between the Contractor and Subcontractors; the Contractor must resolve any such issues affecting the project's progress, quality, or completion at no cost to the Owner.

ARTICLE 6 CONSTRUCTION BY OWNER OR BY SEPARATE CONTRACTORS

§ 6.1 Owner's Right to Perform Construction with Own Forces and to Award Other Contracts

§ 6.1.1 The Owner reserves the right to perform construction or operations related to the Project with the Owner's own forces, and with Separate Contractors retained under Conditions of the Contract substantially similar to those of this Contract, including those provisions of the Conditions of the Contract related to insurance and waiver of subrogation.

§ 6.1.2 When the Owner performs construction or operations with the Owner's own forces or Separate Contractors, the Owner shall provide for coordination of such forces and Separate Contractors with the Work of the Contractor, who shall cooperate with them. Owner or separate contractor actions alone don't justify delay or cost claims. Extensions or costs apply only if delays result from: (1) Owner's bad faith, willful misconduct, or fundamental breach (documented and timely); (2) unforeseen, unmitigable delays by separate contractors; or (3) delays indicating Owner's intentional contract abandonment. Minor or typical construction delays don't qualify.

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

§ 6.2 Mutual Responsibility

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

§ 6.2.2 If part of the Contractor's Work depends for proper execution or results upon construction or operations by the Owner's own forces, Separate Contractors or other Contractors, the Contractor shall, prior to proceeding with that portion of the Work, promptly notify the Construction Manager and Architect of apparent discrepancies or defects in the construction or operations by the Owner or Separate Contractor or other Contractors that would render it unsuitable for proper execution and results of the Contractor's Work. Failure of the Contractor to notify the Construction Manager and the Architect of apparent discrepancies or defects prior to proceeding with the Work shall constitute an acknowledgment that the Owner's or Separate Contractor's or other Contractors' completed or partially completed construction is fit and proper to receive the Contractor's Work, except as to defects not then reasonably discoverable. If the Contractor incurs cost or damage due to the failure of another Separate Contractor(s) to perform their contract with the Owner, no action can be taken against the Owner. The Owner bears no liability for such damages. Instead, the Contractor may assert its claim for damages against the Separate Contractor responsible as a third-party beneficiary under the Contract between the other Contractor and the Owner.

§ 6.2.3 Costs from delays, mis-timed work, or defects are the sole responsibility of those at fault. The Owner, Construction Manager, and Architect are not liable for any contractor claims or damages from delays. The only remedy for delay against the Owner is an extension of time to complete the work.

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

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

§ 6.3 Owner's Right to Clean Up

If a dispute arises among the Contractor, Separate Contractors, other Contractors, and the Owner as to the responsibility under their respective contracts for maintaining the premises and surrounding area free from waste materials and rubbish, or if the Contractor refuses to clean up debris, the Owner may, after 24 hours written notice, clean up. The Construction Manager, with notice to the Architect, will allocate the cost among those responsible as the Owner determines to be just.

ARTICLE 7 CHANGES IN THE WORK

§ 7.1 General

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

§7.1.1.1 When submitting its change proposal, the Contractor shall include and set forth in clear and precise detail breakdowns of labor and materials for all trades involved and the estimated impact on the construction schedule, based upon an impact analysis of the current schedule. The Contractor shall furnish spreadsheets from which the breakdowns were prepared, plus spreadsheets, if requested, of any Subcontractor. Agreement on a Change Order fully settles all related costs and schedule adjustments. No compensation is allowed for work or delays outside the Change Order, and the Contractor is not entitled to lost profits, consequential, or incidental damages.

§ 7.1.2 A Change Order shall be based upon agreement among the Owner, Construction Manager, Architect and Contractor. A Construction Change Directive requires agreement by the Owner, Construction Manager and Architect and may or may not be agreed to by the Contractor, however, the Contractor is obligated to perform and shall in no case refuse to perform. 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

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

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

§ 7.3 Construction Change Directives

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

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

§ 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.

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

.1 Costs of labor, including applicable payroll taxes, fringe benefits required by agreement or custom, workers' compensation insurance, and other employee costs approved by the Construction Manager and Architect;

.2 Costs of materials, supplies, and equipment, including cost of transportation, whether incorporated or consumed;

.3 Rental costs of machinery and equipment, exclusive of hand tools, whether rented from the Contractor or others; and

.4 Costs of supervision and field office personnel directly attributable to the change, provided there's documented evidence of hours and tasks. Claims require prior written approval and detailed supporting documentation, subject to the Architect's review..

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

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

§ 7.3.7 A Construction Change Directive signed by the Contractor indicates the Contractor's agreement therewith, including adjustment in Contract Sum and Contract Time or the method for determining them. Such agreement shall be effective immediately and shall be 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 Construction Manager and Architect. When both additions and credits covering related Work or substitutions are involved in a change, the allowance for overhead and profit shall be figured on the basis of net increase, if any, with respect to that change.

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

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

§ 7.3.11 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. The increased contract unit price shall not apply to quantities scheduled under the contract for delivery before the effective date of the increased contract unit price, unless failure to deliver before that date results from causes reasonably beyond the Contractor's control and without his or her fault or negligence.

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§ 7.4 Minor Changes in the Work

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

ARTICLE 8 TIME

§ 8.1 Definitions

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

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

§ 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 of twenty-four (24) hours, beginning at 12:00 midnight, unless otherwise specifically defined. The term "working day" (or "business day") shall mean any calendar day except Saturdays, Sundays and legal holidays at the place of the Project. A time limit ending on a weekend or holiday shall be automatically extended to the succeeding working day.

§ 8.1.5 The Contract Time shall commence as of the date of the Notice to Proceed unless otherwise specified in the Agreement. However, the Work to be performed under this Contract shall not commence until the required insurance has been obtained or approved. The date shall not be postponed by the failure to act by the Contractor or of persons or entities for whom the Contractor is responsible.

§ 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. The date of commencement of the Work shall not be changed by the effective date of such insurance.

§ 8.2.3 The Contractor shall proceed expeditiously with adequate forces and shall achieve Substantial Completion within the Contract Time. If the Contractor reasonably anticipates, or reasonably should anticipate the potential impact of a delay on the progress of the Work, or if the Work has not progressed to the extent required to maintain the Project Construction Schedule for reasons unrelated to Contractor's entitlement to any extension of the Contract Time under the Contract Documents, and it is reasonably unlikely that the Work will be Substantially Complete by the required date, then the Construction Manager and/or the Owner shall have the right to order Contractor to increase manpower, work hours, and equipment necessary to maintain the Project Construction Schedule ("Acceleration Measures"), and shall be without additional cost or charge to the Owner.

§8.2.4 The Construction Manager, in coordination with the Contractor, will set work hours. The Contractor will be required to work nights, weekends or holidays as necessary to complete the work in accordance with the Schedule. NOTE: Standard work hours for this project may be affected by local Noise Ordinance. The Contractor shall be responsible to adhere to the Noise Ordinance, including night, weekend and holiday work. All utility shut downs, interruptions and work in or adjacent to an existing building will be coordinated through the Construction Manager and may have to be performed during hours when the facility is not in operation. All costs associated with this Article 8.2.4 are the responsibility of the Contractor and shall not be considered additional costs to the Owner.

§ 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) a deliberate, willful and malicious act or gross neglect of the Owner, Architect, Construction Manager; (2) by material changes ordered in the Work; (3) by fire, unavoidable casualties, adverse weather conditions documented in accordance with

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Section 15.1.6.2, or other causes beyond the Contractor's reasonable control not due to its fault or negligence, and which could have been prevented or avoided by the affected Party through the exercise of reasonable due diligence; (4) by delay authorized by the Owner pending mediation and binding dispute resolution; or (5) by other causes that the Contractor asserts and the Architect, based on the recommendation of the Construction Manager, determines justify delay, then the Contract Time shall be extended for such reasonable time as the Architect may determine. Claims against the Owner for delay costs by another Prime Contractor are subject to Section 8.3.3.

§8.3.1.1 Where the cause of delay is due to the weather conditions, extension of time shall be granted only for unusually severe weather, as determined by reference to historical data. The term "historical data" as used in the preceding sentence shall be construed according to this formula: Average rainfall (or snow, or extreme low temperature) for the past five (5) years for the month in question, plus twenty (20) percent. In other words, weather is not deemed to be unusually severe unless it is twenty (20) percent worse that the average for that month over the last five (5) years.

§ 8.3.2 Claims relating to time shall be made in accordance with applicable provisions of Article 15. An extension of time will only be granted if delays affect the Contract Completion Date. Incidental delays that use float do not qualify. The Construction Manager may require a time impact analysis to validate and extension.

§ 8.3.3 No payment or allowance of any kind or extension of time shall be made to the Contractor as compensation for damages on account of hindrance or delay from any cause in the progress of the Work, when the Architect determines the delay to be: (i) avoidable, (ii) caused by the Contractor's negligence or intentional misconduct in whole or in part, (iii) attributed to the Contractor's fault (in whole or in part) for the delay, including but limited to any delay attributable to lack of coordination or cooperation by or between the Contractor and his Subcontractors; (iv) caused by Owner unless based on a sustainable and valid claim of Owner negligence or intentional act; or (v) the result of any reason contemplated by the parties at the time of execution of this Agreement. The Contractor's only remedy for approved delays is a time extension per Section 8.3, equal to the delay period. The Owner and Architect are not liable for any losses or increased costs due to such delays. If the Contractor sues the Owner or Architect over delay costs and does not substantially prevail, the Contractor must reimburse their legal and related fees.

§ 8.3.4 The Contractor shall not be entitled to make a claim for delay (regardless of the cause of the delay) unless within two (2) business days after the beginning of such delay or delays, the Contractor files a written request providing notification of the delay (including specific explanation as to the cause) with the Architect, Construction Manager and Owner. In case of a continuing cause of delay, only one request is necessary.

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.

§ 9.2 Schedule of Values

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

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§ 9.3 Applications for Payment

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

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

§ 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. Where the Contract Documents permit payment for materials stored off the Project site, the Contractor shall procure insurance covering the full value of the material and, in addition to the other requisites of the Contract Documents, shall make any other provisions necessary to ensure and protect Owner's title and right of possession and access to such materials. 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 reasonably-incurred 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 and stored materials 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, be free and clear of liens, claims, security interests, or encumbrances whatsoever, that the vesting of such title shall not impose any obligation on Owner or relieve the Contractor of any of its obligations under the Contract, that the Contractor remains responsible for damages or loss to the Work until the Owner accepts responsibility per the Contract Documents, and no Work covered by a Payment Application is subject to any seller's retained interest or encumbrance.

§ 9.4 Certificates for Payment

§ 9.4.1 Where there is only one Contractor, the Construction Manager will, within seven (7) days after the Construction Manager's receipt of the Contractor's Application for Payment, review the Application, certify the amount the Construction Manager determines is due the Contractor, and forward the Contractor's Application and Certificate for Payment to the Architect. Within seven (7) days after the Architect receives the Contractor's Application for Payment from the Construction Manager, the Architect will either issue to the Owner a Certificate for Payment for such amount as the Architect determines is properly due, or notify the Construction Manager and Owner of the Architect's reasons for withholding certification in whole or in part as provided in Section 9.5.1. The Construction Manager will promptly forward to the Contractor the Architect's notice of withholding certification.

§ 9.4.2 Where there is more than one Contractor performing portions of the Project, the Construction Manager will, within seven (7) days after the Construction Manager receives all of the Contractors' Applications for Payment: (1) review the Applications and certify the amount the Construction Manager determines is due each of the Contractors; (2) prepare a Summary of Contractors' Applications for Payment by combining information from each Contractor's application with information from similar applications for progress payments from the other Contractors; (3) prepare a Project Application and Certificate for Payment; (4) certify the amount the Construction Manager determines is due all Contractors; and (5) forward the Summary of Contractors' Applications for Payment and Project Application and Certificate for Payment to the Architect.

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§ 9.4.2.1 Within seven (7) days after the Architect receives the Project Application and Project Certificate for Payment and the Summary of Contractors' Applications for Payment from the Construction Manager, the Architect will either issue to the Owner a Project Certificate for Payment for such amount as the Architect determines is properly due, or notify the Construction Manager and Owner of the Architect's reasons for withholding certification in whole or in part as provided in Section 9.5.1. The Construction Manager will promptly forward the Architect's notice of withholding certification to the Contractors.

§ 9.4.3 The Construction Manager's certification of an Application for Payment or, in the case of more than one Contractor, a Project Application and Certificate for Payment, shall be based upon the Construction Manager's evaluation of the Work and the data in the Application or Applications for Payment. The Construction Manager's certification will constitute a representation that, to the best of the Construction Manager's knowledge, information, and belief, the Work has progressed to the point indicated, the quality of the Work is in accordance with the Contract Documents, and that the Contractor is, or Contractors are, entitled to payment in the amount certified.

§ 9.4.4 The Architect's issuance of a Certificate for Payment or, in the case of more than one Contractor, Project Application and Certificate for Payment, shall be based upon the Architect's evaluation of the Work, the recommendation of the Construction Manager, and data in the Application for Payment or Project Application for Payment. The Architect's certification will constitute a representation that, to the best of the Architect's knowledge, information, and belief, the Work has progressed to the point indicated, the quality of the Work is in accordance with the Contract Documents, and that the Contractor is, or Contractors are, entitled to payment in the amount certified. The foregoing representations are subject to an evaluation of the Work for conformance with the Contract Documents upon Substantial Completion, to the results of subsequent tests and inspections, to the correction of minor deviations from the Contract Documents prior to completion, and to specific qualifications expressed by the Architect and Owner.

9.4.5 The ' sentations made pursuant to Sections 9.4.3 and 9.4.4 are subject to an evaluation of the Work for onformance with the Contract Documents upon Substantial Completion, to results of subsequent tests and nspections, to correction of minor deviations from the Contract Documents prior to completion, and to specific qualifications expressed by the Construction Manager or Architect.

§ 9.4.6 The issuance of a Certificate for Payment or a Project Certificate for Payment will not be a representation that the Construction Manager or Architect has (1) made exhaustive or continuous on-site inspections to check the quality or quantity of the Work; (2) reviewed construction means, methods, techniques, sequences, or procedures; (3) reviewed copies of requisitions received from Subcontractors and suppliers and other data requested by the Owner to substantiate the Contractor's right to payment; or (4) made examination to ascertain how or for what purpose the Contractor has used money previously paid on account of the Contract Sum. The Owner retains all rights to verify and challenge any payment or work quality discrepancies despite the issuance of such certificates.

§ 9.5 Decisions to Withhold Certification

§ 9.5.1 The Construction Manager or Architect may withhold a Certificate for Payment or Project Certificate for Payment in whole or in part, to the extent reasonably necessary to protect the Owner, if in the Construction Manager's or Architect's opinion the representations to the Owner required by Section 9.4.3 and 9.4.4 cannot be made. If the Construction Manager or Architect is unable to certify payment in the amount of the Application, the Construction Manager will notify the Contractor and Owner as provided in Section 9.4.1 and 9.4.2. If the Contractor, Construction Manager and Architect cannot agree on a revised amount, the Architect will promptly issue a Certificate for Payment or a Project Certificate for Payment for the amount for which the Architect is able to make such representations to the Owner. The Construction Manager or Architect may also withhold a Certificate for Payment or, because of subsequently discovered evidence, may nullify the whole or a part of a Certificate for Payment or Project Certificate for Payment previously issued, to such extent as may be necessary in the Construction Manager's or Architect's opinion to protect the Owner from loss for which the Contractor is responsible, including loss resulting from the acts and omissions described in Section 3.3.2 because of

- **.1** defective Work not remedied;
- **.2** third party claims filed or reasonable evidence indicating probable filing of such claims, unless security acceptable to the Owner is provided by the Contractor;
- **.3** failure of the Contractor to make payments properly to Subcontractors or suppliers for labor, materials or equipment;
- **.4** reasonably avoidable delays or reasonable evidence that the Work cannot be completed for the unpaid balance of the Contract Sum;

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.5 damage to the Owner or a Separate Contractor or other Contractor;
.6 reasonable evidence that the Work will not be completed within the Contract Time, and that the unpaid balance would not be adequate to cover actual or liquidated damages for the anticipated delay; or
.7 repeated failure to carry out the Work in accordance with the Contract Documents.
.8 failure to maintain the site in a safe and satisfactory manner in accordance with construction practices as determined by the Owner or Architect;
.9 any labor strike or labor disruption whatsoever which impacts the progress of the Work;
.10 claims made or likely to be made against the Owner or its property;
.11 loss caused by the Contractor or its Subcontractors;
.12 failure of the Contractor to correctly and accurately represent the Work performed in a payment request;
.13 the Contractor's failure to use funds previously paid to the Contractor to pay Project-related obligations;
.14 failure to update the Schedule(s);
.15 failure to maintain Record Drawings;
.16 deliberate delay in the submission for approval of names of Subcontractors, materialmen, sources of supply, product date, shop drawings and samples; or
.17 otherwise failure to comply with the requirements of 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. If the Contractor disputes any determination of the Architect with respect to any Applications for Payment, the Contractor shall nevertheless continue to diligently prosecute the Work. In no event shall the General Contractor stop Work, except pursuant to Paragraph 9.7 hereof.
§ 9.5.3 When the above reasons for withholding certification are removed, certification will be made for amounts previously withheld. The Owner shall not be deemed in default of the Contract by reason of withholding payment while any of the above grounds remain uncured.

§ 9.5.4 If the Architect or Construction Manager withholds certification for payment under Section 9.5.1, the Owner may, at its sole option, issue joint checks to the Contractor and to any Subcontractor or supplier to whom the Contractor failed to make payment for Work properly performed or material or equipment suitably delivered. If the Owner makes payments by joint check, the Owner shall notify the Architect and the Construction Manager, and both will reflect such payment on the next Certificate for Payment.

§ 9.6 Progress Payments
§ 9.6.1 After the Architect has issued a Certificate for Payment or Project Certificate for Payment, the Owner shall make payment in the manner and within the time provided in the Contract Documents, and shall so notify the Construction Manager and Architect.

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

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

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

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

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§ 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 Provided the Owner has met its payment obligations, the Contractor shall indemnify and defend the Owner against any loss, liability, or expense, including attorney's fees, from lien claims or payment claims by any Subcontractor or supplier. Upon notice of such a claim, the Owner will notify the Contractor. With court approval when required, the Contractor may substitute a surety bond for the property subject to the claim.

§ 9.7 Failure of Payment

If the Construction Manager and Architect do not issue an approved Certificate for Payment or a Project Certificate for Payment, through no fault of the Contractor, within fourteen days after the Construction Manager's receipt of the Contractor's Application for Payment, or if the Owner does not, for reasons other than a default of the Contract, including but not limited to those defaults set forth elsewhere in this Contract, pay the Contractor the certified and approved amount within 14 days after the date established in the Contract Documents, the amount certified by the Construction Manager and Architect or awarded by binding dispute resolution, then the Contractor may, upon seven additional days' notice to the Owner, Construction Manager and Architect, stop the Work until payment of the amount owing has been received. The Contract Time shall be extended appropriately and the Contract Sum shall be increased by the amount of the Contractor's reasonable costs of shutdown, delay and start-up, plus interest as provided for in the Contract Documents.

§9.7.1 If the Owner is entitled to reimbursement or payment from the Contractor pursuant to the Contract Documents, such payment shall be made promptly upon demand by the Owner. Notwithstanding anything contained in the Contract Documents to the contrary, if the Contractor fails to promptly make any payment due the Owner, or if the Owner incurs any costs and expenses to cure any default of the Contractor, including costs paid to other Contractors as a result of the Contractor's performance, or to correct defective Work, the Owner shall have an absolute right to offset such amount against the Contract Sum and may, in the Owner's sole discretion, elect either to (i) deduct an amount equal to that which the Owner is entitled from any payment then or thereafter due the Contractor from Owner, or (ii) issue a written notice to the Contractor reducing the Contract Sum by an amount equal to that which the Owner is entitled.

§ 9.8 Substantial Completion

§ 9.8.1 Substantial Completion is the stage in the progress of the Work when the Work or designated portion thereof is sufficiently complete in accordance with the Contract Documents so the Owner can occupy or utilize the Work for its intended use; provided, however, that as a condition precedent to Substantial Completion, the Contractor shall deliver to the Architect, with a copy to the Owner, all final and unconditional certificates of occupancy and any other permits or approvals necessary for Owner to occupy the entire Project or designate portions thereof.

§9.8.1.1 Substantial Completion shall not be achieved prior to the issuance of the Certificate of Occupancy issued by the state or local authority having jurisdiction.

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

.1 No later than (10) ten calendar days prior to date scheduled for Substantial Completion the Construction Manager and/or Owner may add additional items requiring completion or correction.

.2 The Contractor shall immediately proceed with the Work required by the Punchlist and shall complete and correct items on or added thereto by the date scheduled for Substantial Completion.

.3 When the Contractor determines that the Work has reached Substantial Completion, or when the Owner or Construction Manager so determines and directs the Contractor to do so, the Contractor shall request the Construction Manager's final inspection to determine Substantial Completion. The Contractor shall prepare and submit to the Architect and Owner its final Application for Payment submitted in compliance with the requirements of the Contract Documents and shall thoroughly reinspect the Work. Additionally, the Contractor shall prepare and submit to the

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Architect and Owner a comprehensive final Punchlist of any and all items remaining to be completed or corrected (whether or not included on any previous Punchlists).

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

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

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

§9.8.6 The Architect's Certificate of Substantial Completion shall be subject to the Owner's final approval.

§ 9.8.7 In no case shall the time established for the completion and correction of items on the list extend beyond thirty (30) days after Certification of Substantial Completion, except for delay beyond the Contractor's reasonable control. The Contractor shall pay for all architectural and consultant services incurred thereafter due to the failure of Contractor to complete and / or correct the Work on the list or to submit documentation and items required for final completion and final payment. Payment for additional architectural and consultant services shall be deducted from the Contract amount.

§ 9.9 Partial Occupancy or Use

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

§ 9.9.2 Immediately prior to such partial occupancy or use, the Owner, Construction Manager, Contractor, and Architect shall jointly inspect the area to be occupied or portion of the Work to be used 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 completion of the Work, the Contractor shall forward to the Construction Manager a notice that the Work is ready for final inspection and acceptance, and shall also forward to the Construction Manager a final Contractor's Application for Payment. Upon receipt, the Construction Manager shall perform an inspection to confirm

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the completion of Work of the Contractor. The Construction Manager shall make recommendations to the Architect when the Work of all of the Contractors is ready for final inspection, and shall then forward the Contractors' notices and Application for Payment or Project Application for Payment, to the Architect, who will promptly make such inspection. When the Architect finds the Work acceptable under the Contract Documents and the Contract fully performed, the Construction Manager and Architect will promptly issue a final Certificate for Payment or Project Certificate for Payment stating that to the best of their knowledge, information and belief, and on the basis of their on-site visits and inspections, the Work has been completed in accordance with the Contract Documents and that the entire balance found to be due the Contractor and noted in the final Certificate is due and payable. The Construction Manager's and Architect's final Certificate for Payment or Project Certificate for Payment will constitute a further representation that conditions listed in Section 9.10.2 as precedent to the Contractor's being entitled to final payment have been fulfilled. All warranties and guarantees required under or pursuant to the Contract Document shall be assembled and delivered by the Contractor to the Architect as part of the final Application for Payment. The final Certificate for Payment will not be issued by the Architect or Construction Manager until all warranties and guarantees have been received and approved by the Architect and Construction Manager.

§ 9.10.2 Neither final payment nor any remaining retained percentage shall become due until the Contractor submits to the Architect through the Construction Manager (1) an affidavit that payrolls, bills for materials and equipment, and other indebtedness connected with the Work for which the Owner or the Owner's property might be responsible or encumbered (less amounts withheld by Owner) have been paid or otherwise satisfied, (2) a certificate evidencing that insurance required by the Contract Documents to remain in force after final payment is currently in effect, (3) a written statement that the Contractor knows of no reason that the insurance will not be renewable to cover the period required by the Contract Documents, (4) consent of surety, if any, to final payment (5) documentation of any special warranties, such as manufacturers' warranties or specific Subcontractor warranties, and (6), if required by the Owner, other data establishing payment or satisfaction of obligations, such as receipts and releases and waivers of liens, claims, security interests, or encumbrances arising out of the Contract, to the extent and in such form as may be designated by the Owner. 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; and (7) evidence of compliance with all requirements of the Contract Documents: notices, certificates, affidavits, other requirements to complete obligations under the Contract Documents: including but not limited to (a) instruction of Owner's representatives in the operation of mechanical, electrical, plumbing and other systems, (b) delivery of keys to Owner with keying schedule: master, sub-master and special keys, (c) delivery to Architect of Contractor's General Warranty and each written warranty and assignment thereof prepared in duplicate, certificates of inspections, and bonds for Architect's review and delivery to Owner, (d) delivery to Architect a printed or typewritten operating, servicing, maintenance and cleaning instructions for all Work; parts lists and special tools for mechanical and electrical Work, in approval form, (e) delivery to the Architect of specified Project record documents and (f) delivery to Owner of a Final Waiver of Liens (AIA Document G-706 or other form satisfactory to Owner), covering all Work including that of all Subcontractors, vendors, labor, materials and services, executed by an authorized officer and duly notarized. In addition to the foregoing, all other submissions required by other articles and paragraphs of the Specifications including final construction schedule shall be submitted to the Architect before approval of final payment.

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

.1 If more than one inspection for Final Completion is required, the Contractor will be billed and responsible for the professional fees and services of the Architect.

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.2 Following Substantial Completion, in the event the Contractor or its subcontractor fails to complete the list of items of the Work instructed by the Architect to be corrected or completed within fourteen (14) days after the date of receipt of Certificate of Substantial Completion, the Owner may:

.1 exercise any available remedies to correct or complete deficient work or retain a third party of correct or complete such work at the cost of the defaulting Contractor; and

.2 retain and deduct from any payments or retention otherwise due to the defaulting Contractor fees and expenses for services required to be provided by the Architect more than twenty-one (21) days after the Date of Substantial completion.

§ 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. The Contractor shall submit the Contractor's safety program to the Construction Manager for review and coordination with the safety programs of other Contractors. The Construction Manager's responsibilities for review and coordination of safety programs shall not extend to direct control over or charge of the acts or omissions of the Contractors, Subcontractors, agents or employees of the Contractors or Subcontractors, or any other persons performing portions of the Work and not directly employed by the Construction Manager.

§10.1.1 The Contractor's attention is particularly directed to the governing agencies (State, Federal and Municipal, or other requirements) regarding reporting of accidents involving injury, loss of life and property damage.

§10.1.2 The Contractor will serve as the overall Project Safety Coordinator and shall be responsible for all issues of safety and protection. The Contractor, if applicable, shall also designate a safety person at the job site from notice to proceed to Contract completion. The designated safety person shall be responsible for the safety of their work and for their workers, and to make continuous inspections for all safety issues relating to his work. The Owner and their representatives, including but not limited to the Architect, the Construction Manager and the Owner's representative, are not responsible for safety on this project , but will endeavor to promote safety. The Contractor must comply with job Safety Requirements in addition to OSHA and local agency requirements. Failure to comply with safety issues will be ground for withholding of payments.

§ 10.1.3 The Contractor shall also insure that all of its Subcontractors follow its safety program and that this requirement is included in Contractor/Subcontractor Agreements. The Contractor should defend and indemnify Owner, Architect and Construction Manager for any damages or injuries arising for the failure of the Contractor to follow and/or enforce the safety program.

§ 10.2 Safety of Persons and Property

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

.1 employees on the Work and other persons who may be affected thereby;

.2 the Work and materials and equipment to be incorporated therein, whether in storage on or off the site, under care, custody, or control of the Contractor, a Subcontractor, or a Sub-subcontractor;

.3 other property at the site or adjacent thereto, such as trees, shrubs, lawns, walks, pavements, roadways, structures, and utilities not designated for removal, relocation, or replacement in the course of construction; and

.4 construction or operations by the Owner, Separate Contractors, or other Contractors.

.5 the general public

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

§ 10.2.3 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, consistent with applicable laws, statutes, ordinances, codes, rules and regulations and lawful orders of public authorities, and prevailing industry practice.

§ 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. In all cases, the Contractor shall give the Owner reasonable advance notice.

§ 10.2.5 The Contractor shall promptly remedy damage and loss (other than damage or loss insured under property insurance required by the Contract Documents) to property referred to in Sections 10.2.1.2, 10.2.1.3 and 10.2.1.4 caused in whole or in part by the Contractor, a Subcontractor, a Sub-subcontractor, or anyone directly or indirectly employed by any of them, or by anyone for whose acts they may be liable and for which the Contractor is responsible under Sections 10.2.1.2, 10.2.1.3 and 10.2.1.4. The Contractor may make a Claim for the cost to remedy the damage or loss to the extent such damage or loss is attributable to acts or omissions of the Owner, Construction Manager or Architect or anyone directly or indirectly employed by any of them, or by anyone for whose acts any of them may be liable, and not attributable to the fault or negligence of the Contractor. The foregoing obligations of the Contractor are in addition to the Contractor's obligations under Section 3.18.

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

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

§ 10.2.8 Injury or Damage to Person or Property

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. The Contractor shall provide and maintain adequate fire protection equipment, comply with reasonable recommendations from the fire insurer or local fire authorities, keep the site orderly, and promptly remove combustible rubbish.

§ 10.2.9 The Contractor shall protect excavations, trenches, buildings, and materials from water of any kind and promptly remove any accumulation, providing and operating all necessary pumps, piping, and equipment.

§ 10.2.10 The Contractor shall remove snow or ice which may result in damage, delay or hazardous conditions.

§ 10.2.11 The Contractor shall take all necessary precautions to prevent loss or damage to Owner's property on the Project within areas accessible to the Contractor. The Contractor is fully responsible for the security of such property and shall reimburse the Owner for any loss, damage, or injury, including the Owner's Builder's Risk deductible, except when caused directly by the Owner's agents or employees.

§ 10.3 Hazardous Materials

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

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condition, immediately stop Work in the affected area and notify the Owner, Construction Manager and Architect of the condition. The Contractor is responsible for preventing mold in construction areas and must use dehumidification or other temporary heating, cooling, or ventilation as needed. If mold develops, the Contractor bears full responsibility and cost for remediation.

§ 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. When the material or substance has been rendered harmless, Work in the affected area shall resume upon written directive of the Owner. 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. The Contract Time shall be extended as appropriate, but the Contractor shall not be entitled to compensation or damages for any delay.

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

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

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

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

§ 10.4 Emergencies

In an emergency affecting safety of persons or property, the Contractor shall act, at the Contractor's reasonable discretion, necessary 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, Construction Manager and Construction Manager's consultants, and the Architect and Architect's consultants, shall be named as additional insureds under the Contractor's commercial general liability policy or as otherwise described in the Contract Documents. The coverage afforded under any insurance obtained pursuant to this paragraph shall be primary and non-contributory. Coverages should be written on an occurrence basis, and shall be maintained without interruption from the date of commencement of the Work until the date of final payment and termination of any coverage required to be maintained after final payment, and, with respect to the Contractor's completed operations coverage, until the expiration of the period for correction. The Contractor shall indemnify, defend and hold harmless all parties or persons described in Section 3.18 from any and all claims for which the required insurance would have provided coverage. This indemnity obligation is in addition to any other indemnity obligation provided in the Contract.

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

§ 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 directly to the Owner, and separately to the Construction Manager, of such impending or actual cancellation or expiration. Upon receipt of notice from the Contractor, the Owner shall, unless the lapse in coverage arises from an act or omission of the Owner, have the right to stop the Work until the lapse in coverage has been cured by the procurement of replacement coverage by the Contractor. The furnishing of notice by the Contractor shall not relieve the Contractor of any contractual obligation to provide any required coverage. The Contractor's failure to obtain or maintain adequate insurance coverage shall be considered a material breach of the contract.

§ 11.2 Owner's Liability Insurance

§ 11.2.1 The Owner shall be responsible for purchasing and maintaining the Owner's usual liability insurance.

§ 11.3 Waivers of Subrogation

§ 11.3.1 The Owner and Contractor waive all rights against (1) each other and any of their subcontractors, sub-subcontractors, agents, and employees, each of the other; (2) the Construction Manager and Construction Manager's consultants; (3) the Architect and Architect's consultants; (4) other Contractors and any of their subcontractors, sub-subcontractors, agents, and employees; and (5) Separate Contractors, if any, and any of their subcontractors, sub-subcontractors, agents, and employees, for damages caused by fire, or other causes of loss, to the extent those losses are covered by property insurance required by the Agreement or other property insurance applicable to the Project, except such rights as they have to proceeds of such insurance. The Owner or Contractor, as appropriate, shall require similar written waivers in favor of the individuals and entities identified above from the Construction Manager, Construction Manager's consultants, Architect, Architect's consultants, other Contractors, Separate Contractors, subcontractors, and sub-subcontractors. The policies of insurance purchased and maintained by each person or entity agreeing to waive claims pursuant to this Section 11.3.1 shall not prohibit this waiver of subrogation. This waiver of subrogation shall be effective as to a person or entity (1) even though that person or entity would otherwise have a duty of indemnification, contractual or otherwise, (2) even though that person or entity did not pay the insurance premium directly or indirectly, or (3) whether or not the person or entity had an insurable interest in the damaged property.

§ 11.4 Performance Bond and Payment Bond

§ 11.4.1 The Owner shall have the right to require the Contractor to furnish bonds covering faithful performance of the Contract and payment of obligations arising thereunder as stipulated in bidding requirements or specifically required in the Contract Documents on the date of execution of the Contract. Bonds shall be obtained from a company lawfully authorized to do business in the location of the site and have an A.M. Best and Company rating of "A-" or better; and the cost of the bonds shall be included in the Contract Sum. The Contractor shall provide a Performance Bond equal to 100 percent of the Contract Sum, a Payment Bond equal to 100 percent of the Contract Sum, and a Two (2) Year Maintenance Bond equal to 100 percent of the Contract Sum. Bonds shall be consistent with the requirements of **N.J.S.A.** 2A:44-143, and 2A:44-144.

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§ 11.4.2 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.

§11.4.3 The Contractor shall deliver the require bonds to the Owner not later than three (3) days following the date of the Agreement.

§11.4.4 The Contractor shall require the attorney who executes the required bonds on behalf of the surety to affix thereto a certified and current copy of the Power of Attorney, indicating the monetary limit of such power.

§11.4.5 The Contractor shall provide Owner and Construction Manager with the name, address, phone number and other contact information of the local agent of the Company issuing the Project bonds.

ARTICLE 12 UNCOVERING AND CORRECTION OF WORK

§ 12.1 Uncovering of Work

§ 12.1.1 If a portion of the Work is covered contrary to the Construction Manager's, Architect's, or authority having jurisdiction's request or to requirements specifically expressed in the Contract Documents, it must, if requested in writing by either, be uncovered for their observation, inspection, testing or approval,and be replaced at the Contractor's expense without change in the Contract Time.

§ 12.1.2 If a portion of the Work has been covered that the Construction Manager or Architect has not specifically requested to observe prior to its being covered, the Construction Manager or Architect may request to see such Work and it shall be uncovered by the Contractor. If such Work is in accordance with the Contract Documents, costs of uncovering and replacement shall, by appropriate Change Order, be at the Owner's expense. If such Work is not in accordance with the Contract Documents, the costs of uncovering the Work, and the cost of correction, shall be at the Contractor's expense.

§ 12.2 Correction of Work

§ 12.2.1 Before Substantial Completion

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

§ 12.2.2 After Substantial Completion

§ 12.2.2.1 In addition to the Contractor's obligations under Section 3.5, if, within two 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 two-year period for correction of Work, if the Owner fails to notify the Contractor and give the Contractor an opportunity to make the correction, the Owner waives the rights to require correction by the Contractor and to make a claim for breach of warranty. If the Contractor fails to correct nonconforming Work within a reasonable time during that period after receipt of notice from the Owner, Construction Manager or Architect, the Owner may correct it in accordance with Section 2.5. The Contractor shall bear all costs of correcting any and all Work not complying with this warranty, and the Contractor and its Surety shall indemnify the Owner for all costs, expenses, loses, and/or damages incurred by the Owner, including Attorney's fees, additional testing and inspections and compensation for the services and expenses of the Architect made necessary thereby. This obligation shall survive the termination of any or all other obligation or obligations under the contract Documents and it is agreed by the Contractor that in the event the Owner is required to bring suit under this provision against the Contractor to enforce this obligation, the Contractor hereby waives any defense of the statutes of limitations.

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§ 12.2.2.2 The two-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 two-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, Separate Contractors, or other Contractors, whether completed or partially completed, caused by the Contractor's correction or removal of Work that is not in accordance with the requirements of the Contract Documents.

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

§12.2.6 If the Contractor fails to correct nonconforming Work within a reasonable time, the Owner may correct it in accordance with Section 2.4. If the Contractor does not proceed with correction of such nonconforming Work within a reasonable time fixed by written notice from the Architect issued through the Construction Manager, the Owner may remove it and store the salvaged materials or equipment at the Contractor's expense. If the Contractor does not pay costs of such removal and storage within ten (10) days after written notice, the Owner may, upon ten (10) additional days' written notice, sell such materials and equipment at auction or at private sale, and shall account for the proceeds thereof, after deducting costs and damages that should have been borne by the Contractor, including compensation for the Construction Manager's and Architect's services and expenses made necessary thereby. If such proceeds of sale do not cover costs which the Contractor should have borne, the Contract Sum shall be reduced by the deficiency. If payments then or thereafter due the Contractor are not sufficient to cover such amount, the Contractor shall pay the difference to the Owner.

§12.2.7 If, in the opinion of the Architect and the Construction Manager, the General Contractor delays Final Completion of the Work beyond a reasonable time after the Date of Substantial Completion of the Project to such extent that the period between the Date of Substantial Completion of the Project and the end of the guarantee period becomes less than eleven (11) months, the start of the guarantee period shall be the date of the final Project Certificate of Payment in lieu of the Date of Substantial Completion of the Project

§ 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 State of New Jersey and any dispute regarding the Contract shall be venued in Superior Court of New Jersey, Essex County.

§ 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.

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§ 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, Construction Manager, Architect, or Contractor shall constitute a waiver of a right or duty afforded them under the Contract, nor shall such action or failure to act constitute approval of or acquiescence in a breach thereunder, except as may be specifically agreed upon in writing.

§ 13.4 Tests and Inspections

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

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

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

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

§ 13.4.5 If the Construction Manager or Architect is to observe tests, inspections, or approvals required by the Contract Documents, the Construction Manager or Architect will do so promptly and, where practicable, at the normal place of testing. The Architect or Owner may require evidence that materials comply with the Contract. No inspection or approval relieves the Contractor of obligations unless the Owner expressly agrees in writing.

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

§13.4.6.1 Inspections and Tests required to establish with the Contract Documents and specified to be "by Owner", will be made by an independent testing agency selected and paid for by the Owner. Re-testing required as a result of first test showing non-compliance with the Contract Documents will be performed by the same agency, with costs paid for by the Contractor. Representatives of the testing agency shall have access to the Work at all times. The Contractor shall provide facilities for such access in order that the agency may properly perform its function.

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§13.4.6.2 The independent agency employed by the Owner shall prepare the test reports, logs and certificates applicable to the specific inspection and test, and promptly deliver the specified number of copies of same to the designated parties. Other required certificates of inspections, testing or approval shall be secured by the Contractor and delivered by him to the Construction Manager and/or Owner's Representative, in such time as not to delay progress of the Work or final payment thereof.

§ 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. Notwithstanding, any payments withheld for time delays, faulty materials, or workmanship, shall not bear interest for period of delay or non-acceptance.

ARTICLE 14 TERMINATION OR SUSPENSION OF THE CONTRACT

§ 14.1 Termination by the Contractor

§ 14.1.1 If the Work is stopped for a period of 60 consecutive days through no act or fault of the Contractor, a Subcontractor, their agents or employees, or any other persons performing portions of the Work under contract with the Contractor because any order of any Court or other public authority having jurisdiction, an act of government, such as a declaration of national emergency, that requires all Work to be stopped; or 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 approved payments on a Certificate for Payment within the time stated in the Contract Documents, the Contractor may, upon seven (7) additional days' written notice to the Owner and the Architect, terminate the Contract and recover from the Owner payment for Work properly executed only.

§ 14.2 Termination by the Owner for Cause

§ 14.2.1 The Owner may terminate the Contract if the Contractor

- **.1** refuses or fails to supply adequate and competent supervision of properly skilled workers or proper quality or quantity of materials, or falls in any respect to prosecute the Work with promptness and diligence;
- **.2** fails to make payment to Subcontractors or suppliers in accordance with the respective agreements between the Contractor and the Subcontractors or suppliers;
- **.3** disregards applicable laws, statutes, ordinances, codes, rules and regulations, or lawful orders of a public authority; or
- .4 disregards the instructions of the Owner, when such instructions are based on the requirement of the Contract Documents;
- .5 is adjudged a bankrupt or insolvent, or makes a general assignment for the benefit of the Contractor's creditors, or a trustee or receive is appointed for Contractor or any of its property, or files a petition to take advantage of any debtor's act, or to reorganize under bankruptcy or similar laws;
- **.**6 fails to furnish the Owner with assurances satisfactory to the Owner evidencing the Contractor's ability to complete the Work in compliance with the requirements of the Contract Documents
- **.**7 Breaches any warranty made by the Contractor under or pursuant to the Contact Documents;**.8** otherwise does not comply with the Contract Documents.

§ 14.2.2 When any of the reasons described in Section 14.2.1 exist, after consultation with the Construction Manager, 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.

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§ 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 costs of finishing the Work, including compensation for the services of any consultants and the Architect's services and expenses made necessary thereby, and the other costs and expenses identified hereinafter, exceed the unpaid balance of the Contract Sum, the Contractor shall pay the difference to the Owner upon demand. The costs of finishing the Work include, without limitation, all reasonable attorney's fees, additional title costs, insurance, additional interest because of any delay in completing the Work and all other damages as contemplated by this Agreement, incurred by the Owner by reason of or arising from, or relating to the termination of the Contractor as stated herein. .

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

.1 that performance is, was, or would have been, so suspended, delayed, or interrupted, by another cause for which the Contractor is responsible; or

.2 that an equitable adjustment is made or denied under another provision of this Contract.

Notwithstanding, the Contractor is required to continue performing those portions of the work not suspended by the Owner, as refusal to continue the work not suspended constitutes a breach of contract on the part of the Contractor.

§ 14.4 Termination by the Owner for Convenience

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

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

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

.2 take actions necessary, or that the Owner may direct, for the protection and preservation of the Work; and

.3 except for Work directed to be performed prior to the effective date of termination stated in the notice, terminate all existing subcontracts and purchase orders and enter into no further subcontracts and purchase orders.

§ 14.4.3 In case of such termination for the Owner's convenience, the Owner shall pay the Contractor for Work properly executed up to the date of the termination in accordance with the Contract Documents; reasonable costs incurred by reason of the termination as determined by Owner, including reasonable documented costs attributable to termination of Subcontracts – mitigated by the Contractor and subject to Owner approval. The Contractor shall, as a condition of receiving the payments referred to herein, execute and deliver all such papers, turn over all plans, documents and files of whatsoever nature required by the Owner, and take all such steps, including the legal assignment of its contractual rights, as the Owner may require for the purpose of fully vesting in the Owner the rights and benefits of the Contractor. Any claims or damages presented by subcontractors, suppliers, or other parties under contract with the Contractor, arising from or in connection with the termination for the Owner's convenience, shall be the sole responsibility of the Contractor. The Owner shall not be liable for, and the Contractor shall not be entitled to claim or recover, the following costs or damages associated with the termination: (a) Loss of anticipated profits or consequential damages; (b) Costs related to the Contractor's general overhead or home office expenses; (c) Costs incurred after the effective date of termination; (d) Costs that are not directly attributable to the termination or those lacking proper documentation.

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

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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 Construction Manager and Architect, if the Architect is not serving as the Initial Decision Maker. Claims by either party under this Section 15.1.3.1 shall be initiated within 21 days after occurrence of the event giving rise to such Claim or within 21 days after the claimant first recognizes the condition giving rise to the Claim, whichever is later.

§ 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, or disputed item of work, 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. The foregoing written notice shall contain a written statement from the Contractor setting forth in detail the nature and cause of the Claim and an itemized statement of the increase requested to the extent that such costs are reasonably available to the Contractor and accurate. No such written notice shall form the basis of an increase to the Contract Sum unless and until such increase has been authorized by a written Change Order executed and issued according to the terms and conditions set forth herein.

§ 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. Said notice shall itemize all claims and shall contain sufficient detail and substantiating data to permit evaluation of same by the Owner and Architect. No such claim shall be valid unless so made The Contractor's Claim shall include an estimate of cost and of probable effect of delay on progress of the Work. In the case of a continuing delay only one Claim is necessary.

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

Where the cause of delay is due to the weather conditions, extension of time shall be granted only for unusually severe weather, as determined by reference to historical data. The term "historical data" as used in the preceding sentence shall be construed according to this formula: Average rainfall (or snow, or extreme low temperature) for the past five (5) years for the month in question, plus twenty (20) percent. In other words, weather is not deemed to be

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unusually severe unless it is twenty (20) percent worse than the average for that month over the last five (5) years. Notwithstanding, weather events may include those days in which the Contractor is unable to proceed with work on the critical path for more than seven (7) continuous normal Work hours in a day.

§ 15.1.7 Waiver of Claims for Consequential Damages. The Contractor waive Claims against the Owner for consequential damages arising out of or relating to this Contract. This waiver includes 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 waiver is applicable, without limitation, to all consequential damages due to termination by the Owner 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, the Construction Manager, and the Architect, if the Architect is not serving as the Initial Decision Maker, of any change in the Contract Sum or Contract Time or both. The initial decision shall be final and binding on the parties but subject to mediation and, if the parties fail to resolve their dispute through mediation, to binding dispute resolution.

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

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

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§ 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, 15.1.7 and 16.2.6.1, 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 a retired Judge of the Superior Court of New Jersey mutually agreed to by the parties. A request for mediation shall be made in writing, delivered to the other party to the Contract, and filed with the person or entity administering the mediation. The request may be made concurrently with the filing of binding dispute resolution proceedings but, in such event, mediation shall proceed in advance of binding dispute resolution proceedings, which shall be stayed pending mediation for a period of 60 days from the date of filing, unless stayed for a longer period by agreement of the parties or court order.

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

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

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SECTION 00800 - SUPPLEMENTARY GENERAL CONDITIONS

PART 1 - GENERAL

1.1 FUNCTION

A. The following supplements modify, change, delete from or add to the "General Conditions of the Contract for Construction, Construction Manager as Adviser Edition", AIA Document A232 - 2019 and the Standard Form of Agreement Between Owner and Contractor, Construction Manager as Adviser Edition, AIA Document A132 - 2019. Where any Article of the General Conditions is modified or any Paragraph, Subparagraph or Clause thereof is modified or deleted by these supplements, the remaining unaltered provisions of that Article, Paragraph, Subparagraph or Clause shall remain in effect.

B. Refer to Sections in Division 1 "General Requirements" for additional modifications, deletions and additions to the "General Conditions of the Contract for Construction".

1.2 GENERAL CONDITIONS OF THE CONTRACT FOR CONSTRUCTION, CONSTRUCTION MANAGER AS ADVISER EDITION, AIA DOCUMENT A232-2019.

A. Document is modified in accordance with the following paragraphs and as indicated herein after:

1.3 PARAGRAPH 1.1 - BASIC DEFINITIONS

A. Paragraph 1.1.1 - "The Contract Documents":

Delete last sentence "Unless specifically enumerated in the Agreement, the Contract Documents do not..... proposal requirements)."

B. Supplement Paragraph 1.1 "Basic Definitions", as follows:

1.1.11 The Project Manual. The Project Manual is a volume, or volumes, assembled for the Work that includes, or is deemed to incorporate by reference the General Conditions, Supplementary Conditions, the Bidding Requirements and Documents related thereto, the Specifications, and all Addenda issued prior to the execution of the Contract."

1.1.12 Final Completion. The date the Contract has been fully performed, all the Work has been completed and a final certificate for Payment approved by the Owner has been issued by the Architect.

1.1.13 Or Approved Equal and Equal To. Shall mean products by manufacturers other than those specified in the Contract Documents in which the Contractor may submit for those specified in the Contract Documents and which may be

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incorporated in the Work after review and acceptance by the Architect and acceptance by the Owner.

1.4 PARAGRAPH 1.2 - CORRELATION AND INTENT OF THE CONTRACT DOCUMENTS

A. Delete Paragraph 1.2.1 in its entirety and substitute with the following:

1.2.1 The Contract Documents include all items necessary for the proper execution and completion of the Work by the Contractor. The Work shall consist of all items specifically included in the Contract Documents as well as all additional items of Work which are reasonably inferable from that which is specified in order to complete the Work in accordance with the Contract Documents. The Contract Documents are complementary, and what is required by any one Contract Document shall be as binding as if required by all. Any differences between the requirements of the Drawings and the Specifications or any differences noted within the Drawings themselves or within the Specifications themselves have been referred to the Owner, Architect and Construction Manager by Contractor prior to the submission of bids and have been clarified by an Addendum issued to all Bidders.

If any such differences or conflicts were not called to the Owner's, Construction Manager and the Architect's attention prior to submission of bids, the Architect shall decide which of the conflicting requirements will govern based upon the most stringent of the requirements, and, subject to the approval of the Owner, the Contractor shall perform the Work at no additional cost and/or time to the Owner in accordance with the Architect's decision. Work not covered in the Contract Documents will not be required unless it is consistent therewith and is reasonably inferable therefrom as being necessary to produce the intended results.

1.5 PRECEDENCE OF LARGE SCALE DETAILS

A. Supplement Paragraph 1.2 "Correlation and Intent of the Contract Documents", as follows:

1.2.4 The general character of the detail Work is shown on the Drawings but minor modifications may be made in large scale details. Where the word "similar" occurs on the Drawings it shall be used in its general sense and not as meaning identical, and all details shall be worked out in relation to their location and their connection to other parts of the Work. Where on any Drawings a portion of the Work is drawn out and the remainder is indicated in outline, the parts drawn out shall apply also to other like portions of the Work. Where detail is indicated by starting only, such detail shall be continued throughout the courses or parts in which it occurs and shall also apply to all other similar parts in the Work unless otherwise indicated. In case of differences between small and large scale Drawings, the larger scale Drawings shall take precedence. Dimensions given shall take precedence over scale measurements. Any discrepancies shall be referred to the Architect for adjustment before any Work affected thereby has been performed.

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1.2.5 During the course of the Work, should any ambiguities or discrepancies be found in the Specifications or on the Drawings; or should there be found any discrepancies between the Drawings and Specifications to which the Contractor has failed to call attention before submitting their bid, then the Architect will interpret the intent of the Drawings and Specifications and the Contractor hereby agrees to abide by the Architect's interpretation and to carry out the work in accordance with the decision of the Architect. It is expressly stipulated that neither the Drawings nor the Specifications shall take precedence over the other, and it is further stipulated that the Architect may interpret or construe the Drawings and Specifications so as to secure in all cases the result most consistent with the needs and requirements of the Work, and which is in the best interests of the Owner.

1.6 PARAGRAPH 2.1 - GENERAL

A. Delete Paragraph 2.1 in its entirety.

1.7 PARAGRAPH 2.2 - EVIDENCE OF THE OWNER'S FINANCIAL ARRANGEMENTS

A. Delete Paragraph 2.2.1 in its entirety.

1.8 PARAGRAPH 2.2 - INFORMATION AND SERVICES REQUIRED OF THE OWNER

A. Delete Paragraphs 2.3.1, 2.3.5 and 2.3.5 in their entirety.

B. Delete Paragraph 2.3.7 in its entirety and substitute with the following:

2.3.7 The Architect will furnish the Contractor, without charge, the following number of sets of Drawings and Specifications. Additional copies will be furnished at the Architect's reproduction costs, to be paid by the Contractor.

Single Overall Contract 3 Sets

1.9 PARAGRAPH 2.4 - OWNER'S RIGHT TO STOP THE WORK

A. Edit paragraph 2.4 as follows:

Line 1; after "Documents" add:

"or fails or refuses to provide a sufficient amount of properly supervised and coordinated labor, materials, or equipment so as to be able to complete the Work within the Contract Time or fails to remove and discharge (within ten days) any lien filed upon Owner's property by anyone claiming by, through, or under Contractor, or disregard the instructions of Architect, Construction Manager or Owner when based on the requirements of the Contract Documents,".

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1.10 PARAGRAPH 2.5 - OWNER'S RIGHT TO CARRY OUT THE WORK

A. In the 10th line, delete “the Contractor....to the Owner”, and substitute with the following:

"the Contractor, and/or their Surety shall pay the difference to the Owner."

1.11 PARAGRAPH 3.2 - REVIEW OF CONTRACT DOCUMENTS AND FIELD CONDITIONS BY CONTRACTOR

A. Delete the second sentence in Paragraph 3.2.2 in its entirety and substitute with the following:

“If any errors, inconsistencies or omissions appear in the Drawings, Specifications or other Contract Documents, which should reasonably have been discovered and concerning which interpretation had not been obtained from the Architect during the Bidding Period, the Contractor shall within ten days after receiving written ‘Notice of Award’ notify the Architect in writing of such error, inconsistency or omission. In the event the Contractor fails to give such notice, they will be held responsible for the results of any such errors, inconsistencies or omissions and the cost of rectifying same. Interpretation of this procedure after the ten-day period will be made by the Architect and their decision will be final”.

1.12 LAYOUT OF WORK

A. Supplement Paragraph 3.3 "Supervision and Construction Procedures", as follows:

3.3.4 Each Contractor shall lay out their own Work and be responsible for all lines, elevations and measurements of the building, and other Work executed by them under the Contract. They must exercise proper precaution to verify the figures shown on the Drawings before laying out the Work and will be held responsible for any errors resulting from their failure to exercise such precaution.

3.3.5 The Contractor shall coordinate their operations with those of all their Subcontractors.

3.3.6 The Contractor, including their Subcontractors, shall keep fully informed of the progress and the details of the Work of all Subcontractors, and shall notify the CM immediately of lack of progress or defective workmanship on the part of any Subcontractors.

3.3.7 Failure of the Contractor to keep informed of the Work progressing on or off the site, and their failure to give notice of lack of progress of defective workmanship by others, will be construed by Owner and by the CM as acceptance by the Contractor of the status of the Work as being satisfactory for proper coordination with the Contractor's own Work and with the Work of all their Subcontractors.

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1.13 WARRANTY

A. Supplement Paragraph 3.5 "Warranty", as follows:

3.5.1.1 The warranty period for all work of the Contractor shall be **two (2) years** from the date of substantial completion and acceptance by the Owner unless otherwise specified.

1.14 PARAGRAPH 3.7 - PERMITS, FEES, NOTICES, AND COMPLIANCE WITH LAWS

A. 3.7.3 In line 3, delete "the costs attributable to correction" and replace with "all costs attributable to the correction thereof or related thereto, including all fines and penalties."

1.15 PARAGRAPH 3.9 - SUPERINTENDENT

A. Supplement Paragraph 3.9 "Superintendent", as follows:

3.9.2.1 Qualifications of superintendent proposed to be used shall be submitted to the Construction Manager and Owner's approval obtained before proceeding with the Work.

3.9.7 The superintendent shall be assigned to the project on a full-time basis from the inception of construction until the completion of all corrective and punch list Work.

1.16 CONTRACTOR'S CONSTRUCTION AND SUBMITTAL SCHEDULES

A. Supplement Paragraph 3.10 "Contractor's Construction Submittal Schedules", as follows:

3.10.1.1 Within fifteen (15) days after the date of the notice to proceed the Contractor shall submit to the Architect, on forms supplied by the Architect, a bar-graph Progress Schedule upon which shall be indicated the dates for starting and the dates for completion of the Contract and all divisions of the Work in a manner which will coincide with Time For Completion and other project milestone dates.

Schedule "CPM" Requirements:

.1 General Construction Work Contractor shall include in their price the cost of the outsourcing CPM scheduling for entire project and all prime Subcontractors. Utilize "Primavera-Project Planner - current version Software by Primavera Systems Inc.".

.2 CPM consultant to be approved by Architect and the Construction Manager. Initial GC. Schedule to be provided to all Prime Subcontractors within 15 days of Notice to Proceed.

.3 Monthly updates will be required during construction with each payment application.

.4 Interim Progress Updates will be required for each Job Progress Meeting.

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.5 Comply with all recommendations and instructions of the Construction Manager for preparation of Project Schedule and associated periodic reports.

3.10.1.2 This schedule will be distributed to the Prime Subcontractors for Structural Steel, Plumbing, Heating, Ventilating and Air Conditioning and Electrical Work. When approved by the Subcontractors and agreed upon by the Architect, this schedule will become one of the Contract Documents, and shall be altered thereafter only in accordance with duly authorized change orders for extensions of time in accordance with Paragraph 8.3, "Delays and Extensions of Time".

1.17 SUBMITTALS

A. Supplement Paragraph 3.12 "Shop Drawings, Product Data and Samples", as follows:

3.12.11 All fabricated Work shall require shop drawings.

3.12.12 The Architect may request samples of any or all materials to be used in the Work. When requested, samples shall be submitted promptly.

3.12.13 Shop drawings and other data, where possible, shall be submitted in the form of reproducible transparency. Catalogs and other printed matter shall be submitted in six (6) copies.

.1 Additional prints for file, distribution and for coordination of the work with other Contractors shall be provided as directed or as required.

3.12.14 Submittal Procedures: The Contractor's failure to follow proper procedures for submittals constitutes grounds for withholding of payments until such time as the Contractor is in compliance. Proper submittal procedures include all of those set forth elsewhere in this specification including the following:

.1 All submittals shall be separate for each Project. Contractor must indicate on each transmittal the reference to the Architect's Project Number.

.2 Failure to adhere to deadlines for completion of submittals and record/resubmittals.

.3 Failure to provide submittals in good order as required by the Contract Documents.

.4 Failure to provide submittals in relationship to the progress of the Work.

.5 Performance of Work or part of the Work, without complete approved submittals.

3.12.15 Architect / Engineer's actions for submittals shall be as follows:

.1 Submittals returned to the Contractor marked "Approved" allow the Contractor to proceed with the work.

.2 Submittals returned to the Contractor "Approved As Noted"; "Resubmit For Record":

.1 The Contractor may proceed with work, however noted items by the Architect / Engineer (or any affected portion of the submittal), must be corrected and resubmitted to the Architect's office within ten (10)

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working days of Contractor's receipt of the original submittal. Final acceptance of all work is subject to the Contractor's compliance with requirements of the Contract Documents.

.3 Submittals returned marked "Returned for Corrections" require the Contractor to resubmit corrected or alternate data in accordance with the corrections indicated.

.1 The originals of the reproducible transparencies marked "Returned for Corrections" shall be corrected until approval is obtained. The Contractor shall provide such number of prints of transparencies marked "Approved" as required for the expeditious execution of the Work.

.4 Submittals returned marked "No Action Taken":

.1 The Contractor may not proceed with the Work. The Architect / Engineer will not review submittals so marked until the Contractor has properly completed the submittal or corrected the reasons stated thereon.

.2 Reasons for "No Action Taken" on a submittal include, but are not limited to the Contractor's failure to:

.1 Submit an approved Subcontractor or supplier.

.2 Indicate job specific product data such as catalog number, size, type or material on each submittal.

.3 Submit complete data, test reports or similar information as required by the Contract Documents.

.4 Obtain prior approval for substitution.

.5 Submit documents in a legible or orderly fashion.

.6 Adhere to any submittal requirements set forth in the Contract Documents.

.7 Submit only submittals which are called for in the Contract Documents, other submittals will not be reviewed by the Architect / Engineer.

3.12.16 The following submittal schedule will be mandatory; time is from date of the Notice to Proceed, in consecutive calendar days and also in accordance with requirements of Specification Section 01800.

The Contract and Trades: 30 days

3.12.17 Request for Substitutions:

.1 Substitutions may be considered Only within thirty (30) calendar days after the award of the Contract. Subsequent requests will be considered Only when, through no fault of the Contractor or any other persons for whom Contractor is responsible, none of the specified products are available.

.2 Submission of request for substitution shall constitute a representation by the Contractor that they:

.1 Have investigated the proposed product and determined that it is equal to or better than the specified product.

.2 Will provide the same variety for the proposed product as for the specified product.

.3 Will coordinate the installation and make other changes which may be

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required for the Work to be complete in all respects, including:

.1 Re-design.

.2 Additional components and capacity required by other Work affected by the change.

.3 Waives all claims for additional costs and time extensions which subsequently may become apparent and which are caused by the change.

.4 Will reimburse the Owner for additional costs for evaluation of the substitution request, re-design if required, and re-approval by authorities having jurisdiction if required.

.3 Substitutions will not be considered when acceptance would require substantial revision of the Contract Documents.

.4 Substitutions will not be considered when they are indicated or implied on shop drawings or product data submittals without separate written request.

.5 Substitution requests will not be considered when submitted directly by Subcontractor or supplier.

.6 When the proposed substitution is not accepted, Contractor(s) must provide the product (or one of the products, as the case may be) specified.

.7 The Contractor will be notified in writing within a reasonable time, verbal acceptance will not be valid.

.8 Acceptable substitutions will be added to the Contract Documents by appropriate modifications.

.9 Requests for substitution will be reviewed by the Architect upon receipt of all the information requested in the following paragraph. Failure to provide the required information shall be cause for rejection of substitution request.

.10 Submittal for Substitutions:

.1 Submit 3 copies of requests for substitutions, fully identified for product, material or method being replaced by substitution, including related Specification section and Drawing number(s), and fully documented to show compliance with requirements for substitutions. Submit the following:

.1 Complete product data, Drawings, and descriptions of materials and methods where applicable. Provide manufacturer's name and address, trade name, and model number of product (if applicable), and name of fabricator or supplier (if applicable).

.2 Samples where applicable or requested.

.3 Detailed comparison of significant qualities (size, weight, durability, performance and similar characteristics, and including visual effect where applicable) for proposed substitution in comparison with original requirements.

.4 List, with addresses, of 3 projects where proposed substitution has been used previously and successfully in a similar application.

.5 Coordination information, indicating every required change in every other element of the work which is affected by substitution, extended to include work by Owner and separate Contractors.

.6 A complete statement of effect substitution will have upon schedule of the Work, including its effect (if any) on Contract time (in

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comparison with compliance with requirements without approval of proposed substitution).

.7 Cost information, including a proposal of net change in Contract Sum (if any).

.8 Certification by Contractor to the effect that, in their opinion and after their thorough evaluation, proposed substitution will result in total Work which is equal to or better than the Work originally required by Contract Documents, in every respect of significance except as specifically stated in certification; and that it will perform adequately in application indicated, regardless of equality and exceptions thereto.

.9 Include in certification, Contractor's waiver of rights to additional payment and time which may subsequently be necessitated, by failure of substitution to perform adequately and for required Work to make corrections thereof.

3.12.18 Approval of Substitutions:

.1 Pursuant to N.J.S.A. 18A:18A-15(d), requests for substitutions, for a requested approved equal product, will be reviewed for compliance with the Specifications based upon the data provided by the Contractor after the award of the project. Approval or rejection will be based on samples, technical data and other items submitted and will be reviewed once and only once for each such request.

.2 Change Order Form: Submit requests for substitutions which propose a change in either the Contract Sum or Contract Time by procedures required for change order proposals.

3.12.19 "Or Equals"

A. Contractor's Request; Governing Criteria: Whenever an item of equipment or material is specified to described in the Contract Documents by using the names of one or more proprietary or items or specific Suppliers, the Contract Price has been based upon Contractor furnishing such item as specified. The Specification or description of such an item is intended to establish the type, function, appearance, and quality required. Unless the Specification or description contains or is followed by words reading that no like, equivalent, or "or equal" item is permitted, Contractor may request that the Architect authorize the use of other items of equipment or material, or items from other proposed Suppliers, under the circumstances described below.

B. If the Architect, in its sole discretion, determines that an item of equipment or material proposed by the Contractor is functionally equal to that named and sufficiently similar so that no change in related Work will be required, the Architect will deem in an "or equal" item. For the purposes of this paragraph, a proposed item of equipment or material will be considered functionally equal to an item so named if:

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C. In the exercise of reasonable judgment, Architect determines that the proposed item:
   1. Is at least equal in materials of construction, quality, durability, appearance, strength, and design characteristics;
   2. Will reliably perform at least equally well the function and achieve the results imposed by the design concept of the completed Project as a functioning whole;
   3. Has a proven record of performance and availability of responsive service; and
   4. Is not objectionable to the Owner.

D. Contractor certifies that, if the proposed item is approved and incorporated into the Work:
   1. There will be no increase in cost to the Owner or increase in Contract Times; and
   2. The item will conform substantially to the detailed requirements of the item named in the Contract Documents.

E. Contractor's Expense: Contractor shall provide all data in support of any proposed "or equal" item at Contractor's expense.

F. Architect's Evaluation and Determination: Architect will be allowed a reasonable time to evaluate each "or equal" request. Architect may require Contractor to furnish additional data about the proposed "or equal" item. Architect will be the sole judge of acceptability. No "or equal" item will be ordered, furnished, installed or utilized until Architect's review is complete and Architect determines that the proposed item is an "or equal," which will be evidence by an approved Shop Drawing or other written communication. Architect will advise Contractor in writing of any negative determination.

G. Effect of Architect's Determination: Neither approval nor denial of an "or equal" request will result in any change in Contract Price. The Architect's denial of an "or equal" request will be final and binding, and may not be reversed through an appeal under any provision of the Contract.

H. Treatment as a Substitution Request: If Architect determines that an item of equipment or material proposed by Contractor does not qualify as an "or equal" item, Contractor may request that the Architect consider the item a proposed substitute pursuant to 3.12.17.

1.18 LONG LEAD ITEMS

A. Supplement Paragraph 3.12 "Shop Drawings, Product Data and Samples", as follows:

3.12.19 In addition to and concurrent with the submission of the "Schedule of Values" as provided under Paragraph 9.2, Contractor shall submit a list of all materials, equipment or components which are anticipated to require more than four weeks

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delivery, together with scheduled ordering and delivery time table. This will be discussed and reviewed regularly at the job site meetings. Upon request by the Architect, the Contractor shall be prepared to produce evidence of having placed orders for specific materials, equipment and components.

1.19 PARAGRAPH 3.13 - USE OF SITE

A. Supplement Paragraph 3.13 “Use of Site”, as follows:

3.13.7 Only materials and equipment which are to be used directly in the Work shall be brought to and stored on the Project site by the Contractor. After equipment is no longer required for the Work, it shall be promptly removed from the project site. Protection of construction materials and equipment stored at the project site from weather, theft, damage and all other adversity is solely the responsibility of the Contractor.

3.13.8 The Contractor and any entity for whom the Contractor is responsible shall not erect any sign on the project site without the prior written consent of the Owner.

1.20 CLEANING UP

A. 3.15.1 In line 2, insert "promptly" before "remove." In the last line, add "in addition, the Contractor shall comply with 3.15.4."

B. 3.15.2 In the last line, add ",and withheld from any remaining payments."

C. Supplement Paragraph 3.15 “Cleaning Up”, as follows:

3.15.3 The Contractor shall frequently clean up all refuse, rubbish, scrap, cartons, materials and debris caused by construction operations to the end that the site of the Work shall at all times present a neat, orderly and workmanlike appearance. This includes, without exception, the debris created by the work of all trades engaged under the Contract. The Contractor shall remove the debris from the site and premises and dispose of it by legal means at its own expense for collecting, loading, hauling and dumping.

3.15.4 The Prime Contractor shall also perform or have performed the following immediately prior to the Architect's inspection for Substantial Completion:

.1 Removal of all manufacturer's temporary labels from materials, equipment and fixtures.

.2 Removal of marks, stains, fingerprints, other soil, dust, dirt, from painted, decorated or stained woodwork, plaster or plasterboard, metal, acoustic tile, and equipment surfaces.

.3 Removal of spots, plant, soil from resilient flooring.

.4 Removal of temporary floor protections, clean, wax or otherwise treat as directed, polish all finished floors. Final vacuum all carpet.

.5 Clean all interior finished surfaces required to have a polished finish, of oil,

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stains, dust, dirt, paint and the like; leave without fingerprints, blemishes.

.6 Final site clean-up shall extend beyond the Contract Limit Lines as reasonably required to insure the complete removal of all construction debris from the/ each entire site, including staging areas.

1.21 PARAGRAPH 3.16 - ACCESS TO WORK

A. Supplement Paragraph 3.16 “Access to Work”, as follows:

3.16.1 The Contractor shall promptly notify the Architect and Construction Manager and Owner of the presence of hazardous conditions at the site, including the start of hazardous operations or the discovery or exposure of hazardous substances.

1.22 PARAGRAPH 3.18 - INDEMNIFICATION

A. Supplement Paragraph 3.18.1, “Indemnification”, as follows:

.1 Contractor, for itself, its successors and assigns, agrees to indemnify and save Owner, the individual members (past, present and future), its successors, assigns, employees, agent, Architect(s), Engineer(s), and the Construction Manager, harmless from, and against any and all claims, demands, damages, actions or causes of action together with any and all losses, costs or expenses in connection therewith or related thereto, including, but not limited to, attorney fees and costs of suit, for bodily injuries, sickness, disease, death or property damage arising in or in any manner growing out of the Work performed, or to be performed under this Contract. Contractor and its successors and assigns agree to indemnify the Owner, its individual members (past, present and future), its successors, assigns, employees, agents, Architect(s), Engineer(s) and/or Construction Manager against all fines, penalties or losses incurred for, including, but not limited to, attorney fees and costs of suit, or by reason of the violation by Contractor in the performance of this Contract, or any ordinance, regulation, rule of law of any political subdivision or duly constituted public authority. Without limiting the foregoing, the Contractor, at the request of Owner, its individual members (past and present), its successors, assigns, employees, agents, Architect(s), or Engineer(s) and Construction Manager, agrees to defend at the Contractor's expense any suit or proceeding brought against Owner, its individual members (past, present and future), its successors, assigns, employees, agents, Architect(s), Engineer(s) and /or Construction Manager, due to, or arising out of the Work performed by the Contractor.

.1 Contractor acknowledges and agrees that obligations and duties of the Construction Manager under the Construction Manager's agreement with the Owner are solely for the benefit of the Owner, that notwithstanding any action of the Construction Manager in connection with the Project.

.2 The Construction Manager shall not in any respect be deemed to have assumed any duties or obligations in favor of the Contractor, and that Construction Manager is acting as an agent of and on behalf of the Owner to the extent provided herein.

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1.23 RE-DESIGN

A. Supplement Article 3 "Contractor", as follows:

3.19 RE-DESIGN

If the Contractor makes, or causes to be made, due to approval of substitute equipment or otherwise, any substantial change in the form, type, system and details of construction from those shown on the Drawings, they shall pay for all costs arising from such changes. The Contractor shall pay all Architectural and Engineering fees required to check the adequacy of such changes. Any changes or departures from the construction and details shown shall be made only after written approval from the Architect.

1.24 PARAGRAPH 4.2 - ADMINISTRATION OF THE CONTRACT

A. Supplement Paragraph 4.2.1, as follows:

.1 The Owner has designated New Road Construction Management as Construction Manager, authorized to act in the Owner's behalf to administer, coordinate, and inspect the Work of this Project.

.1 Any and all correspondence, coordination, questions and instructions will be directed to and issued by the Construction Manager to all project participants.

B. 4.2.3 In lines 2 and 3, delete "determine in general" and replace with “endeavor to determine”.

C. 4.2.4 In the 1st line, change "Construction Manager" to "Prime Contractor".

D. 4.2.10 In this Paragraph, change all references "Construction Manager" to read "Architect" and change "Architect" to read "Construction Manager".

E. 4.2.13 After "Construction Manager" add words "and the Architect".

F. Supplement Paragraph 4.2 "Administration of the Contract", as follows:

4.2.22 Reference in the technical provisions of the Specifications to standard Specifications and test methods, including those of the American Society for Testing and Materials, the American Iron and Steel Institute, the American National Standards Institute, the American Society of Mechanical Engineers, the American Society of Heating, Refrigeration and Air Conditioning Engineers, the Factory Mutual System, the National Fire Protection Association, Federal Specifications, and other similar nationally recognized technical societies and agencies shall refer to the editions and revisions current with the date of the Contract Documents.

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"Any claim, dispute or other matter in question between the Contractor and the Owner referred to the Architect through the Construction Manager, except those relating to the artistic effects as provided in subparagraph 4.2.20 and those which have been waived by the making or acceptance of final payment as provided in subparagraph 9.10, inclusive, may proceed to litigation, but not before the earlier of (1) the date on which the Architect has rendered a written decision, or (2) the tenth day after the parties have presented their evidence to the Architect or have been given a reasonable opportunity to do so, if the Architect has not rendered a written decision by that date. No such claim may proceed to arbitration."

4.2.23 The Architect's decision, after consultation with Owner and Construction Manager with respect to proposed substitutions of material or equipment specified by trade name, shall be final. The Architect reserves the right, after consultation with Owner and Construction Manager, to waive Specifications and to accept a proposed substitution which in their opinion is superior to the material or product specified, or to limit the Specification to the product specified.

4.2.24 Where three or more trade names or manufacturers' names are specified, the Contractor shall furnish one of the brands specified or may submit an equivalent or better product(s) to be reviewed by the Architect / Engineer for consideration. Where only one brand or name is specified, the Contractor may submit other brands for consideration; however, it shall be the Contractor's responsibility to prove equality.

4.2.25 Approval of substitutions shall not relieve the Contractor of responsibility for adequate fulfillment of all the various parts of the work, nor from specified guarantees and maintenance. Modification of adjacent or connecting work required due to any substitution approval shall be provided as part of the substitution.

4.2.26 Insofar as practicable, except as otherwise specified or shown, the material or product of one manufacturer shall be used throughout the work for each specified purpose.

4.2.27 Manufactured articles, materials and equipment shall be applied, installed, connected, erected, used, cleaned and conditioned in strict accordance with the manufacturer's directions. Should such directions conflict with the Specifications, the Contractor shall request clarification from the Architect before proceeding.

1.25 SUBCONTRACTORS AND MATERIALMEN

A. Delete subparagraph 5.2.3 and substitute with the following:

5.2.3 The names of all Subcontractors and material suppliers, in addition to those required to be listed pursuant to N.J.S.A. 18A-18A-18 (if any), shall be submitted for approval not later than thirty (30) calendar days after the date of the notice to proceed. Subcontractors referenced herein, are in addition to those required to be listed, along with all necessary paperwork concerning each such Subcontractor’s qualifications, licensure, etc., pursuant to N.J.S.A. 18A:18A-18, if any. The list of

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proposed Subcontractors shall include a description of the materials and equipment each proposes to furnish and install in the work. The description shall be in sufficient detail to allow the Architect to determine general conformance to Contract requirements. Approval of the submittals required under this Article shall not relieve the Contractor from conformance to Contract requirements.

B. Supplement subparagraph 5.2.3, as follows:

.1 Written confirmation of award of each major Subcontract shall be submitted to the Architect, in form subject to their approval, within seven (7) calendar days after receipt of Architect's approval of proposed Subcontractor list as provided under Paragraph 5.2.3 above.

1.26 PARAGRAPH 5.3 - SUBCONTRACTUAL RELATIONS

A. 5.3 At lines 5, 10, 11, and 13, insert “written” before the word “agreement” or “agreements”

B. Supplement Paragraph 5.3, as follows:

5.3.1 The Contractor shall obligate the/each Subcontractor specifically to comply with the New Jersey Plan of Affirmative Action to avoid discriminatory practice in employment.

5.3.2 The Contractor shall obligate the/each Subcontractor to comply with the applicable prevailing wage schedule of the Department of Labor of the State of New Jersey.

5.3.3 The Contractor agrees that all of its Contract(s) with Subcontractor(s) shall have provisions requiring that the Subcontractor(s) comply with the provisions of the New Jersey Prevailing Wage Act, N.J.S.A. 34:11-56.25 et seq.

1.27 PARAGRAPH 6.1 - OWNER’S RIGHT TO PERFORM CONSTRUCTION WITH OWN FORCES AND TO AWARD OTHER CONTRACTS

A. Delete subparagraph 6.1.2 in its entirety and substitute with the following:

6.1.2 The Prime Contractor shall provide for the coordination of the Work of their own forces and of each of their separate Subcontractors with Work of the other Contractors, who shall cooperate therewith as provided in Paragraph 6.2.

1.28 PARAGRAPH 6.2 - MUTUAL RESPONSIBILITY

A. 6.2.4 In line 1, delete "wrongfully."

B. Supplement Paragraph 6.2.4, as follows:

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.1 Should the Contractor cause damage to the Work or property of any separate Contractor on the project, the Contractor shall, upon due notice, promptly settle with such other Contractor by agreement or otherwise resolve the dispute. If such separate Contractor sues or institutes an arbitration proceeding against the Owner on account of any damage alleged to have been so sustained, the Contractor shall defend such proceeding at their own expense, and if any judgment against the Owner arises therefrom, the Contractor shall pay or satisfy it and shall reimburse the Owner for any attorney's fees and court costs which the Owner has incurred.

1.29 ARTICLE 7 - CHANGES IN THE WORK

A. Supplement Paragraph 7.1 “General”, as follows:

7.1.2 Add to the end of Subparagraph 7.1.2, "Neither this Contract nor the Work to be performed hereunder can be changed by oral agreement. No course of conduct or dealings between the parties, nor express or implied acceptance of alterations or additions to the Work, and no claims that the Owner has been unjustly enriched by any alteration or addition to the Work, whether there is, in fact, any unjust enrichment to the Work, shall be the basis for any alleged implied agreement by the Owner to the change or any increase in any amounts due under the Contract or a change in any time period provided for in the Contract Documents."

7.1.2.1 A field directive or field order shall not be recognized as having any impact upon the Contract Sum or the Contract Time and the Contractor shall have no claim in regard thereto unless it shall, prior to complying with same and in no event no later than 10 business days from the date such direction or order was given, submit to the Owner for the Owner's approval its change proposal.

B. Supplement Paragraph 7.2 “General”, as follows:

7.2.2.2 When submitting its change proposal, the Contractor shall include and set forth in clear and precise detail breakdowns of labor and materials for all trades involved and the estimated impact on the construction schedule. The Contractor shall furnish spread sheets from which the breakdowns were prepared, plus spread sheets, if requested, of any Subcontractors.

1.30 ALLOWANCE FOR CHANGE ORDER OVERHEAD AND PROFIT

A. Supplement Paragraph 7.2 "Change Orders" as follows:

7.2.4 For any extra Work or portion thereof performed by the Prime Contractor, the cost to the Owner shall include the cost of the extra work plus a maximum allowance of fifteen percent (15%) for overhead and profit.

.1 For any extra Work or portion thereof performed by a Subcontractor(s), the cost to the Owner shall include the cost of the extra work to the Subcontractor plus a maximum allowance of ten percent (10%) for overhead

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and profit, plus the Prime Contractor's overhead and profit not to exceed five percent (5%) of the Subcontractor's cost.

7.2.5 Change Order shall include all costs, including cost of preparation of the change order, all impact and ripple costs associated with modifications or delays to the Work, and all costs associated with modifications to other Work.

.1 The Prime Contractor shall furnish all necessary documentation to support the additional cost, including but not limited to the following:

.1 Copy of Subcontractor's proposal.

.2 Complete breakdown for all costs for labor and material.

.3 Complete breakdown of related costs.

.4 Other information as may be requested by the Architect / Construction Manager.

7.2.6 The overall cost of the Change Order shall be inclusive and once accepted by the Owner it shall be considered full and final.

7.2.7 No additional time will be granted to the Contractor for minor change orders unless each individual change order totals more than $100,000.

7.2.8 A field directive or field order shall not be recognized as having any impact upon the Contract Sum or the Contract Time and the Contractor shall have no claim in regard thereto unless it shall, prior to complying with same and in no event no later than 10 business days from the date such direction or order was given, submit to the Owner for the Owner's approval its change proposal.

7.2.9 When submitting its change proposal, the Contractor shall include and set forth in clear and precise detail breakdowns of labor and materials for all trades involved and the estimated impact on the construction schedule. The Contractor shall furnish spread sheets from which the breakdowns were prepared, plus spread sheets, if requested, of any Subcontractors.

1.31 PARAGRAPH 8.2 - PROGRESS AND COMPLETION

A. 8.2.2 Delete "knowingly" in line 1.

1.32 TIME OF COMMENCEMENT

A. Supplement Paragraph 8.2 "Progress and Completion", as follows:

8.2.4 Work shall commence within ten (10) business days from the date of the Notice to Proceed (NTP).

1.33 EXTENSION OF TIME

A. Supplement Paragraph 8.3 "Delays and Extensions of Time", as follows:

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8.3.4 Where the cause of delay is due to weather conditions, extension of time shall be granted only for unusually severe weather, as determined by reference to historical data. The term "historical data" as used in the preceding sentence shall be construed according to this formula: Average rainfall (or snow or low temperature) for the past five (5) years for the month in question, plus 10 percent. In other words, weather is not deemed to be unusually severe unless it is more than 10 percent worse than the average for that month over the last five years.

8.3.5 If the Contractor is delayed in completion of the work by any act or neglect of the Owner, Architect, or of any other Contractor employed by the Owner, or by changes ordered in the Work, or by strikes, lockouts, fire, unusual delay by common carriers, unavoidable casualties, or any cause beyond the Contractor's control or by any cause which the Architect / Construction Manager shall decide to justify the delay, then for all such delays and suspensions the Contractor shall be allowed one day additional to the time limitations herein stated for each and every day of such delay so caused in the completion of the work, the same to be ascertained solely by the Architect / Construction Manager, and a similar allowance of extra time will be made for such delays as the Architect / Construction Manager may find to have been caused by the Owner.

.1 No such extensions of time shall be made for any one or more delays unless within ten (10) business days after the beginning of such delays a written request for additional time shall be filed with the Architect / Construction Manager. In case of a continuing cause of delay, only one request is necessary.

8.3.6 The Contractor agrees that the Owner can deduct from the Contract Price, any wages paid by the Owner to any Inspector or Inspectors necessarily employed by the Owner for any number of days in excess of the number of days allowed in Specification section 01800, for completion of the Work.

1.34 PARAGRAPH 9.2 - SCHEDULE OF VALUES

A. Supplement Paragraph 9.2 "Schedule of Values", as follows:

9.2.1 The Schedule of Values shall include bonds and insurance and shall include copies of invoices and / or cancelled checks from bonding and insurance agents for the additional cost of the coverage for the project being billed.

.1 The Prime Contractor must provide draft copies of the Schedule of Values, within fifteen (15) business days from Notice to Proceed. Submit two (2) copies to the Architect.

.1 Schedule of Values shall include separate costs for work at the School Project referenced with Architect's Project Number.

.2 Schedule of Values shall also include each type of Work, materials and installation, in accordance with each Specification section, as listed in the Index and / or as shown on Drawings.

.3 The Prime Contractor shall include separate line items for the following:

.1 Bonds,

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.2 Insurance,
.3 Mobilization,
.4 General Conditions,
.5 Submittals,
.6 As-Built Drawings, as per Section 01700,
.7 Punch list items,
.8 CPM Schedule,
.9 Closeout Documents,
.10 Allowances.

1.35 STORED MATERIALS

A. Supplement Paragraph 9.3.2, as follows:

.1 To encourage early purchase, Owner will pay for stored materials and equipment. The following procedures must be followed in order to obtain payment.
  .1 A certificate of insurance naming the Owner as loss beneficiary for the full dollar amount representing the materials stored.
  .2 A consent of surety in the amount being requisitioned, said Surety being the bonding company of the Prime Contractor.
  .3 Materials to be stored in warehouse must be inspected by the Construction Manager and Contractor will not receive extra compensation for storage costs.
  .4 Any time and traveling expenses for the Construction Manager to visit and inspect equipment stored will be borne by the Contractor making the off-site storage request.
  .5 Payment invoices for materials stored off-site shall be so noted.
  .6 After the receipt of the above, the Construction Manager will endorse same and forward to the Owner for their approval.
  .7 Payment invoices not following the above format will be rejected in total.
  .8 There will be no storage space available in existing buildings. Space in new building may be used for storage only if approved in writing by Construction Manager and all Contractors having work in the area.
  .9 The Contractor will be paid for stored materials no more than the actual or replacement value of the materials. The Contractor will furnish Vendors price lists, priced inventories or other documentation to support claims for payment of materials stored on or off-site.

1.36 PARAGRAPH 9.3 - APPLICATIONS FOR PAYMENT

A. Supplement Paragraph 9.3 “Applications for Payment”, as follows:

9.3.4 Applications for payment which include billing for bonds and insurance shall enclose copies of invoices or cancelled checks from bonding and insurance agents for the additional cost of the coverage for the project being billed.

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1.37 PARAGRAPH 9.5 - DECISIONS TO WITHHOLD CERTIFICATION

A. 9.5.1.6 In the first line, delete "and" and substitute "or".

B. 9.5.1.7 Delete "repeated".

C. Supplement Paragraph 9.5.1, as follows:

.8 Deliberate delay in the submission for approval of names of Subcontractors, materialmen, sources of supply, shop drawings and samples.
.9 Failure to maintain the site in a safe and satisfactory condition in accordance with good construction practices.
.10 Failure of mechanical trades or electrical trade Subcontractors to comply with mandatory requirements for maintaining record Drawings. The Contractor shall be required to check record Drawings each month. Written confirmation that the record Drawings are up-to-date shall be required by the Architect before approval of the Contractor's monthly payment requisition will be considered.

1.38 PARAGRAPH 9.6 - PROGRESS PAYMENTS

A. Supplement Paragraph 9.6 “Progress Payments”, as follows:

9.6.9 In making progress payments, on Contracts totaling more than $100,000 dollars there shall be retained two percent (2%) of the approved amount when the outstanding balance of the Contract exceeds $500,000, and five percent (5%) of the amount due on each partial payment when the outstanding balance of the Contract is $500,000 or less, until final completion and acceptance of all work covered by the Contract, including the completion of all corrective or punch list items.

9.6.10 In making progress payments, on Contracts totaling less than $100,000 dollars there shall be retained ten percent (10%) of the approved amount until seventy-five percent (75%) of the Contract Price has been paid at which time the retainage for that seventy-five percent (75%) will be reduced to five percent (5%) if in the judgment of the Architect the work is progressing satisfactorily, and on progress payments thereafter there shall be retained ten percent (10%) of the approved amounts until final completion and acceptance of all Work covered by the Contract, including the completion of all corrective or punch list items. The Contractor will be required to provide a Consent of Surety to Reduction in or Partial Release of Retainage (AIA Document G707A), before reduction in retainage will be considered.

9.6.11 Final payment will be made provided the Work has been completed, the Contract fully performed and a final certificate for payment has been reviewed and approved by Architect and Construction Manager.

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1.39 PARAGRAPH 9.7 - FAILURE OF PAYMENT

A. In the fourth / fifth lines, delete “or awarded by binding dispute resolution”.

1.40 PARAGRAPH 9.8 - SUBSTANTIAL COMPLETION

A. 9.8.1 Modify as follows:

Add at the end of the Subparagraph: "The Work will not be considered substantially complete until all project systems included in the Work are operational as designed and scheduled, all designated or required inspections, certifications, permits, approvals, licenses and other documents from any governmental Authority Having Jurisdiction thereof necessary for the beneficial use and occupancy Project are received, designated instruction of Owner's personnel has been completed, and all final finishes within the Contract are in place. In general, the only remaining Work shall be minor in nature so that the Owner can occupy the building on that date and the completion of the Work by the Contractor would not materially interfere or hamper the Owner's (or those claiming by, through or under the Owner) normal operations. Contractor recognizes that normal operations require the use and occupancy of the Work by students and faculty without interruption and that any punchlist or corrective work shall be done at times when the Work is not so occupied. As a further condition of substantial completion acceptance, the Contractor shall certify that all remaining Work will be completed within thirty (30) consecutive calendar days or otherwise as agreed upon following the date of substantial completion.

B. Supplement Paragraph 9.8.2, as follows:

.1 The Architect's Certificate of Substantial Completion shall be subject to the Owner's final approval.

C. Supplement Paragraph 9.8.3, as follows:

.1 The Contractor shall complete all items attached to the "Certificate of Substantial Completion" within thirty (30) calendar days of issuance of same. If not completed, the Owner may proceed to carry out the Work in accordance with Paragraph 2.4 of the General Conditions. The Owner will suffer financial loss if the project is not substantially complete on the date set forth in the Contract Documents. The Contractor (and the Contractor's Surety) shall be liable for and pay to the Owner the sums hereinafter stipulated and fixed, agreed as liquidated damages for each calendar day of delay until the work is substantially complete.

1.41 PARAGRAPH 9.10 - FINAL COMPLETION AND FINAL PAYMENT

A. 9.10.1 Add the following at the end of the Paragraph:

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All warranties and guarantees required pursuant to the Contract Documents shall be assembled and delivered by the Contractor to the Owner as part of the final application for payment. The final Certificate for Payment will not be issued by the Architect until all warranties and guaranties have been received, appropriately transferred to, and accepted by the Owner.

B. Supplement Paragraph 9.10.1, as follows:

.1 The Architect's Certificate of Final Completion shall be subject to the Owner's final approval.

1.42 HVAC CONTRACTOR AS OWNER'S SAFETY REPRESENTATIVE

A. Supplement Paragraph 10.1 "Safety Precautions and Programs", as follows:

10.1.1 The HVAC Contractor shall provide all necessary temporary enclosures, guard rails, barricades etc. to adequately protect all workers and public from possible injury.

10.1.2 The HVAC Contractor shall be responsible for the general safeguarding of the Project, for gaining compliance with the safety requirements from all other Contractors and parties engaged in operations at the site, and shall act as the Owner's representative with regard to all safety inspections required and shall perform all necessary functions for this purpose. The Contractor shall designate a "Site Safety Officer".

1.43 PARAGRAPH 10.2 - SAFETY OF PERSONS AND PROPERTY

A. Supplement Paragraph 10.2.8, as follows:

.1 The Contractor shall promptly report in writing to the Owner, Architect and Construction Manager all accidents arising out of or in connection with the Work which caused death, personal injury or property damage, giving full details and statements of any witnesses. In addition, if death, serious personal injury or serious property damage is caused, the accident shall be reported immediately by telephone or messenger to the Owner, Architect and Construction Manager.

B. Supplement Paragraph 10.2 "Safety of Persons and Property", as follows:

10.2.9 Contractor is required to follow and enforce the work rules set forth below. Failure to comply with or enforce any of these rules will be grounds for suspension and / or termination of the Contractor:

.1 No use of alcoholic beverages prior to or during working hours. Anyone found impaired will be escorted from the Project site.

.2 No use of illegal drugs or prescription medications which could induce drowsiness or otherwise impair perception or performance. Use of illegal drugs may result in prosecution to the fullest extent of the law. Any warning

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associated with use of prescription drugs must be complied with, particularly warning against operation of machinery and equipment.

.3 No horseplay or rough-housing will be allowed.

.4 No sexual, racial, ethnic harassment, or similar conduct will be tolerated.

.5 All employees shall use proper sanitation habits, including use of toilet facilities and garbage cans.

.6 All employees shall dress in clothing appropriate for the work they are to perform. All personnel are to wear hardhats, safety shoes, glasses, gloves, masks or respirators, noise protection devices, and other protective clothing and equipment as required by OSHA standards.

.7 All equipment is to be properly stored and / or secured at the end of the work day if it is to remain idle for greater than one hour.

.8 All personnel are to be made aware of the availability of Safety Data Sheets (SDS) for materials used at the Project site. This information is available from the Contractor using the product. The Contractor shall maintain a copy of all SDS forms at the construction site office for all personnel to review.

1.44 LOST OR STOLEN ITEMS

A. Supplement Article 10 "Protection of Persons and Property", as follows:

10.5 Lost or Stolen Materials

The Contractor shall protect all materials and equipment for which they are responsible, which is stored at the Project Site for incorporation in the Work, or which has been incorporated into the Work. They shall replace all such materials and equipment which may be lost, stolen or damaged at their expense, whether or not such materials or equipment have been entirely or partially paid for by the Owner.

1.45 INSURANCE

A. Supplement Paragraph 11.1.1, as follows:

.1 Certificate of Insurance shall be submitted within ten (10) business days upon notification of award of Contract.

B. Supplement Paragraph 11.1 “Contractor’s Liability Insurance”, as follows:

11.1.5 Contractor's liability insurance must be maintained until the final Certificate of Payment is issued pursuant to Paragraph 9.10.1 and Completed Operations Insurance is in effect.

11.1.6 Insurance specified to be provided by the Contractor under Paragraph 11.1 shall be on an occurrence basis, as follows:

.1 The Contractor shall take out and maintain during the life of this Contract commercial general liability insurance, covering any and all bodily injury, including accidental death, as well as claims for property damage arising out of or in connection with the Work performed hereunder, whether such Work

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be performed by the Contractor or by any Subcontractor or by anyone directly or indirectly employed by either of them.

.1 The policy shall name the Owner, the Architect, the Construction Manager and their consultants and agents and employees as additional insureds.

.2 The Contractor shall take out and maintain comprehensive automobile liability insurance, including coverage for all owned, non-owned and hired vehicles, covering bodily injury and property damage.

.1 The policy shall name the Owner, the Architect, the Construction Manager and their consultants and agents and employees as additional insureds.

.3 Contractual liability insurance as applicable to the Contractor's obligations under Paragraph 3.18 of the AIA General Conditions and A132 Exhibit A Insurance and Bonds.

.4 Workers' Compensation Insurance of not less than statutory limits.

.5 Completed Operations Insurance written to the limits specified for liability insurance in AIA 132 - 2019, Exhibit A, Article A.3 - Contractor’s insurance and Bonds. Coverage shall be required from the date of the start of Beneficial Occupancy until two years after the issuance date of Final Certificate for Payment.

.6 Certificates of insurance must be submitted on the ACORD Form, Certificate of Insurance.

.7 The Contractor shall either:

.1 require each of their Subcontractors to procure and to maintain during the life of their Subcontracts, Subcontractor's Public Liability and Property Damage, of the type and in the same amounts as specified in the preceding paragraph, or

.2 insure the activities of their Subcontractors under their respective policies.

1.46 PARAGRAPH 11.4 - LOSS OF USE, BUSINESS INTERRUPTION, AND DELAY IN COMPLETION INSURANCE

A. 11.4 Delete the second sentence in its entirety.

1.47 PARAGRAPH 11.5 - ADJUSTMENT AND SETTLEMENT OF INSURED LOSS

B. Delete Paragraph 11.5.1 and substitute the following:

11.5.1 Owner as trustee shall, upon the occurrence of an insured loss, give bond for the proper performance of the Owner's duties. The Owner shall deposit in a separate account, any money so received, and shall distribute it in accordance with such agreement as the parties in interest may reach. If after such loss no other special agreement is made, replacement of damaged work shall be covered by an appropriate change order.

C. Delete Paragraph 11.5.2 and substitute the following:

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11.5.2 The Owner, as trustee, shall have power to adjust and settle any loss with the insurers unless one of the parties in interest shall object in writing within five (5) business days after the occurrence of loss to the Owner's exercise of this power.

1.48 PARAGRAPH 12.1 - UNCOVERING OF WORK

A. 12.1.1 Add "or Contract Sum" at the end of the Paragraph.

1.49 PARAGRAPH 12.2 - CORRECTION OF WORK

A. 12.2.1 Add the following at the end of the Paragraph:

If prior to the date of Substantial Completion, the Contractor, a Subcontractor or anyone for whom either is responsible, uses or damages any portion of the Work, including, without limitation, mechanical, electrical, plumbing and other building systems, machinery, equipment or other mechanical device, the Contractor shall cause each such item to be restored to "like new condition" at no expense to the Owner.

B. 12.2.2.1 Add the following to the end of the Paragraph:

“If payments then or thereafter due to the Contractor are not sufficient to cover such amount, the Contractor, or their Surety, shall pay the difference to the Owner. The appropriate reduction shall be an amount equal to the entire cost of replacing the work performed with work originally specified and intended."

1.50 PARAGRAPH 12.3 - ACCEPTANCE OF NONCONFORMING WORK

A. 12.3.1: Add the following sentence to the end of the Paragraph:

“This Subparagraph relates exclusively to the knowing acceptance of nonconforming work by the Owner. It has no applicability to work accepted by the Owner, Architect or Construction Manager without the knowledge that such work fails to conform to the requirements of the Contract Documents.”

1.51 PARAGRAPH 13.1 - GOVERNING LAW

A. In the first line, delete everything after “located”.

B. Supplement Paragraph 13.1 "Governing Law", as follows:

13.1.1 Contractor must comply with codes, ordinances, rules, regulations, orders and other legal requirements of public authorities, utility companies, National Board of Fire Underwriters, and others which bear on performance of the Work. Deliver to the Owner certificates and other required legal evidence and proof of compliance with the above.

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1.52 PARAGRAPH 13.4 - TESTS AND INSPECTIONS

A. 13.4.1 Delete the last two (2) sentences in their entirety.

B. 13.4.2 In lines 5 and 6, add “and Owner” after the word "Architect".

C. 13.4.3 Add the following at the end of the Paragraph:

The Contractor also agrees that the cost of testing services required for the convenience of the Contractor in their scheduling and performance of the Work and the cost of testing services related to remedial operations performed to correct deficiencies in the Work shall be borne by the Contractor.

1.53 PARAGRAPH 14.1 - TERMINATION BY THE CONTRACTOR

A. Delete Paragraph 14.1.2 in its entirety and substitute the following:

14.1.2 If one of the above reasons exist, the Contractor may, upon fourteen (14) calendar days written notice to the Owner, Construction Manager and Architect, terminate the Contract, unless this reason is cured prior to the expiration of the notice, and recover from the Owner payment of Work properly executed in accordance with the Contract Documents (the basis for such payment shall be as provided in the Contract) and for payment for cost directly related to Work thereafter performed by Contractor in terminating such Work, including reasonable demobilization and cancellation charges provided said Work is authorized in advance by Construction Manager, Architect and Owner.

1.54 PARAGRAPH 14.2 - TERMINATION BY THE OWNER FOR CAUSE

A. Delete Paragraph 14.2 in its entirely and substitute the following:

14.2 TERMINATION OF CONTRACT

14.2.1 Owner May Suspend Work:

.1 Owner may, at any time and without cause, suspend the Work or any portion thereof for a period of not more than ninety (90) calendar days by notice in writing to Contractor, Construction Manager and Architect which shall fix the date on which Work shall be resumed. Contractor shall resume the Work on the date so fixed. Contractor will be allowed an increase in the Contract Price or an extension of the Contract Time, or both, directly attributable to any suspension if they make a claim therefor as provided in Articles 11 and 12.

14.2.2 Owner May Terminate:

.1 Upon the occurrence of any one or more of the following events:

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.2 If Contractor is adjudged a bankrupt or insolvent, "subject to the provision of the National Bankruptcy Act and specifically 11 U.S.C., Paragraph 365.

.3 If Contractor makes a general assignment for the benefit of creditors.

.4 If a trustee or receiver is appointed for Contractor or for any of Contractor's property.

.5 If Contractor files a petition to take advantage of any debtor's act, or to reorganize under the bankruptcy or similar laws.

.6 If Contractor repeatedly fails to supply sufficient skilled workers or suitable materials or equipment.

.7 If Contractor repeatedly fails to make prompt payments to Subcontractors for labor, materials or equipment.

.8 If Contractor disregards laws, ordinances, rules regulations or orders of any public body having jurisdiction.

.9 If Contractor disregards the authority of the Architect.

.10 If Contractor otherwise violates in any substantial way any provisions of the Contract Documents, Owner may after giving Contractor and their Surety seven days' written notice, terminate the services of Contractor, exclude Contractor from the site and take possession of the Work and of all Contractor's tools, appliances, construction equipment and machinery at the site and use the same to the full extent they could be used by Contractor (without liability to Contractor for trespass or conversion), incorporate in the Work all materials and equipment stored at the site or for which Owner has paid Contractor but which are stored elsewhere, and finish the Work as Owner may deem expedient. In such case Contractor shall not be entitled to receive any further payment until the Work is finished. If the unpaid balance of the Contract Price exceeds the direct and indirect costs of completing the Work, including compensation for additional professional services, such excess shall be paid to Contractor. If such costs exceed such unpaid balance, Contractor shall pay the difference to Owner. Such costs incurred by Owner shall be verified by Architect and incorporated in a Change Order, but in finishing the Work, Owner shall not be required to obtain the lowest figure for the Work performed.

.11 Where Contractor's services have been so terminated by Owner, the termination shall not affect any rights of Owner against Contractor then existing or which may thereafter accrue. Any retention or payment of moneys due Contractor by Owner will not release Contractor from liability.

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.12 Upon seven days' written notice to Contractor and Architect, Owner may without cause and without prejudice to any other right or remedy, elect to abandon the Work and terminate the Agreement. In such case, Contractor shall be paid for all Work executed and any expense sustained plus reasonable termination expenses.

1.55 PARAGRAPH 15.1 - CLAIMS

A. Supplement Paragraph 15.1.5 as follows:

After the first sentence, add: "Said notice shall itemize all claims and shall contain sufficient detail and substantiating data to permit evaluation of same by Owner, Architect and Construction Manager. No such claim shall be valid unless so made."

At the end of the Subparagraph, add: "Any change in the Contract Sum resulting from such claim shall be authorized only by Change Order or Construction Change Directive, as the case may be."

1.56 RESOLUTION OF CLAIMS AND DISPUTES

A. Delete the last sentence in Paragraph 15.2.5.

B. Delete Paragraph 15.2.6 in its entirety.

C. Delete Paragraph 15.2.6.1 in its entirety.

1.57 PARAGRAPH 15.3 - MEDIATION

A. Delete Paragraph 15.3 “Mediation”, in its entirety.

1.58 PARAGRAPH 15.4 - ARBITRATION

A. Delete Paragraph 15.4 "Arbitration” in its entirety and substitute the following:

15.4 - LITIGATION

15.4.1 The Owner and Contractor agree that all claims, disputes and other matters in question between the parties arising out of or relating to the Project or this Contract or breaches thereof, shall be heard in a Court of competent jurisdiction venued in the project's County, New Jersey.

END OF SECTION 00800

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SECTION 00850 - CONTRACT DRAWINGS

1.1 All Drawings listed on Drawing No. G001, "Cover Sheet, Drawing Index and Abbreviations" dated September 28, 2025, unless otherwise revised or amended (via Addenda, Bulletin, etc.), shall form a part of the Bid Documents.

END OF SECTION 00850

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SECTION 00860 - LAWS GOVERNING PUBLIC WORK

PART 1 - GENERAL

1.1 GENERAL CONDITIONS

A. The paragraphs below supplement the AIA A232 - General Conditions. Attention is called, but not limited, to the following Laws Governing Public Work.

1.2 STATE SALES AND USE TAX EXEMPTION

A. Supplement paragraph 3.6 "Taxes" as follows:

3.6.1 As a New Jersey governmental entity, the Board of Education is exempt from the requirements under New Jersey state sales and use tax (N.J.S.A. 54:32B-1 et seq.), and does not pay any sales or use taxes. Bidders should note that they are expected to comply with the provisions of said statute and the rules and regulations promulgated thereto to qualify them for examinations and reference to any and all labor, services, materials and supplies furnished to the Board of Education. Contractors may not use the Board's tax identification number to purchase supplies, materials, service or equipment, for this project.

.1 A Contractor may qualify for a New Jersey Sales Tax Exemption on the purchase of materials, supplies and services when these purchases are used exclusively to fulfill the terms and conditions of the Contract with the Board of Education. All Contractors are referred to New Jersey Division of Taxation-Tax Bulletin S&U-3 and in particular, Contractor's Exempt Purchase Certificate (Form ST-13). Again, Contractors are not permitted to use the Board's tax identification number to purchase supplies, materials, services of equipment.

1.3 MUNICIPAL REQUIREMENTS

A. Supplement paragraph 3.7 "Permits, Fees, Notices and Compliance with Laws" as follows:

3.7.1.1 N.J.S.A. 52:27D-130, provides that local Municipal Construction Enforcing Agency issue required construction permit, perform required inspections during construction, and issue required certificate of occupancy upon completion of Project.

3.7.1.2 N.J.S.A. 52:27D-126C, "No county, municipality, or any agency or instrumentality thereof shall be required to pay any municipal fee or charge in order to secure a construction permit for the erection or alteration of any public building or part thereof from the municipality wherein the building may be located. No erection or alteration of any public building or part thereof by a county, municipality, school board, or any agency or instrumentality thereof shall be subject to any fee, including any surcharge or training fee, imposed by any department or agency of State government pursuant to any law, or rule or regulation, except that nothing

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contained in this section shall be interpreted as preventing the imposition of a fee upon a board of education by either the Department of Education for plan review or by a municipality for the review of plans submitted to it pursuant to the provisions of section 12 of P.L.1975, c.217 (C.52:27D-130).

3.7.1.3 N.J.S.A. 40:55D-8(d), A municipality shall exempt a Board of Education from the payment of any fee related to the Municipal Land Use Law.

3.7.1.4 N.J.S.A. § 52:27d-126e (amended effective July 21, 2017) Waiver of construction permit surcharge or enforcing agency fee for construction, alteration, etc. to promote accessibility by persons with disabilities to existing public or private structures or facilities, or to promote accessibility by veterans with disabilities to their living units.

1.”a. Notwithstanding the provisions of the "State Uniform Construction Code Act," P.L. 1975, c.217 (C.52:27D-1 19 et seq.), or any rules, regulations or standards adopted pursuant thereto, to the contrary, the governing body of any municipality which has appointed an enforcing agency pursuant to the provisions of section 8 of P.L.1975, c.217 (C.52:27D-126) may, by ordinance, provide that no person shall be charged a construction permit surcharge fee or enforcing agency fee for any construction, reconstruction, alteration or improvement designed and undertaken solely to promote accessibility by disabled persons to an existing public or private structure or any of the facilities contained therein.

The ordinance may further provide that a disabled person, or a parent or sibling of a disabled person, shall not be required to pay any municipal fee or charge in order to secure a construction permit for any construction, reconstruction, alteration or improvement which promotes accessibility to his own living unit.

For the purposes of this subsection, "disabled person" means a person who has the total and permanent inability to engage in any substantial gainful activity by reason of any medically determinable physical or mental impairment, including blindness, and shall include, but not be limited to, any resident of this State who is disabled pursuant to the federal Social Security Act (42 U.S.C.416), or the federal Railroad Retirement Act of 1974 (45 U.S.C.231 et seq.), or is rated as having a 60% disability or higher pursuant to any federal law administered by the United States Veterans' Act. For purposes of this paragraph "blindness" means central visual acuity of 20/200 or less in the better eye with the use of a correcting lens. An eye which is accompanied by a limitation in the fields of vision such that the widest diameter of the visual field subtends an angle no greater than 20 degrees shall be considered as having a central visual acuity of 20/200 or less.

b. (1) Notwithstanding the provisions of the "State Uniform Construction Code Act," P.L. 1975, c.217 (C.52:27D-119 et seq.) or any rules, regulations or standards adopted pursuant thereto to the contrary, the governing body of any

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municipality which has appointed an enforcing agency pursuant to the provisions of section 8 of P.L. 1975, c.217 (C.52:27D-126) shall not charge a person who has a service-connected disability declared by the United States Department of Veterans Affairs, or its successor, to be a total or 100% permanent disability that would entitle them to a property tax exemption under section 1 of P.L.1948, c.259 (C.54:4-3.30) or a spouse, parent sibling, or guardian of the disabled veteran, a construction permit surcharge fee or enforcing agency fee for any construction, reconstruction, alteration, or improvement designed and undertaken solely to promote accessibility by the disabled veteran to their own living unit.

(2) A municipality that has granted an exemption from a construction permit surcharge fee or enforcing agency fee pursuant to paragraph (1) of this subsection may apply to the Department of Community Affairs, in accordance with rules and regulations promulgated by the Commissioner of Community Affairs for this purpose, for reimbursement of those exempt fees.

B. Utility Connection Fees: The Contractor shall pay utility connection fees and shall be reimbursed by Owner within thirty (30) days of presentation and Owner approval of receipt for same.

C. Certificates of Occupancy: Contractor shall be responsible for obtaining the/all Certificates of Occupancy.

1.4 TIME INCLUDING COMPLETION

A. Supplement Article 8 "Time" as follows:

8.1.5 The term "completed" in N.J.S.A. 18A:18A-19 shall mean substantial completion as defined in this Article 8.

8.1.6 The term "Working Days" as used to compute the time of completion shall mean Mondays through Fridays, exclusive of the thirteen major yearly holidays, as listed on the official State of New Jersey website, https://www.state.nj.us/nj/about/facts/holidays/

B. Supplement Article 8.3 "Delays and Extension of Time" as follows:

8.3.5 The Contractor agrees that the Owner can deduct from the Contract Price, any wages paid by the Owner to any Inspector or Inspectors necessarily employed by the Owner for any number of days in excess of the number of days allowed in the Specifications for completion of the work.

1.5 NONDISCRIMINATION AND MISCELLANEOUS LABOR PROVISIONS

A. Attention is called to the following which supplement paragraph 13.1 "Antidiscrimination Provisions" as follows:

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13.1.2 N.J.S.A. 10:2-1, Antidiscrimination provisions. Every Contract for or on behalf of the State or any county or municipality or other political subdivision of the State, or any agency of or authority created by any of the foregoing, for the construction, alteration or repair of any public building or public work or for the acquisition of materials, equipment, supplies or services shall contain provisions by which the Contractor agrees that:

a. In the hiring of persons for the performance of work under this Contract or any Subcontract hereunder, or for the procurement, manufacture, assembling or furnishing of any such materials, equipment, supplies or services to be acquired under this Contract, no Contractor, nor any person acting on behalf of such Contractor or Subcontractor, shall, by reason of race, creed, color, national origin, ancestry, marital status, gender identity or expression, affectional or sexual orientation or sex, discriminate against any person who is qualified and available to perform the Work to which the employment relates;

b. No Contractor, Subcontractor, nor any person on their behalf shall, in any manner, discriminate against or intimidate any employee engaged in the performance of Work under this Contract or any Subcontract hereunder, or engaged in the procurement, manufacture, assembling or furnishing of any such materials, equipment, supplies or services to be acquired under such Contract, on account of race, creed, color, national origin, ancestry, marital status, gender identity or expression, affectional or sexual orientation or sex;

c. There may be deducted from the amount payable to the Contractor by the contracting public agency, under this Contract, a penalty of $50.00 for each person for each calendar day during which such person is discriminated against or intimidated in violation of the provisions of the Contract; and

d. This Contract may be canceled or terminated by the contracting public agency, and all money due or to become due hereunder may be forfeited, for any violation of this section of the Contract occurring after notice to the Contractor from the contracting public agency of any prior violation of this section of the Contract.

No provision in this section shall be construed to prevent a board of education from designating that a Contract, Subcontract or other means of procurement of goods, services, equipment or construction shall be awarded to a small business enterprise, minority business enterprise or a women's business enterprise pursuant to N.J.S.A. 18A:18A-51 et seq.

During the performance of this Contract, the Contractor agrees to Mandatory Equal Employment Opportunity Language, as shown in Exhibit B, included with the Bid forms.

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13.1.3 N.J.S.A. 34:11-56.25 et seq., in accordance with which the Contractor(s) and Subcontractor(s) are required to do the following:

.1 Pay to all workers engaged in the performance of services directly upon the work not less than the prevailing rate of wages. In the event that it is found that any worker employed by the Contractor(s) or any Subcontractor(s) has been paid a rate of wage less than the prevailing wage required to be paid by such Contract, the Owner may terminate the Contractor's right to proceed with the work or such part of the work as to which there has been a failure to pay required wages and to prosecute the Work to completion or otherwise.

a. Prime Contractor(s) shall post the New Jersey Department of Labor and Workforce Development - Prevailing Wage Rate Determination in accordance with N.J.S.A. 34:11-56.25 et seq., which establish and enforce a prevailing wage level for workers engaged in the project, based on the effective date where the Contract is to be awarded. This document is to be posted in a prominent and easily accessible place at the site of the work and at such a place or places as are used to pay workers their wages. The prevailing wage rates shall be incorporated into the bid Specification manual as a reference and part of the Contract. A copy of the project's prevailing wage rates, as applicable to this Project, are on file at the Architect's office.

.2 Before final payment, furnish Owner with an Affidavit stating that all workers have been paid in accordance with the New Jersey Prevailing Wage Act.

.3 Keep an accurate record showing the name, craft or trade and actual hourly rate of wages paid to each workman employed by them in connection with their work. Preserve records for 2 years from date of payment.

.4 Upon request, the Contractor(s) and each Subcontractor shall file written statements certifying to the amounts then due and owing to any and all workers for wages due on account of the Work. The statement shall set forth the names of the persons whose wages are unpaid and the amount due to each. These statements shall be verified by the oaths of the Contractor(s) or Subcontractor(s), as the case may be.

1.6 AMERICANS WITH DISABILITIES ACT; FACILITIES FOR PERSONS WITH DISABILITIES

A. The Contractor must comply with all provisions of Title II of the Americans with Disabilities Act (ADA), in accordance with 42 U.S.C. S121.01 et seq. The Owner further recognizes that all Specifications for the construction, remodeling or renovation of any public building shall provide facilities for persons with disabilities. Reference: N.J.S.A. 18A:18A-17.

B. It is further recommended that Bidders are required to read the Americans with Disabilities Act (Act) language form that is included in the bid forms. The form shall be signed to show agreement with the provisions of Title II of the Act and the provisions are to be made a part of the Contract. The signed form shall be submitted

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with the bid proposal. The Contractor is obligated to comply with the Act and to hold the Owner harmless.

1.7 AMERICAN GOODS AND PRODUCTS

A. Supplement Paragraph 13.1 "Governing Law" as follows:

13.1.5 N.J.S.A. 18A:18A-20 et seq., American goods and products to be used where possible. "Each Board of Education shall provide as a condition of the Contract that only manufactured and farm products of the United States, where ever available, be used in the work."

1.8 PAYMENTS TO LISTED SUBCONTRACTORS UNDER SINGLE OVERALL CONTRACT

A. Supplement Paragraph 13.1 "Governing Law" as follows:

13.1.6 Pursuant to N.J.S.A. 18A:18A-18(c), "in every case in which a [single overall Contract is awarded], all payments required to be made under such Contract for Work, goods and services supplied by a Subcontractor may, upon certification of the Contractor of the amount due to the Subcontractor, be paid directly to the Subcontractor."

1.9 ANNUAL DISCLOSURE OF CONTRIBUTIONS TO NEW JERSEY ELECTION LAW ENFORCEMENT COMMISSION (ELEC)

A. N.J.S.A. 19:44A-20.27 establishes a new disclosure requirement for business entities. It requires that, when a business entity has received in any calendar year $50,000 or more in public Contracts with public entities, it must file an annual report with the Election Law Enforcement Commission (ELEC). The report shall disclose any contribution of money or any other thing of value, including an in-kind contribution, or pledge to make a contribution of any kind:

1. To a candidate for or the holder of any public office having ultimate responsibility for the awarding of public Contracts, or,

2. To a political party committee, legislative leadership committee, political committee or continuing political committee.

B. The report will include all reportable contributions made by the business entity during the 12 months prior to the reporting deadline. ELEC will be promulgating a form and procedures for filing commencing in January 2007. ELEC can also impose fines for failure to comply with this requirement.

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1.10 PROMPT PAYMENT ACT

A. The Owner will issue timely payments to Contractors in accordance with the requirements of the Prompt Payment Act, N.J.S.A. 2A:30A-1, et seq. The Bidders are hereby notified that the Owner as a public entity requires all payments to be approved at scheduled public board meetings. The vote on authorization for payments will be made at the first public meeting of the Board following the Board's receipt of the Architect's authorization for payment and paid during the subsequent payment cycle.

1.11 NEW JERSEY DEPARTMENT OF TREASURY

A. N.J.S.A 18A:18A-49.5 Board of Education, Compliance; Report of False Certification.

1. 3.b. If the board determines that a person or entity has submitted a false certification concerning its engagement in prohibited activities in Russia or Belarus pursuant to section 1 of P.L.2022, c.3 (C. 52:32-60.1), the board shall report to the New Jersey Attorney General the name of that person, and the Attorney General shall determine whether to bring a civil action against the person to collect the penalty prescribed in subsection c. of section 1 of P.L.2022, c.3 (C. 52:32-60.1).

B. In accordance with N.J.S.A. 52:32-57 (P.L. 2012, c.25), as amended and supplemented, the following Comprehensive Iran Sanctions, Accountability, and Divestment Act of 2010 will be a condition of the Contract as follows:

1. 3.a. A person or entity that, at the time of bid or proposal for a new Contract or renewal of an existing Contract, is identified on a list created pursuant to subsection b. of this section as a person or entity engaging in investment activities in Iran as described in subsection f. of section 2 of this act, shall be ineligible to, and shall not, bid on, submit a proposal for, or enter into or renew, a Contract with a State agency for goods or services.

C. In accordance with P.L.2012, Chapter 25, C.52:32-58, as amended and supplemented, the following Comprehensive Iran Sanctions, Accountability, and Divestment Act of 2010 will be a condition of the Contract as follows:

1. 4.a. A State agency shall require a person or entity that submits a bid or proposal or otherwise proposes to enter into or renew a Contract to certify, at the time the bid is submitted or the Contract renewed, that the person or entity is not identified on a list created pursuant to subsection b. of section 3 of this act as a person or entity engaging in investment activities in Iran described in subsection f. of this act.

1.12 EQUAL EMPLOYMENT OPPORTUNITIES AND AFFIRMATIVE ACTION

A. Bidders are required to comply with the requirements of N.J.S.A. 10:5-31 et seq. and N.J.A.C. 17:27 et seq.

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1. The construction Contractors shall complete and submit an Initial Project Workforce Report Form AA-201 after notification of award. Proper completion and submission of this Report shall constitute evidence of the Contractor's compliance with the regulations. Failure to submit this form may result in the Contract being terminated. The Contractor also agrees to submit a copy of the Monthly Project Workforce Report, Form AA-202 once a month thereafter for the duration of the Contract to the Department of Labor and Workforce Development and to the Public Agency Compliance Officer. The EEO/AA evidence must be submitted after notification of award, but prior to signing a construction Contract. All Public Agencies must retain the affirmative action evidence in their files for review by the Division.

B. Initial Project Workforce Report - Construction (AA201)

1. In accordance with the requirements of the New Jersey Department of Labor & Workforce Development Construction EEO Compliance Monitoring Unit, the Initial Project Workforce Report-Construction (AA201) document, must be submitted to the Public Agency that awards the Contract and the Department of Labor & Workforce Development Construction EEO Compliance Monitoring Program after notification of award, but prior to signing the Contract. For more information, visit:

https://www.nj.gov/treasury/contract_compliance/documents/pdf/guidelines/pa.pdf

1.13 OFFICE OF THE STATE COMPTROLLER

A. N.J.A.C. 17:44-2.2: Authority to Audit or Review Contract Records

1. Relevant records of private vendors or other persons entering into Contracts with covered entities are subject to audit or review by the Office of the State Comptroller (OSC) pursuant to N.J.S.A. 52:15C-14(d).
   a. The (Prime Contractor) shall maintain all documentation related to products, transactions or services under this Contract for a period of **five (5) years** from the date of final payment. Such records shall be made available to the New Jersey Office of the State Comptroller upon request. N.J.A.C. 17:44-2.2.

B. Contractor/Vendor Requirements-Office of the New Jersey State Comptroller

1. Contractors/Vendors doing business with the Owner is reminded of the following legal requirements pertaining to the Office of the New Jersey State Comptroller:
   a. Access to Relevant Documents and Information - N.J.S.A. 52:15C-14 (d)
      1) Private Vendors or other persons contracting with or receiving funds from a unit in the Executive branch of State government, including an entity exercising executive branch authority, independent State

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authority, public institution of higher education, or unit of local government or Board of Education shall upon request by the State Comptroller provide the State Comptroller with prompt access to all relevant documents and information as a condition of the Contract and receipt of public monies. The State Comptroller shall not disclose any document or information to which access is provided that is confidential or proprietary. If the State Comptroller finds that any person receiving funds from a unit in the Executive branch of State government, including an entity exercising executive branch authority, independent State authority, public institution of higher education, or unit of local government or Board of Education refuses to provide information upon the request of the State Comptroller, or otherwise impedes or fails to cooperate with any audit or performance review, the State Comptroller may recommend to the contracting unit that the person be subject to termination of their Contract, or temporarily or permanently debarred from contracting with the Owner.

1.14 ANTI-BULLYING BILL OF RIGHTS ACT (P.L. 2010.C.122)

A. N.J.S.A. 18A:37-16 provides:

1. A member of a Board of Education, school employee, student or volunteer shall not engage in reprisal, retaliation or false accusation against a victim, witness or one with reliable information about an act of harassment, intimidation or bullying.

2. A member of a Board of Education, school employee, contracted service provider, student or volunteer who has witnessed, or has reliable information that a student has been subject to, harassment, intimidation or bullying shall report the incident to the appropriate school official designated by the school district's policy, or to any school administrator or safe schools resource officer, who shall immediately initiate the school district's procedures concerning school bullying.

3. A member of a board of education or a school employee who promptly reports an incident of harassment, intimidation or bullying, to the appropriate school official designated by the school district's policy, or to any school administrator or safe schools resource officer, and who makes this report in compliance with the procedures in the district's policy, is immune from a cause of action for damages arising from any failure to remedy the reported incident.

4. A school administrator who receives a report of harassment, intimidation, or bullying from a district employee, and fails to initiate or conduct an investigation, or who should have known of an incident of harassment, intimidation, or bullying and fails to take sufficient action to minimize or

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eliminate the harassment, intimidation, or bullying, may be subject to disciplinary action.

1.15 CONTROLLING SILICA EXPOSURES IN CONSTRUCTION

A. Occupational Safety and Health Administration (OSHA) - U.S. Department of Labor: OSHA 29 CFR 1926.1153, 2017.

1. The above referenced guidance advisory document is not a standard or regulation, and it creates no new legal obligations. The document is advisory in nature, informational in content, and is intended to assist employers in providing a safe and healthful workplace. The Occupational Safety and Health Act requires employers to comply with safety and health standards promulgated by OSHA or by a state with an OSHA approved state plan. In addition, pursuant to Section 5(a)(1), the General Duty Clause of the Act, employers must provide their employees with a workplace free from recognized hazards likely to cause death or serious physical harm. Employers can be cited for violating the General Duty Clause if there is a recognized hazard and they do not take reasonable steps to prevent or abate the hazard. However, failure to implement any specific recommendations contained within this document is not, in itself, a violation of the General Duty Clause. Citations can only be based on standards, regulations, and the General Duty Clause.
   a. This guidance document addresses the control of employee exposures to respirable dust containing crystalline silica, which is known to cause silicosis, a serious lung disease, as well as increase the risk of lung cancer and other systemic diseases.
   b. This document provides information on the effectiveness of various engineering control approaches for several kinds of construction operations and equipment, and contains recommendations for work practices and respiratory protection, as appropriate.
   c. OSHA encourages employers to conduct periodic exposure monitoring to confirm that engineering and work practice controls are effective and that appropriate respiratory protection is being used where necessary.

2. The above referenced advisory document can be found at:

   https://www.osha.gov/dsg/topics/silicacrystalline/construction_info_silica.html

1.16 CERTIFICATION OF NON-DEBARMENT FOR FEDERAL GOVERNMENT CONTRACTS

1. Pursuant to N.J.S.A. 52:32-44.1, any natural person, company, firm, association, corporation, or other entity prohibited, or "debarred," from contracting with the federal government agencies, shall also be prohibited from contracting for public work in the State of New Jersey. This prohibition also extends to any affiliate organization(s) held by or subject to the control of an entity of that

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prohibited person or entity.

a. Prior to awarding a Contract for public work, a local units must obtain written certification from the contracting person or entity through the form (Certification of Non-Debarment for Federal Government Contracts, N.J.S.A. 52:32-44.1, attesting to their non-debarment from contracting with federal government agencies.

1.17 CONTRACTOR EMPLOYEES PROCEDURE FOR CRIMINAL HISTORY RECORD CHECKS

1. The Office of Student Protection (OSP) suggests the following recommendation when educational facilities submit Contractor employees (i.e., masons, building and roofing companies) for short-term and long-term projects. The school official, acting as a liaison to the construction Contractor, must share with other school district administrators the names of the company's employees who will be submitting to a criminal record check. This process will assure that employees of the Contractor who have not obtained their approval for employment and are disqualified or ineligible for school employment will be identified as a Contractor service provider employee and not continue to be employed at school facilities and have direct contact with the student population.

2. To ensure compliance with the requirements of N.J.S.A. 18A:6-7.1 et seq., the Chief School Administrator shall direct the school official acting as a liaison to the construction company to obtain a list of individuals who will be employed by the Contractor for the school facility project that will be undergoing a criminal history record check. The liaison shall then provide a copy of this list to the Superintendent's Office and Human Resource Director, as these offices will receive any adverse action correspondence from the OSP related to the criminal history record check process.

3. Upon receipt of disqualification or ineligibility correspondence, the Superintendent's Office or Human Resource personnel shall review the contracted company list in order to determine if the subject of that letter is either a school employee or an employee of any Contract service provider and take the appropriate action.

4. As with any school employee, **no employee of a Contract service provider** shall commence Work at a school facility without having first obtained an approval for employment from the Office of Student Protection.

5. Approvals for employment for these type contracted employees shall be maintained with the liaison and copies forwarded to the Superintendent's Office.

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1.18 LABOR-REGISTERED APPRENTICESHIP PROGRAM

1. As of May 1, 2019, N.J.S.A. 34:11-56.50, et seq. requires Contractors that directly employ craftworkers to participate in a United States Department of Labor-registered apprenticeship program as a condition of initial or renewed PWCR registration. Contracting units are not responsible for verifying Contractor participation in a registered apprenticeship program.

2. A Contractor working on a Public Works Project who directly employs craft workers, must certify to the NJDOL that they participate in a registered Apprenticeship Program for each craft they employ as defined in N.J.S.A. 34:11-56 and CFR , et al.

3. "Registered apprenticeship program" means an apprenticeship program which is registered with and approved by the USDOL, which provides each trainee with combined classroom and on-the-job training in an occupation recognized as an apprenticeable occupation, and which meets the program standards of enrollment and graduation under 29 C.F.R. §29.6. N.J.S.A. 34:11-56.50.

1.19 NEW JERSEY PREVAILING WAGE ACT

1. An Act concerning certain Contracts for public work and amending and supplementing N.J.S.A. 34:11-56.27.

   a. N.J.S.A. 34:11-56.27a. Payment of prevailing wage rates; certification required of certain Bidders; rules and regulations.

      1) a. If a person makes the lowest bid for a Contract with a public body for public work subject to the provisions of the "New Jersey Prevailing Wage Act," P.L.1963, c.150 (C.34:11-56.25 et seq.) and that bid is ten percent or more lower than the next lowest bid for the Contract, the person making the lowest bid shall certify to the public body that the prevailing wage rates required by that act shall be paid. If the Bidder does not provide the certification prior to award of the Contract, the public body shall award the Contract to the next lowest responsible and responsive Bidder. This certification shall be required only when a public body is engaging in competitive bidding for public work.

      b. The Commissioner of Labor and Workforce Development, in consultation with the Division of Local Government Services in the Department of Community Affairs, shall promulgate rules and regulations concerning the standardization of the certification necessary to effectuate the provisions of this section.

      2) N.J.S.A. 34:11-56.27. Required Contract provisions; liability of Contractor and Sureties for excess costs; rules and regulations.

         a. Every Contract in excess of the prevailing wage Contract threshold amount for any public work to which any public body is a party or for public work to be done on property or premises owned

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by a public body or leased or to be leased by a public body shall contain a provision stating the prevailing wage rate which can be paid (as shall be designated by the commissioner) to the workers employed in the performance of the Contract and the Contract shall contain a stipulation that such workers shall be paid not less than such prevailing wage rate. Such Contract shall also contain a provision that in the event it is found that any worker, employed by the Contractor or any Subcontractor covered by said Contract, has been paid a rate of wages less than the prevailing wage required to be paid by such Contract, the public body, the lessee to whom the public body is leasing a property or premises or the lessor from whom the public body is leasing or will be leasing a property or premises may terminate the Contractor's or Subcontractor's right to proceed with the Work, or such part of the Work as to which there has been a failure to pay required wages and to prosecute the work to completion or otherwise. The Contractor and their Sureties shall be liable for any excess costs occasioned thereby to the public body, any lessee to whom the public body is leasing a property or premises or any lessor from whom the public body is leasing or will be leasing a property or premises.

b. Compliance with New Jersey Prevailing Wage Act (N.J.S.A. 34:11-56.25 et seq.)
    1) Every Contractor and Subcontractor performing services in connection with this Project, shall pay all workers a wage rate not less than the published prevailing wage rates, for the locality the work is being performed, as designated by the New Jersey Department of Labor and Workforce Development (NJ DLWD).
    2) Wage rates for the county of the location of the Public Agency (Owner), as published by the State Department of Labor and Workforce Development (DLWD), can be viewed at https://www.nj.gov/labor/wagehour/wagerate/prevailing_wage_determinations.html.
    3) The Contractor must complete and sign the "Prevailing Wage Certification" form included in the bid package and submit with his bid. This form confirms the Contractor's intention to comply with the Act. The Owner may terminate the Contract if Contractor fails to pay workers prevailing wage.
    4) The prevailing wage rates in effect at the time of award, will be included by Owner as a part of the construction Contract.

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SECTION 00870 - MISCELLANEOUS REQUIREMENTS

PART 1 - GENERAL

1.1 JOB SITE MEETINGS

A. Regularly scheduled job meetings shall be held at a location and time convenient to the Owner's representatives, Construction Manager, Architect and the Contractor. The Prime Contractor shall attend such meetings, or be represented by a person in authority who can speak for and/or make decisions for the Contractor.

B. Attendance by the Contractor is mandatory, whether the meetings are weekly, bi-weekly or at whatever interval is determined by the Architect.

1. Unless given prior approval by the Architect, the Prime Contractor will be fined $250.00 for each regularly scheduled meeting for which they are not represented by a person the Contractor has advised the Architect and Construction Manager has authority and who can speak for and/or make decisions for the Contractor. Fine amounts shall be withheld and deducted from the Contract Sum.

1.2 STRUCTURAL SAFETY STANDARDS AND CODES

A. The standards, codes and design data referred to in the New Jersey "State Uniform Construction Code", apply to the work of the Contract, where applicable.

B. Contractor shall comply with all applicable requirements of the Uniform Fire Safety Act N.J.S.A. 52:27D-192 et seq.

1.3 OWNER'S RIGHT TO OCCUPY

A. The Owner reserves the right to occupy any portion of the Project which is ready for occupancy prior to completion and acceptance of the Project, after Local Municipal Construction Enforcing Agency approval.

B. The occupancy of any portion of the Project does not constitute an acceptance of any work nor does it waive the Owner's right to liquidated damages or constitute an acceptance of any Work as the Project will be accepted as a whole and not in units. Prior to such occupancy, however, the Architect, Construction Manager, a representative of the Owner, and the Contractor shall fully inspect the portions of the Project to be occupied, preparing a complete list of omissions of materials, faulty workmanship, or any items to be repaired, torn out or replaced. The Owner will assume responsibility for damage to premises so occupied of any items not on this list when such damage is due to greater than normal wear and tear, but does not assume responsibility for improper or defective workmanship or materials.

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1.4 OWNER'S GENERAL REQUIREMENTS

A. The Owner requires that the Contractor demonstrate a safety and health program/plan, which includes, but is not limited to first aid, fire protection, housekeeping, illumination, sanitation, personal protective equipment, medical, exit, emergency action plans and all other issues required by governmental Agencies Having Jurisdiction over the work of this project.

B. The following Owner's General Requirements shall be enforced during construction and until final completion of the work:

1. No deliveries of construction materials or equipment is to take place during the arrival and departure of students from the/their respective school(s). Verify and coordinate arrival and departure time with the Principal(s).

2. All construction materials and equipment shall be stored behind the construction fence.

3. No smoking on any of the School's Property.

4. All workers must wear shirts at all time.

5. Use of profanity will not be tolerated.

6. The Prime Contractor shall provide identification cards for their Subcontractors, employees, etc.

7. The Contractor shall comply with the requirements of all local ordinances including for noise.

8. The Contractor and their Subcontractors shall not interact with students or staff, other than those identified by the Owner as a representative of the Owner.

1.5 ENVIRONMENTAL PROTECTION

A. Conform to New Jersey Department of Environmental Protection Regulations N.J.A.C. 7:27, sub-chapters 5 and 7 and all other applicable standards.

B. Conform to New Jersey Statute N.J.S.A. 26:2C-9.2 which requires that no person shall construct, install, alter or operate any equipment capable of causing the emission of air contaminants into the open air or control apparatus which prevents or controls the emission of air contaminants until an application has been filed with and approved by the Department of Environmental Protection.

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1.6 RELATIONSHIP OF ARCHITECT AND CONSTRUCTION MANAGER

A. Where reference is made to "Architect" in these Specifications it will in some cases be interpreted as meaning "Construction Manager". Spheres of influence are defined in general as follows:

Architect:

Interpretation of Bid Documents.
Decisions relative to artistic effect.
Review and approval of shop drawings, product data, samples.
Review, recommendation and preparation of change orders.
Receipt of record drawings, operating and maintenance manuals.
Assistance with start-up, adjusting, operating and maintenance.
Review and recommendation of bid breakdown.
Review and approval of applications for progress payments.
Preparation of Punch Lists.
Close-out of Contract and determination of final completion.

Exclusions: Construction means, methods, techniques, sequences or procedures, safety precautions, acts or omissions of Contractors, Subcontractors, or any other persons.

Construction Manager:

Project meetings.
Monitoring of Contractors' work.
Review and approval of bid breakdown (Schedule of Values).
Review and forwarding of applications for progress payments.
Review and recommendations regarding proposed changes.
Administration of Progress Schedule and construction time schedules.
Assist in Preparation of Punch Lists.
Assist in Close-out of contracts and determination of final completion.

Exclusions: Construction means, methods, techniques, sequences or procedures, safety precautions, acts or omissions of Contractors, Subcontractors, or any other persons.

1.8 SEPARATE TRADES COORDINATION

A. The Contractor for HVAC Construction shall install the access doors, sleeves and inserts furnished to them, in the manner, and in the locations designated by the Contractor furnishing sleeves and inserts.

B. The Contractor for HVAC Construction shall provide chases, recesses, and unsleeved openings in new construction work as required to accommodate the work of other Contractors, provided Contractors requiring the chases, recesses, and other openings

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furnish the necessary information regarding size and location in the construction promptly, and in accordance with the established construction schedule, so that the chases, recesses, and other openings can be built-in by the Contractor for HVAC Construction as the HVAC Construction Work progresses.

C. The Contractor for HVAC Construction shall set anchor bolts and other accessories furnished to them, in the manner, and in the locations directed by the Contractor furnishing the anchor bolts and other accessories.

D. The Contractor for HVAC Construction shall provide foundations and supports for equipment furnished under the HVAC Construction Contract, and foundations and supports shown on the HVAC Construction Contract, Drawings for equipment furnished by other Contractors. All other foundations and supports shall be provided by the Contractor requiring the foundations and supports to accommodate the work.

1.9 CERTIFIED PAYROLLS

A. Pursuant to N.J.A.C. 12:60-5.1(c)(1)(i), the Contractor shall furnish to the Owner certified payroll records each payroll period within ten (10) days of the payment of wages, indicating name, craft, social security number and actual hourly rate of wages paid to each worker employed on the project. A certified payroll record is defined as "a payroll record which is attested to by the employer, or a corporate officer of such company, or an authorized agent of the employer."

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SECTION 01010 - SUMMARY OF WORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. The work of this Section applies to all Construction Bid Documents including Drawings, Division 1 - Miscellaneous Requirements Sections and Specifications Sections.

1.2 SUMMARY

A. Section Includes:

1. Project description.
2. Contract scope description.
3. Contractor's use of the premises.
4. Preconstruction meeting.
5. Security procedures.

1.3 PROJECT DESCRIPTION

A. The project consists of the HVAC Equipment Replacement at Princeton Middle School for the Princeton Public Schools, Board of Education, Mercer County, New Jersey.

B. Contract Documents prepared by Fraytak Veisz Hopkins Duthie, P.C. Architects / Planners, (Project Number: FVHD-5607) and their Consulting Mechanical/Electrical Engineer: CM Engineers, LLC, Chester, NJ.

1.4 CONTRACT SCOPE DESCRIPTION

A. The Base Bid work consists of but is not limited to the following:

1. All mechanical and electrical systems.

2. Alterations to existing building where the HVAC Equipment Replacement is indicated including repairs to the existing warrantied EPDM and SBS Modified - roofs and all associated work as indicated on the Drawings

3. Miscellaneous structural steel work under new mechanical HVAC curbs and all additional associated work as indicated on the Drawings.

4. Gypsum board / metal stud bulkhead and suspended acoustical tile ceiling work at the Kitchen area, as indicated on the Drawings.

5. All other indicated work.

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B. Alternate Bids:

1. Alternate Bid No. 1: Removal and Replacement of Existing Rooftop Unit Serving the Boy's Locker Room (HVN-L1)

2. Alternate Bid No. 2: Removal and Replacement of Existing Rooftop Unit Serving the Girl's Locker Room (HVN-L2)

3. Alternate Bid No. 3: Removal and Replacement of Existing Rooftop Unit Serving the CST Suite (AHU-N-2)

C. Single Overall Contract: This Contract includes:

1. All work in accordance with Drawings, Specification and in accordance with Bid Documents.

2. Heating, Ventilating, Air Conditioning and Refrigeration Work includes:
   a. Heating, ventilating, and air conditioning systems as well as the temperature control systems and including all work in accordance with Drawings and Part-5 Specification sections.
      1) Also includes both administrative and coordination responsibilities.
         a) HVAC Contractor is responsible for all coordination between their work and work of all Subcontractors.
      2) Work shall include demolition and removals, as indicated or required, to allow for new construction.
      3) Work shall include reinstallation, cutting, patching, finishing and repair work associated with HVACR work, as indicated or required, including performing work at existing roofs; cutting existing roof decking, provide and install structural steel support, and all other roof flashing work where indicated or required.
         a) Furnishing and installing all required structural framing and supports for roof top mechanical equipment at existing building whether shown or not.
         b) Structural framing shall be as per typical roof framing conditions as shown on Architectural Drawings and/or as per approved shop drawings by the Architect.
         c) Roofing work shall be performed in accordance with requirements of existing roofing system's warranty and the Bid Documents.

3. General Construction Work includes:
   a. Work that is primarily architectural in nature plus work traditionally recognized as general construction in accordance with Drawings and as listed as a part of Part 2 Specification sections, unless otherwise indicated below:
      1) Patching and repair existing wall construction,
      2) Suspended acoustical tile ceiling system replacement, where indicated,
      3) Gypsum board / metal stud construction, where indicated,
      4) All other indicated or required work.

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4. Plumbing System Work includes:
    a. Piping servicing gas piping system and connection of equipment tied into the above type of systems and including all work in accordance with Drawings and Specifications.
        1) Work shall include demolition and removals, as indicated or required, to allow for new construction.
        2) Work shall include reinstallation, cutting, patching, finishing and repair Work associated with Plumbing system Work, as indicated or required, including Work at existing roofs; cutting, alterations, replacement and flashing Work, where indicated or required.
            a) Roofing repair Work shall be performed in accordance with requirements of existing roofing system's warranty and the Bid Documents.

5. Electrical Work includes:
    a. The work necessary for electrical power distribution, lighting, and the connections to equipment tied into such systems, including all work in accordance with Drawings and Specifications.
        1) **Work shall include power distribution and wiring for all indicated electrically operated equipment and fixtures whether shown or not on Drawings.**
        2) Work shall include demolition and removals, as indicated or required, to allow for new construction.
        3) Work shall include reinstallation, cutting, patching, finishing and repair work associate with Electrical work, as indicated or required, including performing work at existing roof(s); cutting existing roof decking, and all other roof flashing work:
            a) Roofing work shall be performed in accordance with requirements of existing roofing system's warranty and the Bid Documents.

1.5 CONTRACTOR'S USE OF THE PREMISES

A. The space available to the Contractor for the performance of the work, either exclusively or in conjunction with others performing other construction as part of the project, is shown on the Drawings.

1. Other areas are off limits to all construction personnel.

B. The following building facilities may not be used by construction personnel:

1. Toilet facilities.
2. Food service facilities, including dining areas.
3. Elevator.

C. The Owner will partially occupy the building during the construction period.

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1. The Owner will endeavor to cooperate with the Contractor's operations when the Contractor has notified the Owner in advance of need for changes in operations in order to accommodate construction operations.

2. Conduct the work so as to cause the least interference with the Owner's operations.

D. Coordinate with Local Authorities as to which routes are capable of handling heavy truck traffic.

E. Signs: Provide signs adequate to direct visitors.

1. Do not install, or allow to be installed, signs other than specified sign(s) and signs identifying the principal entities involved in the project.

F. All deliveries by the Contractor(s) shall be coordinated with the Owner's Representative / Construction Manager, prior to the delivery date.

1.6 PRECONSTRUCTION MEETING

A. A preconstruction meeting will be held at a time and place designated by the Architect/ Construction Manager for the purpose of identifying responsibilities of the Owner's / Architect's / Construction Manager's personnel and explanation of administrative procedures.

B. The Contractor shall also use this meeting for the following minimum agenda:

1. Construction schedule.
2. Use of areas of the site.
3. Delivery and storage.
4. Safety.
5. Security.
6. Cleaning up.
7. Subcontractor procedures relating to:
    a. Submittals.
    b. Change orders.
    c. Applications for payment.
    d. Record documents.

C. Attendees shall include:

1. The Owner / Owner's Representative.
2. The Architect, and any Consultants.
3. Construction Manager.
4. The Prime Contractor and their superintendent.
5. Major Subcontractors, suppliers, and fabricators.
6. Others interested in the work.

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1.7 SECURITY PROCEDURES

A. Limit access to the site and building to persons involved in the work.

B. Provide secure storage for materials for which the Owner has made payment and which are stored on-site.

C. Secure completed work as required to prevent loss.

D. The Contractor, and their employees, will be required to be registered with the Owner's Representative / School's Main Office / Construction Manager Office.

1. The Contractor's personnel and Subcontractors will be required to wear identification badges at all times on the site.

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SECTION 01020 - ALLOWANCES

PART 1 - GENERAL

1.1 DESCRIPTION OF REQUIREMENTS

A. Definitions and Explanations: Certain requirements of the Work related to each allowance are shown and specified in the Bid Documents. The allowance has been established in lieu of additional requirements for that Work, and further requirements thereof (if any) will be issued by change order.

B. The type of allowance scheduled herein for the Work includes the following:

1. Lump sum allowance(s).

C. Selection and Purchase: At the earliest feasible date after the award of the Contract, advise the Architect of the scheduled date when the final selection and purchase of each product or system described by each Allowance must be accomplished in order to avoid delays in the performance of the work. Obtain and submit proposals for the work of each Allowance, as required by the Architect for use in making the final selections; include whatever recommendations for selection may be relevant to the proper performance of the Work. Purchase products and systems as specifically selected (in writing) by the Architect.

1. Submit proposals and recommendations, for the purchase of the products or systems of Allowances, in the form specified for change orders.

D. Change Order Data: Where applicable, include in each change order proposal both the quantity of the products being purchased and the unit cost, along with the total amount of the purchase to be made. Where requested, furnish survey-of-requirements data to substantiate the quantity. Indicate applicable taxes, delivery charges, and amounts of applicable trade discounts.

E. Lump-Sum Allowances: The amounts herein specified are the net amounts available for purchase of the materials specified, including taxes (if any), and each change order amount shall be based thereon. **All other costs associated with the performance of the work under the Allowance, including but not limited to insurance, storage, handling, overhead, profit, etc., are not a part of the allowance, and shall be included in the base bid Contract amount.**

1. In the event the actual purchase amount of materials, plus taxes (if any) exceeds the specified allowance, the Owner will pay the excess; should the actual purchase amount, plus taxes (if any) be less than the specified Allowance, the Contractor shall credit the Owner with the difference.

2. The actual purchase amount, plus taxes (if any) shall be substantiated by certified bills of sale to be submitted with the change order.

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F. Change Order Mark-Up: Except as otherwise indicated, comply with the provisions of the General Conditions and the Supplementary General Conditions.

G. Excess Materials: Submit invoices or delivery slips to indicate the actual quantities of materials delivered to the site for use in fulfillment of each allowance. Where economically feasible, and so requested by the Architect, return unused materials to the manufacturer/supplier for credit to the Owner, after the installation has been completed and accepted. Where not economically feasible to return for credit, and so requested by the Architect, prepare unused materials for the Owner's storage, and delivery to the Owner's storage space as directed. Otherwise, disposal of excess materials is the Contractor's responsibility.

1.2 SCHEDULE OF ALLOWANCE(S)

A. General: The following allowance amount is included in the Contract Sum, for the corresponding unit of Work as described.

1. Heating Ventilating and Air Conditioning Work
   a. A sum of **$50,000.00** for work not specifically shown on the Drawings, the Work shall be performed as directed in the field.

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SECTION 01030 - ALTERNATE BIDS

PART 1 - GENERAL

1.1 PROCEDURE FOR ALTERNATE BIDS

A. Each Bidder shall submit on the Proposal Form, all Alternate Bids applicable to the work under their bid. Alternate Bids shall state the difference in price as "additions to" or "deductions from" the Base Bid, unless otherwise noted, for the substitution, omission, or addition of the following materials, items or construction from that shown and specified.

B. The Alternate Bids, when accepted, become part of the Contract.

C. Each Bidder shall carefully check the Drawings and Specifications to determine the extent of each Alternate Bid required.

D. Alternate Bids shall include all overhead and profit applicable thereto.

E. Alternate Bids shall reflect the increase or decrease in cost of all Work of every name and nature which may be affected thereby and no subsequent claims for extras by reason of the Contractor's failure to observe this requirement will be considered.

F. The description herein for each Alternate Bid is recognized to be incomplete and abbreviated, but implies that each change must be complete for the scope of work affected. Refer to applicable Specification sections and to applicable Drawings, for specific requirements of the Work, regardless of whether references are so noted in description of each Alternate Bid. Coordinate related Work and modify surrounding Work as required to properly integrate with the Work of each Alternate Bid. It is recognized that descriptions of Alternate Bids are primarily scope definitions, and do not necessarily detail full range of materials and processes needed to complete the Work as required.

G. Except as otherwise described or approved, materials and workmanship of the Alternate Bids shall conform to the requirements specified under the various sections of the Specifications for similar items of Work.

H. Where methods of construction, materials, finishes or details of installation required by the various Alternate Bids differ from the requirements shown on the Drawings or specified for corresponding items, the alternate construction, materials, etc. will be subject to approval by the Architect.

I. The Contractor shall submit shop drawings and samples for the Work under each accepted Alternate Bid for approval in conformance with requirements specified for submittals in both Part 1, AIA Document A232 and Section 00800 - Supplementary General Conditions.

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J. The following Alternate Bids shall apply to single overall bids, and must be included in the Bidder's Proposal(s).

1.2 ALTERNATE BIDS - HEATING, VENTILATING & AIR CONDITIONING WORK

A. **Alternate Bid No. 1: Removal and Replacement of Existing Rooftop Unit Serving the Boy's Locker Room (HVN-L1)**

State the amount to be added to the base bid to include all equipment, labor and materials required for the removal and replacement of the existing rooftop unit serving the Boy's Locker Room (HVN-L1). The scope of work includes the removal of existing rooftop unit, installation of the new rooftop unit, modifications to the HW piping, ductwork, controls, gas piping, power, roof repairs, ceiling lighting, srteel supports and associated Work, as shown on various Drawings and as indicated in various Specification sections.

B. **Alternate Bid No. 2: Removal and Replacement of Existing Rooftop Unit Serving the Girl's Locker Room (HVN-L2)**

State the amount to be added to the base bid to include all equipment, labor and materials required for the removal and replacement of the existing rooftop unit serving the Girl's Locker Room (HVN-L2). The scope of work includes the removal of existing rooftop unit, installation of the new rooftop unit, modifications to the HW piping, ductwork, controls, gas piping, power, roof repairs, ceiling lighting, srteel supports and associated Work, as shown on various Drawings and as indicated in various Specification sections.

C. **Alternate Bid No. 3: Removal and Replacement of Existing Rooftop Unit Serving the CST Suite (AHU-N-2)**

State the amount to be added to the base bid to include all equipment, labor and materials required for the removal and replacement of the existing rooftop unit serving the CST Suite (AHU-N-2). The scope of work includes the removal of existing rooftop unit, installation of the new rooftop unit, removal and replacement of VAV boxes, modifications to the HW piping, ductwork, controls, gas piping, power, roof repairs, ceiling, lighting, steel supports and associated Work, as shown on various Drawings and as indicated in various Specification sections.

END OF SECTION 01030

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SECTION 01040 - COORDINATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. The work of this Section applies to all Construction Bid Documents including Drawings, Division 1 - Miscellaneous Requirements Sections and Specifications Sections.

1.2 REQUIREMENTS INCLUDED

A. Coordination of submittals.

B. Coordination meetings.

C. Coordination drawings.

D. Coordination of project closeout.

E. Administrative/supervisory personnel.

F. Coordination of trades.

G. Coordination of space.

H. Coordination of field measurements and field conditions.

1.3 GENERAL REQUIREMENTS

A. The Prime HVAC Contractor shall coordinate their activities with the activities of other (Sub)Contractors and work performed by others.

B. If necessary, inform each party involved, in writing, of procedures required for coordination; include requirements for giving notice, submitting reports and attending meetings.

1. Inform the Architect when coordination of their Work is required.

1.4 COORDINATION OF SUBMITTALS

A. Coordinate and correlate the submittals on each work item and on interrelated Work items to ensure their timeliness, completeness, consistency, compatibility and compliance with the Bid Documents.

B. Prepare and submit special coordination drawings where close and careful coordination of information is required for proper fabrication or installation of

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materials, products or equipment by separate entities. Coordination drawings may also be required where limited space availability necessitates close and careful coordination for efficient and proper installation of different components.

1. Show interrelationships of components shown on separate shop drawings.

2. Indicate required installation sequences.

3. (See also the requirements for the general coordination drawings under paragraph 1.7 below).

C. Coordinate any request for substitution to ensure compatibility of its space requirements, its operating characteristics and elements and its effects on other Work. Prior to proposing a substitution for any item, verify that its size, configuration, supports and connections will coordinate with all other Work and that it will fit within the allotted space while allowing for proper operating, maintenance and circulation space.

D. Comply with requirements for requests for submittal of substitution indicated in AIA A232 and Section 00800.

1.5 COORDINATION MEETINGS

A. The HVAC Work Contractor shall hold additional coordination meetings and conferences with Prime Subcontractors and others involved in the Work as needed to ensure coordination of Work.

1. Notify the Architect and Construction Manager of such coordination meetings.

B. Regular project site meetings shall be in accordance with Sections 00870 and 01200.

1.6 COORDINATION OF TRADES

A. Coordinate construction activities included under various sections of these Specifications to ensure efficient and orderly installation of each part of the Work and to prevent interferences among parts of the Work. Coordinate work items and construction operations included under different sections of the Specifications that are dependent upon one another for proper installation, connection and operation.

1. Where installation of one part of the Work is interrelated with installation of other components, schedule construction activities in the sequence required to obtain the best results.

2. Where availability of space is limited, coordinate installation of different components to prevent interferences and to ensure proper accessibility for required maintenance, service and repair.

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3. Make adequate provisions to accommodate items scheduled for later installation.

B. Where necessary, prepare memoranda outlining special procedures required for coordination. Include such items as required notices, reports and attendance at meetings. Distribute these coordination memoranda to all parties involved in the work being coordinated.

1. Prepare similar memoranda for the Owner and other Contractor(s) where coordination with construction or operations by them is required.

2. Provide copies of such coordination memoranda to the Architect.

C. Coordinate the scheduling and timing of required administrative activities with other construction activities to avoid conflicts and ensure orderly progress of the Work. Administrative activities include:

1. Preparation and updating of schedules.
2. Preparation and processing of submittals.
3. Preparation and processing of requests for information.
4. Project meetings.
5. Testing and inspection activities.
6. Project close-out activities.

1.7 COORDINATION DRAWINGS

A. General Requirements: Prepare coordination drawings where limited space available may cause conflicts in the locations of installed products, and where required to coordinate installation of products.

1. In preparing the coordination drawings, large scale details as well as cross and longitudinal sections shall be developed as required to fully delineate all conditions. Particular attention shall be given to the locations, size and clearance dimensions of equipment items, shafts and similar features.

2. In preparing the coordination drawings, minor changes in duct, pipe or conduit routing that do not affect the intended functions may be made as required to avoid space conflicts, when mutually agreed, but items may not be resized or exposed items relocated or other features affecting the function or aesthetic effect of the building changed without the Architect's prior review and acceptance. It should be assumed that no changes shall be made in any wall or chase locations, ceiling heights, door swings or locations, or window or other openings. If conflicts or interferences cannot be satisfactorily resolved, then the Architect shall be notified and their determinations obtained. Any conflicts or design deviations shall be specifically identified on Drawings submitted to them.

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3. The coordination drawings shall be submitted, in all cases, in ample time to avoid construction delay. The coordination drawings submitted may lack complete data in certain instances pending receipt of shop drawings, but sufficient space shall be allotted for the items missing, as evidenced by the sign-off of the party responsible for the missing items. When the missing information is available, it shall be promptly incorporated in the composite drawings.

4. Cost and time impacts of relocating any duct, pipe, conduit, or other material that has been installed without proper coordination between all trades involved will be charged to the responsible party. If any improperly coordinated Work or Work installed that is not in conformance with the approved coordination composites necessitates additional Work, the cost and time impacts of all such additional Work shall likewise be the responsibility of the affective party. The Architect shall be the sole judge in determining all responsibilities.

5. All changes in the scope of work due to revisions formally issued and approved shall be shown on the composite drawings.

6. All work on the coordination drawings shall be performed by a competent draftsperson and shall be clear and fully legible. The Architect shall be the judge of the legibility of the composite drawings.

7. In particular, prepare the following coordination drawings:
   a. Drawings showing all piping, duct, cabletrays, electrical ductbanks, and similar items, but not electrical conduit less than 4 inches in diameter.
   b. Complete architectural, mechanical and electrical reflected ceiling layouts, (including ductwork, conduits, piping, lighting, etc.).
   c. Special coordination drawings are to be provided for the following:
      1) Where space is limited, show plan and cross-section dimensions of space available, including structural obstructions and ceilings as applicable.

B. The Prime HVAC Contractor shall prepare the coordination drawings required for their work.

C. Layout Drawings: As soon as practical, but in no case starting later than thirty (30) days after the HVACR Contractor has received the notice to proceed, the HVACR Contractor shall prepare layout drawings of all duct work and piping at not less than 3/8" scale.

1. These drawings shall show registers, grilles, diffusers and similar features, as well as locations of all units, valves, dampers and other items requiring access for service and maintenance.

2. The drawings shall also show roof, floor and wall openings, reflected ceiling layouts, structural beams, framing and miscellaneous structural steel supports,

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ceiling heights, walls, floor to floor dimensions, structural columns, doors and other major architectural and structural features as shown on the architectural and structural drawings and as per approved shop drawings.

F. Composite Drawings:

1. The HVACR Contractor shall produce a mylar, two (2) prints and one (1) sepia of each layout drawing as described.

2. The sepia will be retained for their records while the mylar and two (2) prints will be formally transmitted to the Plumbing Subcontractor, with copies of the transmittal to the Architect.

3. These drawings must be hand delivered or sent via a reliable mailing service that provides receipts and guarantees 24-48 hour delivery.
   a. Common carrier mailing will not be acceptable.

4. The Plumbing Subcontractor, upon receipt of these mylars, will transfer the work from their shop drawings to the mylars, at the same time indicating where conflicts exist between their work and the work already shown on the mylars.

   a. The Plumbing Work Subcontractor will utilize a green colored pencil for the layout of their work.
   b. After completion, the Plumbing Subcontractor will forward the mylars and two (2) prints to the Electrical Subcontractor while retaining a sepia for their records.
   c. The same mailing procedures will pertain.

5. The Electrical Work Subcontractor will duplicate the procedure outlined above, utilizing orange colored pencil for their layout.
   a. After completion the Electrical Subcontractor will forward the Drawings as specified above to the HVAC Contractor, retaining a sepia for their records.

6. The HVAC Contractor shall then have the Instrumentation (ATC) Work Subcontractor review the completed composite drawings and attest to their concurrence that their work can be installed without conflict.

7. The HVAC Contractor will schedule coordination meetings on the job site to review the coordination drawings.
   a. These meetings will be attended by a representative from each of the Subcontractors involved in the coordination process.
   b. At these meetings, these Subcontractors will indicate where conflicts exist and resolve the conflicts through mutual agreement.
   c. Should an impasse occur, the Architect will determine the resolution.

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8. When all conflicts are resolved, the Subcontractors will indicate their agreement by signing these final composite drawings.

9. The Drawings shall be signed-off by each of the involved Subcontractors, indicating their awareness of and agreement with the indicated routings and layouts and their interrelationship with the adjoining or contiguous Work. The HVAC Contractor shall then sign these final composite drawings.

10. The final composite drawings shall be completed and signed-off by all parties no later than ninety (90) calendar days after the HVAC Contractor has received the Notice to Proceed.
    a. After the final composite drawings have been agreed upon and signed by the Subcontractors and by the HVAC Contractor, the HVAC Contractor shall provide and distribute prints to each of the Subcontractors, and four (4) sets of prints to the Architect / Construction Manager for reference and record purposes.
    b. The record copies of the signed-off final composite drawings shall be retained by the HVAC Contractor and each Subcontractor as working reference documents.
    c. All shop drawings, prior to their submittal to the Architect / Construction Manager, shall be compared with these composite drawings and developed accordingly.
        1) Any revisions to the composite drawings which may become necessary during the progress of the work shall be noted by the HVAC Contractor and by each affected Subcontractor and shall be neatly and accurately recorded on their record copies.

11. The HVAC Contractor and each Subcontractor shall be responsible for the up-to-date maintenance of their record copies of the composite drawings and for having one up-to-date copy available at the site.

12. The composite drawings, incorporating any subsequent changes thereto, shall be utilized by the HVAC Contractor or each Subcontractor in the development of their record drawings.

13. Following sign-off of the final composite drawings, no deviations will be permitted without prior review and acceptance by the Architect.
    a. Unauthorized deviations will be subject to removal and correction at no additional cost to the Owner.

14. In areas where no HVAC work occurs, but where other mechanical and electrical installations are required, each involved Subcontractor shall be responsible for their own Work and shall cooperate, as directed by the HVAC Contractor, in preparing similar layout and composite drawings.

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1.8 COORDINATION OF PROJECT CLOSEOUT

A. Coordinate completion and clean-up work and administrative activities in preparation for Substantial Completion and occupancy of the Work or of designated portions of the Work.

B. After Owner occupancy, coordinate access for completion or correction of the Work not in conformance with the Bid Documents to minimize disruption of Owner's activities.

C. Assemble and coordinate closeout submittals specified in Section 01700.

1.9 REQUIRED ADMINISTRATIVE / SUPERVISORY PERSONNEL

A. General: In addition to the other administrative and supervisory personnel required for the performance of the Work, the Prime Contractor shall provide specific coordinating personnel as specified herein.

B. Project Manager / Superintendent: A full time on site Project Manager, with a recommended minimum of eight (8) years' experience, including project management experience on a similar type of projects.

1. The HVAC Contractor shall provide a full-time staff member or members, (Project Manager/Superintendent), experienced in coordination of mechanical and electrical Work on projects of this type and scale, including administration and supervision.
    a. Responsibilities:
        1) Coordinate all mechanical, plumbing, and electrical Work, and coordinate that Work with the other Work of the project.
        2) Where space is limited, coordinate arrangement of mechanical, electrical, and other Work to fit.
        3) Coordinate cutting and patching activities and sequencing.
        4) Coordinate use of temporary facilities.
    b. Prepare coordination drawings where required and where indicated.
    c. Provide information to the entity preparing the progress schedule.
    d. Participate in progress meetings; report progress, changes required in schedules, and unresolved problems.
    e. Review submittals for compliance with the Bid Documents and for coordination with other Work.
    f. Check field dimensions, clearances, relationships to available space, and anchors.
    g. Check compatibility with equipment, other work, electrical characteristics, and operational control requirements.
    h. Check motor voltages and control characteristics.
    i. Coordinate controls, interlocks, wiring of switches, and relays.
    j. Coordinate wiring and control diagrams.
    k. Review the effect of changes on other Work.

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l. Obtain and distribute installation data on each item of equipment requiring mechanical or electrical connections; include:
    1) Electrical power characteristics.
    2) Control wiring requirements.
m. Observe and maintain record of tests and inspections.
n. Observe Work for compliance with Bid Documents and notify the applicable Contractor in writing of observed defects in the Work.
o. Coordinate and observe startup and demonstration of equipment and systems.
p. Coordinate maintenance of record documents.
q. Assist the Architect / Construction Manager with final inspections.

2. Prime Subcontractor(s) shall provide staff for coordination between trades. Staff requirements noted above represent the minimum full-time on site staff required.

3. Staffing is subject to Owner / Architect / Construction Manager's approvals.

4. Staff members may not be removed or replaced without Owner/Architect's approvals.

5. Staff name(s), duties and resumes are to be submitted to the Architect for approval within fifteen (15) days of the Notice to Proceed.

1.10 COORDINATION OF TRADES

A. Coordinate Work with other trades to eliminate any possible interference before any piping, conduit, equipment, devices, controls, supports, ductwork and fixtures are installed.

B. Where multiple items of mechanical and electrical equipment, devices, piping, conduits, supporting metal work, hangers, pull boxes, outlets, ductwork or controls are shown on any of the Bid Documents of the various trades in the same location, coordinate and adjust items to fit within designated location(s).

C. Provide and install necessary offsets, bends, turns and modifications in piping, ductwork, conduit and devices required to install the Work without interference with that of other trades or structure, without additional cost to the Owner.

D. For products specified to be furnished by one Contractor and installed by another Contractor:

1. Contractor specified to furnish (or remove) product shall be responsible for delivery to (or return from) the project site, and shall pay transportation costs.

2. Contractor specified to install product shall be responsible for coordinating product delivery, loading or unloading, storing, protecting and installing product as required.

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1.11 COORDINATION OF SPACE

A. Coordinate use of available space and sequence of installation for work (e.g., mechanical and electrical work) which is indicated diagrammatically or schematically on the Drawings. Prevent physical interference of components. Follow routing shown for pipes, ducts and conduits, taking into account the limitations of available space; make runs parallel with lines of building. Utilize space efficiently to ensure proper installations (including installation of other Work) and accessibility for maintenance, service and repairs.

B. Detailed Drawings of proposed departures from spatial arrangements or locations indicated in the Bid Documents, due to field conditions or other causes, shall be submitted to the Architect for review. No such departures shall be made without prior review by the Architect.

C. Where required for coordination, the Architect will have the authority to order, as changes in the Work, changes in locations and sizes of piping, ductwork conduit, raceways and ducts. Such changes shall be made without adjustment to the Contract Sum or Contract Time.

D. Field verify measurements of existing items and work which precedes each sequence. Ensure proper fit and location.

E. In finished areas, conceal pipes, ducts and wiring in the construction.

F. Coordinate locations of fixtures and outlets with finish elements.

1.12 COORDINATION OF FIELD MEASUREMENTS AND FIELD CONDITIONS

A. Prior to ordering materials or equipment or performing work, the Contractor and/or Subcontractors shall verify Bid Documents and submittal of dimensions and weights affecting their Work and Subcontractor's Work associated with field measurements and field conditions at the project site, and shall be responsible for their accuracy and correctness.

B. Differences discovered from dimensions or weights indicated in the Bid Documents or submittals shall be submitted in writing to the Architect for review, before proceeding with the Work.

C. Commencing Work implies acceptance of surfaces, areas, preceding Work and other field conditions, and verification of dimensions, by the (Sub)Contractor(s).

D. No Change Order will be issued in cases where discrepancies in dimensions are discovered after Work has been commenced or where the Contractor has failed to properly investigate and take into account field measurements and existing field conditions.

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E. Inspection of Conditions: Require the Installer of each major component to inspect both substrate and conditions under which their work is to be performed. Do not proceed until unsatisfactory conditions have been corrected in an acceptable manner.

F. Recheck measurements and dimensions, before starting each installation.

1. Submit to the Architect for review any change in dimensions shown on the Bid Documents or submittals affecting physical size, shape or location of any part of the Work, whether due to field conditions or other causes.

G. Passage of Equipment:

1. Establish passage clearances required to deliver, install and erect mechanical and electrical equipment. Wherever necessary, provide equipment in sections or knocked down in order to allow passage of equipment through available openings.

2. Where there is not sufficient clearance for passage of mechanical or electric equipment, deliver, install and protect such equipment before confining walls, and steel Work are erected. Schedule and coordinate this Work with the Work of other trades.

3. If any structure, equipment or system must be altered to allow passage of equipment, the person or entity responsible for providing that structure, equipment, or system shall restore it to its original condition, without additional cost to the Owner.

4. Manufacturer's Instructions: Comply with manufacturer's installation instructions and recommendations, to the extent that those instructions and recommendations are more explicit or stringent than requirements contained in Bid Documents.

H. Verify the size of shafts and chases, the adequacy of partition thickness and the clearance in double partitions and hung ceilings for proper installation of Work.

1. (Sub)Contractors shall cooperate in arranging their Work with other (Sub)Contractors whose Work is in the same spaces.

2. The amount of space occupied by each trade's Work shall be kept to the minimum required.

3. Arrange for chases, slots and openings in other building components during progress of construction, to allow for timely installation of Work.

I. Inspect materials or equipment immediately upon delivery and again prior to installation. Reject damaged and defective items.

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J. Provide attachment and connection devices and methods necessary for securing Work. Secure Work true to line and level. Allow for expansion and building movement.

K. Provide all appropriate structural supports, hangers, wires for roof, floor and wall and associated assemblies which include but are not limited to materials, finishes, equipment, fixtures, piping, raceways, mechanical and electrical components. This Work shall be in conformance with requirements of the Bid Documents whether or not indicated by a reference in Specification or as may be in detail shown on Drawings and schedules.

L. Visual Effects: Provide uniform joint widths in exposed Work. Arrange joints in exposed Work to obtain the best visual effect. Refer questionable choices to the Architect for final decision.

M. Install each component during weather conditions and construction status that will ensure best possible results. Isolate each part of completed construction from incompatible material as necessary to prevent deterioration.

N. Coordinate temporary enclosures with required inspections and tests, to minimize necessity of uncovering completed construction for that purpose.

O. Where mounting heights are not indicated:

1. Install individual components at standard mounting heights recognized within the industry for the particular application indicated. Refer questionable mounting height decisions to the Architect for final decision.

2. Install mechanical and electrical systems, materials and equipment to provide maximum possible headroom. Maintain maximum headroom and space conditions. Where headroom or space conditions (less than 8'-0") appear inadequate, the Architect shall be notified before proceeding with the Work.

END OF SECTION 01040

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SECTION 01050 - ALTERATIONS, CUTTING, PATCHING AND REFINISHING WORK

PART 1 - PRODUCTS

1.1 RELATED DOCUMENTS

A. The Work of this Section applies to all Construction Bid Documents including Drawings, Division 1 - Miscellaneous Requirements Sections and Specifications Sections.

1.2 DESCRIPTION

A. Work included: Alterations, removals and demolition required for this Work include, but are not necessarily limited to:

1. Alterations, cutting, patching, removal and preparation Work to be done as noted on Drawings, as required, to complete construction.

2. Patching and refinishing of existing surfaces damaged or left unfinished as a result of this Work, including site work, existing ground surfaces, concrete surfaces, bituminous paving surfaces, etc.

3. Asbestos
   a. The Contractor shall review and familiarize themselves with the Owners Asbestos Hazard Emergency Response Act (AHERA) report prior to the commencement of any demolition activity. Also, the Contractor will be provided with an inventory of all ACM (Asbestos Containing Materials) in the building where they are working, and will be required to sign a form (provided by the Owner) that they are in receipt of the inventory.
   b. Contractor is herein cautioned that asbestos may be within concealed spaces where Work will be taking place. The Contractor shall immediately notify the Owner if any concerns or conditions arise in regards to potential asbestos containing building materials (ACBM's) in order that the Owner may verify same and take appropriate action. The Contractor shall not proceed with the Work until the material has been abated and air sampling clearance levels have been achieved as set forth by the Owner's Environmental Consultant.
   c. The Contractor shall employ personnel who are trained in accordance with OSHA workplace standards as they pertain to asbestos.
   d. **The Architect / Engineer has no authority or professional involvement relative to the hazardous material/asbestos removal or disposal phase for this project and are not available for questions and/or direction in this regard. The hazardous material/ asbestos reference is included as a convenience for the Owner, and the Architect accepts no responsibility nor liability for the accuracy of information, Bidders conclusions, methods to be used, nor for any aspect of approvals required by the Contractor in undertaking and completing this project insofar as**

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hazardous material/asbestos is concerned. The Contractor shall direct any/all questions and concerns to the Owners Hazardous Material Abatement Consultant.

e. Worker and Community Right to Know Act Requirements
   1) It is required that the Contractor and/or Subcontractors comply with all of the requirements of HAZCOM 2012 and New Jersey Right To Know (RTK) program. Prime Contractor is responsible for ensuring that containers of substances belonging to the Contractor and/or Subcontractors that are stored at the Owner's facility are properly RTK labeled. Refer to N.J.A.C. 8:59-5.10.
   2) Surveys of hazardous substances stored at the Owner's facility by the Contractor and/or Subcontractor are to be provided to the Owner of the facility. Refer to N.J.A.C. 8:59-2.2(h).
   3) Material Safety Data Sheets (MSDS) and/or Safety Data Sheets (SDS) from manufacturers must be provided to the Owner for all products present at, purchased for, and brought on site by Contractors and/or Subcontractors to the Owner's facility. Refer to N.J.A.C. 8:59-2.2(1).
   4) Contractor and/or all Subcontractors must submit, prior to starting any Work, a copy of their approved Hazard Communication Plan - 29 CFR 1910.1200.

4. This project shall be subject to the requirements of the EPA "Renovation, Repair and Painting" rule including the following:
   a. The Contractor must be lead safe trained and certified. The Contractor will be required to submit a copy of their EPA certificate prior to the start of the Work.
   b. The Contractor shall provide the Owner with a copy of the EPA's Lead Hazard Management information pamphlet "Renovate Right-Important Lead hazard Information for Families, Child Care Providers and Schools" prior to the start of any renovation Work. The Contractor shall have the Owner sign a pre-renovation disclosure form confirming receipt of the pamphlet.
   c. The Contractor shall at all times employ lead safe practices as identified in the rules.

5. This project shall be subject to the requirements of the EPA rules on diesel exhaust and off-site particulate dust, including the following:
   a. Diesel exhaust contributes the highest cancer risk of all air toxics in New Jersey and is a major source of NOx within the state. Therefore, per NJ DEP recommendations, construction projects involving non-road diesel construction equipment operating in a small geographic area over an extended period of time shall implement the following measures to minimize the impact of diesel exhaust:
      1) All on-road vehicles and non-road construction equipment operating at, or visiting, the construction site shall comply with the three minute idling limit, pursuant to N.J.A.C. 7:27-14 and N.J.A.C. 7:27-15. Contractor shall purchase "No Idling" signs to post at the site to

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remind Subcontractors to comply with the idling limits. Signs are available for purchase from the Bureau of Mobile Sources at 609/292-7953 or http://www.stopthesoot.org/sts-no-idle-sign.htm.

2) All non-road diesel construction equipment greater than 100 horsepower used on the project for more than ten days shall have engines that meet the USEPA Tier 4 non-road emission standards, or the best available emission control technology that is technologically feasible for that application and is verified by the USEPA or the CARB as a diesel emission control strategy for reducing particulate matter and/or NOx emissions.

3) All on-road diesel vehicles used to haul materials or traveling to and from the construction site shall use designated truck routes that are designed to minimize impacts on residential areas and sensitive receptors such as hospitals, schools, daycare facilities, senior citizen housing, and convalescent facilities.

b. Contractor will be liable for the effects of off-site particulate dust and/or odors during construction and shall take steps to minimize the impact of air pollution from these activities.

6. **Hot Work Permit**:

a. A Hot Work Permit is required for any operation involving "open flame" or "producing heat and/or sparks".

1) This Work includes, but is not limited to, welding, brazing, cutting, grinding, soldering, thawing pipe, torch-applied roofing, or chemical welding.

b. Before initiating hot Work, ensure precautions are in place as required by NFPA 51B and ANSI Z49.1.

c. Make sure an appropriate fire extinguisher is readily available.

B. Related Sections:

1. Section 00870 - Miscellaneous Requirements.

2. Section 01010 - Summary of the Work.

3. Section 01020 - Allowances.

4. Section 01040 - Coordination.

5. Section 02070 - Selective Demolition.

6. **Refer to the Mechanical and Electrical Drawings for the related Specification requirements and limitations applicable to cutting and patching individual parts of the Work.**

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1.3 SUBMITTALS

A. Cutting and Patching Proposal: Submit a proposal describing procedures at least 10 days before the time cutting and patching will be performed, requesting approval to proceed. Include the following information:

1. Location and Extent of Work: Submit key plan indicating room location where Work to take place. Describe cutting and patching, indicate methods and show how they will be performed.

2. Changes to Existing Construction: Describe anticipated results. Include changes to structural elements and operating components as well as changes in building's appearance and other significant visual elements.

3. Products: List products to be used and firms or entities that will perform the Work. Provide samples and field mock-up as indicated or requested by the Architect.
   a. Samples and field mock-up shall match existing surfaces and colors.
   b. Obtain Architect's approval prior to proceeding with Work.

4. Schedule and Dates: Provide Work schedule, indicate when cutting and patching will be performed.

5. Utilities: List utilities that cutting and patching procedures will disturb or affect. List utilities that will be relocated and those that will be temporarily out of service. Indicate how long service will be disrupted.

6. Structural Elements: Where cutting and patching involve adding reinforcement to structural elements, obtain approval of cutting and patching proposal before cutting and patching. Approval does not waive right to later require removal and replacement of unsatisfactory Work.

1.4 QUALITY ASSURANCE

A. Structural Elements: Do not cut and patch structural elements in a manner that could change their load-carrying capacity or load-deflection ratio.

B. Operational Elements: Do not cut and patch operating elements and related components in a manner that results in reducing their capacity to perform as intended or that results in increased maintenance or decreased operational life or safety. Coordinate cutting of operating elements with other plumbing, HVAC, electrical or other trades.

C. Miscellaneous Building Elements: Do not cut and patch any building elements or related components in a manner that could change their operation, load-carrying capacity, that results in reducing their capacity to perform as intended, or that results in increased maintenance or decreased operational life or safety.

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D. Visual Requirements: Do not cut and patch construction in a manner that results in visual evidence of cutting and patching. Do not cut and patch construction exposed on the exterior or in occupied spaces in a manner that would, in Architect's opinion, reduce the building's aesthetic qualities. Remove and replace construction that has been cut and patched in a visually unsatisfactory manner.

1. Engage experienced installers or fabricators for all Work.

E. Cutting and Patching Conference: Before proceeding, meet at Project site with parties involved in cutting and patching, including mechanical and electrical trades. Review areas of potential interference and conflict. Coordinate procedures and resolve potential conflicts before proceeding.

F. Mock-Ups: Provide mock-ups for Architect / Construction Manager approval for each proposed patching method. Do not proceed with patching Work until obtaining of approvals from the Architect / Construction Manager.

1.5 WARRANTY

A. Existing Warranties: Remove, replace, patch, and repair materials and surfaces cut or damaged during cutting and patching operations, by methods and with materials so as not to void existing warranties. Confirm existing warranties with Owner prior to starting of Work.

PART 2 - PRODUCTS

2.1 MATERIALS

A. General: Comply with requirements specified in other Sections of these Specifications.

B. Existing Materials: Use materials identical to existing materials. For exposed surfaces, use materials that visually match existing adjacent surfaces to the fullest extent possible.

1. If identical materials are unavailable or cannot be used, use materials that, when installed, will match the visual and functional performance of existing materials.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine surfaces to be cut and patched and conditions under which cutting and patching are to be performed.

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1. Compatibility: Before patching, verify compatibility with and suitability of substrates, including compatibility with existing finishes or primers.

2. Proceed with installation only after unsafe or unsatisfactory conditions have been corrected.

B. Inspection:

1. Prior to start of any Work the HVAC Contractor shall verify all existing work area conditions; building lines, lengths, corners and all other dimensions.
   a. HVAC Contractor shall engage a Licensed Professional Land Surveyor (PLS) to perform layout of the mechanical equipment elements. Copies of all surveys performed by the HVAC Contractor shall be submitted to the Architect in two copies and shall include layout Drawings and data sheets.

2. The HVAC Contractor shall submit information and survey to Subcontractor(s), the Architect / Construction Manager for all required coordination of new construction and all other related Work.

3. Prior to Work of this section, verify information and survey submitted by the HVAC Contractor, carefully inspect the existing conditions and verify that materials and surfaces to be altered or removed are the same as noted on the Drawings.

C. Discrepancies:

1. In the event of discrepancy of existing conditions, surfaces, etc., immediately notify the Architect and the Construction Manager.

2. Do not proceed with installation in areas of discrepancy until all such discrepancies have been fully resolved.

3.2 PREPARATION

A. Temporary Support: Provide temporary support of Work to be cut.

B. Protection: Protect existing construction during cutting and patching to prevent damage. Provide protection from adverse weather conditions for portions of Project that might be exposed during cutting and patching operations.

C. Adjoining Areas: Avoid interference with use of adjoining areas or interruption of free passage to adjoining areas.

D. Existing Services: Where existing services are required to be removed, relocated, or abandoned, bypass such services before cutting to avoid interruption of services to occupied areas.

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3.3 PERFORMANCE

A. General: Employ skilled workers to perform cutting and patching. Proceed with cutting and patching at the earliest feasible time, and complete without delay.

1. The HVAC Contractor shall provide cutting, patching, relocations, and or re-installations of existing construction to provide for installation of other components or performance of other construction associated with their Work, and subsequently patch and finish, as required, to restore surfaces to their original condition. Work shall be performed whether or not shown on Drawings.

2. The HVAC Contractor shall provide all required and necessary pockets in masonry walls and in existing roof assemblies including all required cutting, and preparation Work to allow for installation of new structural steel framing, supports, lintels, bearing plates, etc. The HVAC Contractor shall subsequently patch, as required, to restore and prepare surfaces to receive new finishes.
   a. Cutting roof decking, roof flashing, patching and associated roofing Work in existing building, where no roofing replacement is indicated or required, shall be performed by the Prime Contractor for Work included under their Contract.

3. All repairing, patching, piecing out, filling in, restoring and refinishing shall be neatly done by craftsworkers skilled in their respective trades and completed in proper manner to leave same in condition satisfactory to the Architect.

4. All new Work shall be installed plumb, level, true, and shall be shimmed as required to cover any irregularities in substrates.

B. Cutting:

1. Before cutting is started in any location the Contractor shall carefully investigate conditions as to human and structural safety, existing piping, wiring and items concealed, and wherever same interfere with the Work they shall be properly relocated, rerouted or removed as the case may be, at no increase to Contract price.

2. Cut existing construction by sawing, drilling, breaking, chipping, grinding, and similar operations, including excavation, using methods least likely to damage elements retained or adjoining construction. If possible, review proposed procedures with original Installer; comply with original Installer's written recommendations.

3. In general, use hand or small power tools designed for sawing and grinding, not hammering and chopping. Cut holes and slots as small as possible, neatly to size required, and with minimum disturbance of adjacent surfaces. Temporarily cover openings when not in use.

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4. Existing Finished Surfaces: Cut or drill from the exposed or finished side into concealed surfaces.

5. Masonry: Cut using a cutting machine, such as an abrasive saw or a diamond-core drill.

6. Do not disturb any structural Work, plumbing, steam, gas, or electric Work without approval of Architect.

7. Mechanical and Electrical Services:
   a. Cut off pipe or conduit in walls or partitions to be removed shall be performed by respective trade.
   b. Cap, valve, or plug and seal remaining portion of pipe or conduit to prevent entrance of moisture or other foreign matter after cutting shall be performed by respective trade.

8. Proceed with patching after construction operations requiring cutting are complete.
   a. Remove, cut, alter, replace, patch and repair existing Work as necessary to install new Work.

9. Existing Work disturbed or removed as a result of performing required new Work, shall be patched, repaired, reinstalled or replaced with new Work, and refinished and left in as good condition as existing before commencing Work.

C. Patching: Patch construction by filling, repairing, refinishing, closing up, and similar operations following performance of other Work. Patch with durable seams that are as invisible as possible. Provide materials and comply with installation requirements specified in other Sections of these Specifications.

1. Inspection: Where feasible, test and inspect patched areas after completion to demonstrate integrity of installation.

2. Field Mock-up: Prepare field mock-up of proposed restoration method as requested or required by the Architect. Obtain Architect's approval prior proceeding with actual Work.

3. Exposed Finishes: Restore exposed finishes of patched areas and extend finish restoration into retained adjoining construction in a manner that will eliminate or minimize evidence of patching and refinishing.

4. Floors and Walls: Where walls, partitions and/or built-in cabinets that are removed extend one finished area into another, patch and repair floor and wall surfaces in the existing and new space. Provide an even surface of uniform finish, color, texture, and appearance. Remove existing floor and wall coverings and replace with new materials, if necessary, to achieve uniform color and

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appearance.

a. Where patching occurs in a painted surface, apply primer and intermediate paint coats over the patch and apply final paint coat over entire unbroken surface containing the patch. Provide additional coats until patch blends with adjacent surfaces.

5. Ceilings: Cut, remove, patch, repair, install new including hanging assemblies and finish ceilings as necessary to provide an even-plane surface of uniform appearance.

6. Exterior Building Enclosure: Patch components in a manner that restores enclosure to a weathertight condition.

3.4 CLEAN-UP

A. Areas where demolition is in progress within or adjacent to Owner occupied areas shall be broom cleaned at the end of each working day.

B. Do not burn materials or debris on premises.

C. Do not allow demolished materials to accumulate inside or outside of existing building.

D. Remove from the site all rubbish and debris resulting from Work of this section.

E. If the Contractor fails to clean-up their debris within 24 hours, the Owner has the right to clean-up the debris left by the Contractor. All associated clean-up costs, incurred by the Owner, will be back-charged to the Contractor.

3.5 PROTECTION

A. Contractor shall provide all other necessary temporary enclosures, guardrails, barricades, etc. to adequately protect all workers and public from possible injury. Provide all necessary temporary partitions, enclosures, coverings of approved materials and construction for the exclusion of weather and for confining dust and debris.

B. Contractor shall be responsible for the protection of the existing building, facilities and improvements within the areas where Work is being done. Any disturbance or damage to the Work, the existing building, and improvements, equipment or any impairments of facilities resulting from their Work, shall be promptly restored, repaired, or replaced by the responsible Contractor at no extra cost to the Owner.

C. Adequate protection of persons and property shall be provided at all times, including Saturdays, Sundays and holidays, and during time Work is being performed and after working hours. Protection shall include barricade fencing, traffic control, dust partitions, weather protection and other means, as required.

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D. Preserve and protect all existing vegetation such as trees, shrubs, and grass on or adjacent to the site and along access to the site. Be responsible for all unauthorized cutting or damaging of trees and shrubs, including damage due to careless operation of equipment, stock-piling of materials or tracking of grass areas by equipment.

3.6 SALVAGE

A. Partial Removal: Items of salvable value to Contractor may be removed from structure as Work progresses. Salvage items must be transported from site as they are removed.

1. Storage or sale of removed items on site will not be permitted.

B. Items designated on Drawings or in Specifications to remain the property of the Owner, or to be reused, shall be removed, and securely stored with care to prevent damage. Repair or replace such items damaged in removal.

C. Before transporting non-designated, removed items from the site, contact Architect/ Construction Manager for decision as to what items if any are to remain the property of the Owner. Items retained by the Owner will be transported by them to their storage area.

3.7 STANDARDS

A. All demolition Work shall be performed in accordance with the applicable rules and regulations and the Codes and Ordinances of local, State and Federal authorities, and in accordance with the requirements of public utility corporations.

B. Work shall satisfy requirements of the Occupational Safety and Health Act of 1970 with amendments.

C. Work not affected by more stringent requirements of regulatory agencies shall satisfy the provisions of ANSI-A10.6-2006 (R2016) - American National Standard Safety Requirements for Demolition.

D. Confine the movement and storage of vehicles, equipment and materials to such routes and locations as may be designated by the Owner and Architect.

E. The building and grounds will be maintained in a clean and orderly manner so as to conform with all local fire safety regulations and in accordance with the latest editions of the Safety Code of the National and State Board of Fire Underwriters.

3.8 INGRESS, EGRESS AND CIRCULATION

A. The Prime HVAC Contractor shall be responsible for performing their construction activities in such manner to maintain ingress and egress for visitors and occupants of

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Owner-occupied areas and to continuously maintain all required emergency exits from and circulation between existing facilities. Passageways for emergency exits shall be kept continuously free from debris, construction equipment, tools, stockpiles or materials, and other hazards to speedy evacuation. The Contractor shall provide all necessary temporary Work as prudence and good practice may dictate and in accordance with Applicable Law and Authorities Having Jurisdiction to obtain and maintain all such ingress, egress and circulation requirements. The Prime Contractor shall be responsible for providing coordination of this temporary Work between Subcontractor(s), as directed by the Architect. All temporary Work shall be removed when no longer required.

3.9 NON-INTERFERENCE WITH OWNER'S OPERATIONS

A. Work under this Contract will be performed when the existing building is occupied. Coordinate with Owner's schedule and operation, obtain Owner's / Construction Manager's approval prior to proceeding with Work.

B. Contractor shall acquaint themself with the general character of the Owner's operations prior to commencing Work and shall schedule their Work to avoid interference therewith. The sequence of alteration operations shall be in accordance with a schedule of Contract operations approved by the Owner and Architect and Construction Manager.

C. The Contractor shall not start Work until the schedule has been approved in writing by the Architect, Construction Manager and the Owner.The Contractor shall not perform Work in occupied areas without giving the Owner 72 hours written notice of their intention to Work in occupied areas.

D. The Contractor shall expedite placing orders and submission of shop drawings for equipment required to complete Work under this Contract to ensure delivery of all equipment with adequate time allowed to complete the installations to conform to the project completion date.

END OF SECTION 01050

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SECTION 01151 - UNIT PRICES

PART 1 GENERAL

1.1 PROCEDURE

A. Bidder shall insert on the Proposal Form, all Unit Prices applicable to the Work under their bid. Unit Prices will be used as the basis for computing "additions to" or "deductions from" the Contract Price for extra work and for work countermanded, reduced or omitted.

B. Except as otherwise provided in the General Conditions, the Unit Prices when accepted, adjusted or established by the Contract shall remain binding and irrevocable for the entire period of the Contract, regardless of the quantities of Work ordered or required under such Unit Prices.

C. The acceptance of the Unit Price is on condition that the general character of the material and workmanship required for any Work related thereto shall be equivalent to corresponding Work as shown and specified, and that all costs, overhead and profit, as well as all incidental Work required in connection therewith, has been included in the Unit Price.

1.2 UNIT PRICES - GENERAL CONSTRUCTION: Materials in Place.

Replacement of existing damaged or deteriorated metal decking $_____ per sq. ft.

Replacement of existing wet or deteriorated roof insulation board $_____ per sq. ft.

Replacement of existing damaged or deteriorated wood nailers/blocking or framing, including removal of existing deteriorated wood, furnishing and installing new galvanized anchor bolts, expansion bolts at 4'-0" o.c. or nails through existing construction to remain: $**2.90** per board ft.

a. 2x4 for the above work $_____ per lin. ft.
b. 2x6 for the above work $_____ per lin. ft.
c. 2x8 for the above work $_____ per lin. ft.
d. 2x10 for the above work $_____ per lin. ft.
e. 2x12 for the above work $_____ per lin. ft.

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SECTION 01200 - PROJECT MEETINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplemental Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section specifies administrative and procedural requirements for project meetings including but not limited to:

1. Pre-Construction Conference
2. Pre-Installation Conferences
3. Coordination Meetings
4. Progress Meetings

B. Construction Schedule requirements is specified in another Division 1, Section.

1.3 PRE-CONSTRUCTION CONFERENCE

A. The Architect will schedule a pre-construction conference and organizational meeting at the Project site or other convenient location no later than fifteen (15) calendar days after execution of the Agreement and prior to commencement of construction activities. Conduct the meeting to review responsibilities and personnel assignments.

B. Attendees: The Owner, Architect, Construction Manager and their consultants, the Prime Contractor and their superintendent, major Subcontractors, manufacturers, suppliers and other concerned parties shall each be represented at the conference by persons familiar with and authorized to conclude matters relating to the Work.

C. Agenda: Discuss items of significance that could effect progress including such topics as:

1. Tentative construction schedule
2. Critical work sequencing
3. Designation of responsible personnel
4. Procedures for processing field decisions and Change Orders
5. Procedures for processing Applications for Payment
6. Distribution of Bid Documents
7. Submittal of Shop Drawings, Product Data, and Samples
8. Preparation of record documents
9. Use of the premises
10. Office, Work, and storage areas

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11. Equipment deliveries and priorities
12. Safety Procedures
13. First Aid
14. Security
15. Housekeeping
16. Working hours

1.4 PRE-INSTALLATION CONFERENCES

A. The Prime Contractor to conduct a pre-installation conference at the site before each construction activity that requires coordination with other construction. The installer and representative of manufacturers and fabricators involved in or affected by the installation, and its coordination or integration with other materials and installations that have preceded or will follow, shall attend the meeting. Advise the Architect and Construction Manager of scheduled meeting dates.

1. Review the progress of other construction activities and preparations for the particular activity under consideration at each pre-installation conference, including requirements for:
    a. Bid Documents
    b. Options
    c. Related change orders
    d. Purchases
    e. Deliveries
    f. Shop Drawings, product data and quality control samples
    g. Possible conflicts
    h. Compatibility problems
    i. Time schedules
    j. Weather limitations
    k. Manufacturer's recommendations
    l. Compatibility of materials
    m. Acceptability of substrates
    n. Temporary facilities
    o. Space and access limitations
    p. Governing regulations
    q. Safety
    r. Inspection and testing requirements
    s. Required performance results
    t. Recording requirements
    u. Protection

2. Record significant discussions and agreements and disagreements of each conference along with the approved schedule. Distribute the record of the meeting to everyone concerned, promptly, including the Owner, the Architect and the Construction Manager.

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3. Do not proceed if the conference cannot be successfully concluded. Initiate whatever actions are necessary to resolve impediments to performance of Work and reconvene the conference at the earliest feasible date.

1.5 COORDINATION MEETINGS

A. The HVAC Contractor will conduct project coordination meetings at regularly scheduled times convenient for all parties involved. Project coordination meetings are in addition to specific meetings held for other purposes, such as regular progress meetings and special pre-installation meetings.

B. Request representation at each meeting by every party currently involved in coordination or planning for the construction activities involved.

C. Record meeting results and distribute copies to everyone in attendance and to others affected by decisions or actions resulting from each meeting.

1.6 PROGRESS MEETINGS

A. Regular Progress Meetings: The Construction Manager will schedule and conduct regular progress meetings as follows:

1. Weekly meetings with the Contractor and Subcontractors.

2. Bi-weekly meeting with the Owner, Architect, Contractor and Subcontractors.
   a. Weekly meetings between the Contractor and Subcontractors will be the responsibility of the Contractor and the Architect will not attend.

B. Special Meetings will be conducted as required by the progress of the Work

C. Location of the meetings: Meetings shall be conducted at a location in the school or other site to be determined by the Owner's Representative.

D. Attendance: Attendance at Construction Meetings shall be as follows:

1. The Owner shall be in attendance at bi-weekly meetings and at any special meetings as appropriate to the agenda.

2. The Construction Manager, Architect and their professional consultants, as needed, at bi-weekly meetings and at any special meetings as appropriate to the agenda.

3. The Contractor at all construction meetings.

4. Subcontractors as appropriate to the agenda.

5. Suppliers as appropriate to the agenda.

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6. The Owner's Representative at all construction meetings.

E. Agenda: Review and correct or approve minutes of the previous progress meeting. Review other items of significance that could affect progress. Include topics for discussion as appropriate to the current status of the project.

F. Contractor's Construction Schedule:

1. Review the present and future needs of each entity present, including such items as:
   a. Interface requirements
   b. Time
   c. Sequences
   d. Deliveries
   e. Off-site fabrication problems
   f. Access
   g. Site utilization
   h. Temporary facilities and services
   i. Hours of work
   j. Hazards and risks
   k. Housekeeping
   l. Quality and work standards
   m. Change orders
   n. Documentation of information for payment requests

G. Reporting: No later than three (3) business days after each progress meeting date, distribute copies of minutes of the meeting to each party present and to other parties who should have been present. Include a brief summary, in narrative form, of progress since the previous meeting and report.

H. Schedule Updating: Revise the construction schedule after each progress meeting where revisions to the schedule have been made or recognized. Issue the revised schedule concurrently with the report of each meeting.

I. Attendance by the Contractor is mandatory, whether the meetings are weekly, bi-weekly or at whatever interval is determined by the Architect and the Construction Manager.

1. Unless given prior approval by the Construction Manager / Architect in writing not to attend meetings, Contractor will be fined **$250.00** for each regularly scheduled meeting for which they are not represented by a person in authority who can speak for and/or make decisions for the Contractor.

2. Fine amounts shall be withheld and deducted from the Contract Sum.

END OF SECTION 01200

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SECTION 01325 - CONSTRUCTION SCHEDULE

PART 1 - GENERAL

1.1 SUMMARY

A. Work included: To assure adequate planning and execution of the Work so that the completion of the Work is within the time proposed and allowed in Section 01800 and other documents in the Contract, and to assist the Owner in appraising the reasonableness of the proposed schedule and in evaluating progress of the Work, prepare and maintain the schedules and reports described in this section.

B. Preliminary Construction Schedule ("Construction Summary by Phase") and Phasing Plan:

1. The preliminary project schedule provided herein is intended to be used as a guide by the Contractor during the Bidding and the Construction Phases.

2. The Construction Manager, the Architect and the Owner will not be held liable for the scheduled activity durations identified in the schedule.

3. The Phasing Plan provided with Bid Documents is intended to provide the Contractor with a basis for scheduling construction to satisfy Owner's requirements.

1.2 QUALITY ASSURANCE

A. Qualifications of Scheduling Personnel: Employ a scheduler who is thoroughly trained and experienced in compiling construction schedule data, in analyzing by use of Critical Path Method or PERT, and in preparation and issue of periodic reports as required below.

B. Reference Standards: Perform all data preparation, analysis, charting, and updating in accordance with all recommendations contained in the current edition of "CPM in Construction" Manual of Associated General Contractors, (or in accordance with other standards approved).

C. Reliance upon Approved Schedule:

1. The Contractor's CPM construction schedule shall be an integral part of the Contract, shall incorporate the milestone Contract Completion dates specified elsewhere in the Bid Documents (Section 01800), for each Building/Phase, and shall establish interim completion dates for all construction activities related to each Phase.

2. It is the responsibility of the Contractor to obtain all necessary information from Prime Subcontractors, Suppliers, the Owner, Architect, Engineers, Owner's Representative, and any other entities with whom the schedule must be coordinated.

3. Should any activity not be completed within 7 calendar days after its scheduled completion date, the Owner shall have the right to order the Contractor to expedite completion of the activity by whatever means the Owner deems appropriate and necessary, without additional compensation to the Contractor.

4. Should any activity be 15 or more calendar days behind schedule, the Owner shall have the right to perform the activity or have the activity performed by whatever method the Owner deems appropriate.

5. The Contractor shall reimburse any costs incurred by the Owner in connection with expediting construction activity under this Article to the Owner.

6. It is expressly understood and agreed that failure by the Owner to exercise the option to either order the Contractor to expedite an activity or to expedite the activity by other means shall not be considered precedent setting for any other activities, nor shall it relieve the Contractor of the obligation to complete the Work of each Phase by the Contract milestone date.

1.3 SUBMITTALS

A. General: Comply with the provisions set forth herein.

B. Coordination: The Contractor shall be responsible for preparation/submission of all scheduling documents. The Prime Subcontractors shall provide the Contractor information required to prepare the Preliminary Analysis, Construction Schedule and Periodic Reports. Failure of any one or more Prime Subcontractors to provide information requested in a timely manner shall result in the Owner withholding payments until such information is provided.

C. Preliminary Analysis: Within ten (10) calendar days after issuance of Notice to Proceed, submit one electronic copy, one reproducible copy and four prints of a preliminary construction schedule prepared in accordance with Part 3 of this Section.

Note: No initial Application for Payment will be approved for payment prior to submission of these items.

D. Construction Schedule: Within fifteen (15) calendar days after issuance of Notice to Proceed, submit one electronic copy, one reproducible copy and four prints of construction schedule prepared in accordance with Part 3 of this Section.

Note: No second Application for Payment will be approved for payment prior to submission of and approval of the Contractor's Construction Schedule.

E. Periodic Report:

1. On the first working day of each month following submittal described in Paragraph D. above, submit one electronic copy and four prints of the

construction schedule updated as described in this Section.

2. On a weekly basis, on the day determined at the Pre-Construction Meeting, submit the Weekly Status Report updated and described in this Section.

F. Processing of future Applications for Payment shall be conditioned upon timely submission of Periodic Reports.

PART 2 - PRODUCTS

2.1 CONSTRUCTION ANALYSIS

A. The Contractor's Construction Schedule shall be prepared using Primavera Project Planner (latest version) software by Primavera Systems, Inc. or other scheduling software approved in advance by the Construction Manager. The Contractor shall provide copies of all required items on paper media as well as on hard disk.

1. In the event the Contractor receives approval to utilize a scheduling software other than Primavera Project Planner latest Version, the Contractor shall provide, at no additional cost to the Owner, one licensed copy of such software, in the unopened original packaging with all documentation, original software and manuals.

B. Logic Diagram: Graphically show the order and interdependence of all activities necessary to complete Work, and the sequence in which each activity is to be accomplished as planned by the Contractor and the project field superintendent in coordination with all Prime Subcontractors whose Work is shown on the diagram. Activities shown on the diagram shall include, but are not necessarily limited to:

1. Project mobilization;

2. Project Phasing and Milestones;

3. Submittals and approvals of Shop/ Coordination Drawings, Color Selections and Samples;

4. Procurement of equipment and critical materials (required for any item with a lead time exceeding 20 calendar days);

5. Fabrication of special material and equipment and their installation and testing;

6. Activities corresponding to entries on the Schedule of Values in accordance with E. below;

7. Inspections by the Local Construction Office and Testing and Inspection by the Contractor's consultant;

8. Required Pre-Installation Meetings;

9. Building Enclosure (temporary and permanent) and required heat/ climate control;

10. Completion and occupancy of individual phasing areas per Phasing Plan;

11. Final clean-up;

12. Final inspection and testing;

13. All activities by the Owner's or Owner's separate Contractor(s) that effect progress, required dates for completion, or both, for all and for each part of the Work.

C. The detail of information shall be such that duration times of activities shall normally range from one to twenty days (except for long lead fabrication and delivery activities as required herein). The selection and number of activities shall be subject to the Owner's approval.

1. Show on the diagram, as a minimum for each activity, preceding and following activity numbers, description of each activity, cost, and activity duration in calendar days. Submit diagram on a sheets 24-30 inches high by 36-42 inches wide required.

2. Mathematical Analysis: Furnish a mathematical analysis of the diagram by computer-aided means, including a tabulation of each activity. Show the following information as a minimum of each activity:
   a. Preceding and following activity number(s);
   b. Activity descriptions;
   c. Earliest start date (by calendar date);
   d. Latest start date (by calendar date);
   e. Earliest finish date (by calendar date);
   f. Latest finish date (by calendar date);
   g. Total float (by calendar days);
   h. Monetary value of the activity;
   i. Percentage of activity completed;
   j. Contractor's earning based on portion of activity completed.

D. The means used in making the mathematical analysis shall be capable of compiling the total value of completed and partially completed activities, and be capable of accepting modifications approved for time and logic adjustments.

E. Cost Loading of Schedule: The Contractor's Construction Schedule shall be "cost-loaded" such that the schedule shall reflect the planned sequence of Work and billing of the Contract and shall be coordinated with the schedule of values as otherwise required. On a monthly basis, the value of any monthly Application for Payment shall conform to the value of Work completed as reflected on the Monthly Project Schedule Updates.

F. Periodic Reports: List all activities in computer printouts, sorted as follows:

1. By the activity identification number (overall and by phase/area).
2. By the amount of total float.
3. By early start, then by early finish and then by total float.
4. Provide a hard disk copy of the Periodic Reports required.
5. Other sorts requested by the Owner.

2.2 WEEKLY STATUS REPORTS

A. Format: The Contractor shall submit weekly status reports in the form supplied at the Pre-Construction Meeting to provide sufficient pertinent data to determine that Work and materials procurement flow is adequate for all needs of the Work.

B. Content: Show at least the following information:

1. For Work:
   a. All activities commenced in the preceding two (2) weeks (by area and activity number from the approved Project Schedule).
   b. All activities completed in the preceding two (2) weeks (by area and activity number from the approved Project Schedule).
   c. All activities upon which work was performed in the preceding two (2) weeks (by area and new percentage complete conforming to Project schedule information).

2. For Materials: Maintain a database of major items of material to provide weekly update of the buy-out and delivery status showing:
   a. Item Description, listed in accordance with Specifications Section Number in which the item is called for (Note Project Schedule Activity number for all applicable items).
   b. Purchase Order No. and Date of Issue.
   c. Vendor Name.
   d. Date Shipped and Shipping Means Utilized.
   e. Estimated Date of Arrival at Job Site.
   f. Actual Date of Arrival at Job Site and Receiving Report Number.

C. Data Processing: Process the data by computer-aided methods to a degree of promptness and accuracy assuring complete display of all pertinent current information at date of each periodic report. Provide a hard disk copy of each Weekly Status Report.

PART 3 - EXECUTION

3.1 PRELIMINARY ANALYSIS

A. Contents:

1. Show all activities of the Contractor under this Work for the period between

receipt of Notice to Proceed and Submittal of Construction Schedule required as noted above.

2. Show the Contractor's general approach to remainder of the Work.

3. Show cost of all activities scheduled for performance before submittal and approval of the construction schedule.

B. Submittals shall be in accordance with other Division 1 provisions.

3.2 CONSTRUCTION SCHEDULE

A. As soon as practicable after Contract award, and not later than fifteen (15) calendar days after the issuance of the Notice to Proceed, the Contractor must gather scheduling data from all Prime Subcontractors and complete the Construction Analysis described in Article 2.01 above, in preliminary form. The Contractor must then conduct a Scheduling conference attended by all Prime Subcontractors, Architect and the Construction Manager, review contents of proposed construction schedule, and make all revisions agreed upon at the Scheduling Conference. Submit in accordance with Article 1.03 above.

B. All Prime Subcontractors must submit required scheduling data to the Contractor within ten (10) calendar days after Contract award.

3.3 WEEKLY STATUS REPORT

A. Prepare, update and review with Prime Subcontractors and Suppliers weekly in accordance with Articles 1.03 and 2.02 above.

3.4 PERIODIC REPORTS

A. Construction Schedule, Contents:

1. Report actual progress by updating the mathematical analysis.

2. Note on the summary report, or clearly show on a revised issue of affected portions of the detailed diagram, all revisions causing changes in the detailed program.

3. Revise the summary report as necessary for clarity.

4. Show activities or portions of activities completed during the reporting period and their actual value.

5. State the percentage of Work actually completed, the schedule as of the report date, and the progress along the critical path in terms of days ahead of or behind the allowable dates.

6. If the Work is behind schedule, also report progress along other paths with negative float.

7. Include a narrative report which shows, but is not necessarily limited to:
   a. A description of the problem areas, current and anticipated;
   b. Delaying factors and their impact;
   c. An explanation of corrective actions taken or proposed.

8. Show the date of latest revision. Submit in accordance with the provisions above.

B. Weekly Status Reports

1. On the letter of transmittal accompanying periodic reports, on an accompanying summary sheet, or by other means acceptable to the Construction Manager and Architect, clearly indicate those items of construction which, or materials the delivery of which are critically overdue or otherwise hazardous to maintenance of the approved schedule.

2. Submit in accordance with the provisions above.

C. Revisions: Make only those revisions to the approved Construction Schedule as are approved by the Architect/Owner.

END OF SECTION 01325

SECTION 01380 - CPM SCHEDULE

PART 1 - GENERAL

1.1 SUMMARY

A. The Contractor shall prepare and submit a construction schedule based upon input from the Prime Subcontractors as set forth in Section 00800.

B. The schedule shall include line items for the following information broken down by trade:

1. Contractual milestone dates as set forth in Section 01800.
2. Critical and long-lead item delivery dates
3. Owner activities including move-in/occupancy time
4. Critical inspections or testing
5. Other critical activities appropriate to project
6. Separate activity lines for new additions and renovation areas
7 Punch list and final completion period

C. The Construction Schedule shall be completed within thirty (30) days of the Notice to Proceed. The Contractor shall distribute copies to the Owner, Architect, Construction Manager and Prime Subcontractors. The Contractor shall provide a sign-off block for signature by all Subcontractors indicating their acceptance of the schedule. All Subcontractors shall sign off on the schedule at the job meeting closest to the date of distribution. Failure to submit a monthly schedule update will be grounds for the withholding of payments.

D. Schedule updates shall be provided at least monthly but more often if requested by the Owner or Architect. The monthly update shall be distributed by the Contractor to all Subcontractors for purposes of providing input. Each monthly update shall include a progress bar for each activity. The monthly update shall be submitted to the Architect, Construction Manager and Owner each month prior to the requisition cut-off date. Failure to submit a monthly schedule update will be grounds for the withholding of payments.

E. The project will be scheduled and monitored using a construction schedule; Critical Path method (CPM) techniques. The Contractor will prepare all schedules and all periodic updates based upon information furnished by the Prime Subcontractors and observations of the work in progress. Revisions of the schedule to reflect changes in the Contractors' plan of performance or modifications of the Bid Documents will be prepared by the Contractor.

F. This section describes the CPM Progress Schedule requirements. Each Prime Subcontractor shall provide all necessary information in connection with their Work to enable the Contractor to comply with these requirements. Further, each Prime Subcontractor shall provide such information in a timely manner to permit the

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Contractor to comply with the time requirements stated herein.

G. Monthly update conferences will be held with all concerned. At these update conferences, the attendees will review actual progress, planned progress, planned progress for the next period, change orders, job issues, and any schedule changes since the previous update. Attendance in mandatory. Contractor current estimate payments are contingent upon attendance and the provision of satisfactory CPM base schedule and update information. The monthly update conference may be scheduled more frequently when required, at the direction of the Contractor.

H. The Contractor shall prepare, based upon information obtained from the Subcontractors, and maintain a detailed Progress Schedule as described below. The schedule shall reflect the Contractor's working schedule and be used to plan, organize and execute the Work, record and report actual performance and progress, and show how the Contractor plans to complete all remaining Work. The schedule shall be in the form of an activity oriented network diagram (Critical Path Method) I-J format. The principles and definition of the terms used herein shall be as set forth in the Associated General Contractors of America (AGC) publication "The Use of CPM in Construction", Copyright 1976. In the event of discrepancies, this section shall govern the development and utilization of the Progress Schedule.

I. The completed schedule shall be distributed to all Prime Subcontractors. When the schedule is approved by each Prime Subcontractor, the Owner, Architect, Construction Manager or their agents will review the schedule for conformance with the Contract requirements, and it shall become one of the Bid Documents.

1. This schedule may be revised to show changes in the Contractors' method of their agreement that the Progress Schedule represents their intentions and interpretations of the requirements of the Contract.

1.2 PRE-BID SCHEDULE

A. The Pre-bid Schedule outlined in Section 01800 indicates a general sequence of activities leading towards the completion of the Contract work within the milestones noted.

B. The sequence of operations and the time estimated for activities on the Pre-bid Schedule are shown for information only and are not to be considered binding. Means, Methods, and Procedures are at the discretion of each Prime Subcontractor. Specific interfaces between Subcontractors will be planned in the Progress Schedule process described below. However, the Contract completion date and any milestone dates for substantial completion are binding. The actual date when written Notice to Proceed is issued will be used in the CPM Logic Diagrams to calculate the milestone dates for those dates contingent on the Notice to Proceed date and will be used to prepare the Official Construction Schedule, using the Subcontractor's proposed sequence of Work and duration of activities.

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1.3 PRELIMINARY SCHEDULE

A. Within (10) working days of Notice to Proceed (NTP), all Prime Subcontractors shall participate in an initial scheduling conference. Attendance is mandatory for all Subcontractors. Each Subcontractor will submit as a minimum, a detailed ninety (90) day Work plan in arrow/activity format for approval together with a generalized project schedule network, in summary form, meeting the contractual milestone dates. During this meeting the schedule will be developed from input furnished by each Prime Subcontractor. Until the formal schedule has been developed and is approved by the Architect and Construction Manager, the ninety (90) day Work plan will serve as the official construction schedule after the review and coordination with each Prime Subcontractor.

B. Where such coordinated Work is required, (Single Overall Contract), the Contractor shall schedule reasonable durations and provide proper advance notice for the Work of the Prime Subcontractors to the extent that normal time Work is accommodated without the need for overtime or shift Work.

C. The Contractor shall develop a 90-day Schedule within ten (10) working days after the initial scheduling conference, utilizing input from Prime Subcontractors. This schedule will be in arrow network form, with each node calendar date based on "early start, early finish" of each Work activity. The 90-day Schedule will contain Work activities over the first ninety (90) days, estimated duration for each Work activity will be fifteen (15) Work days or will show the key procurement items which will occur during the first ninety (90) days of the project in addition to the field Work.

1.4 DETAILED SCHEDULE

A. Within thirty (30) calendar days of Notice to Proceed (NTP), all Prime Subcontractors shall participate in a detailed scheduling conference. Attendance is mandatory. Each Prime Subcontractor shall submit network based coordinated CPM Schedule information to the Contractor for review. Each Subcontractor shall Work with the Contractor to prepare the CPM network in a sketch format and, unless otherwise approved by the Owner's Representative, shall meet each consecutive day for eight (8) hours minimum until a useable, logical CPM schedule network, responsive to the project requirements, has been developed as determined by the Owner's Representative. Non-critical path activities shall be scheduled to reflect the float status shown on the Preliminary Construction Schedule unless otherwise approved by the Construction Manager and the Architect.

B. Where coordinated Work is required, the Contractor shall schedule reasonable durations and proper advance notice for the Work of the Prime Subcontractors to the extent that normal time Work is accommodated without the need for overtime or shift Work.

C. Based upon CPM Schedule information submitted, the Contractor will draft and computerize the schedule and issue it for review an comment. In the event the

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milestone dates indicated by the Progress Scheduled exceed the contractual dated, each Subcontractor shall review and revise the logic and time estimates and resubmit to the Contractor for review within one (1) week of notification. This procedure shall be followed for all schedule revisions. After changes in the logic and/or time estimated have been agreed upon, another computerized schedule will be generated and referred to the Contractor.

D. The Detailed Network Diagram shall provide sufficient detail and clarity of form and technique so that the Contractor can plan, schedule and control their Work properly and the Construction Manager can readily monitor and follow the progress for all portions of Work. The Detailed Network Diagram shall comply with the various limits imposed by the Scope of Work and by any contractually specified intermediate milestone dates and completion dates included in the Contract. The degree of detail shall be to the satisfaction of the Construction Manager, but the following factors shall have a bearing on the required depth of activity detail:

1. The structural breakdown of the project.
2. The type of Work to be performed and the labor trades involved.
3. All purchase, manufacture and delivery activities for all manor materials and equipment.
4. Deliveries of Owner furnished equipment.
5. Submittal and approval of shop drawings and material samples.
6. Plans for all key Trades and Subcontract Work.
7. Assignment or responsibility for performing all activities.
8. Access and availability to Work areas.
9. Identification of interfaces and dependencies with preceding, concurrent and follow-on Subcontractors.
10. Testing of systems.
11. Planning for phased or total takeover by Owner.

E. The Progress Schedule will not include every item of Work necessary to complete the project. However, each Subcontractor shall accept responsibility to schedule and complete all items of Work within the contractual limits.

F. The durations as outlined in the Progress Schedule shall be analyzed in detail to determine activity time durations in units of whole working days. Activities shown will have maximum duration of twenty (20) working days, except in the case of the non-construction activities such as procurement of materials and delivery of equipment. All durations shall be the result of definitive manpower and resource planning by the Prime Subcontractors.

1.5 AUTOMATED DATA PROCESSING (ADP)

A. The mathematical analysis of the Detailed Network Diagram shall be made by computer and a tabulation for each activity shall include as a minimum, the following:

1. Preceding and following event numbers.

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2. Activity description.
3. Durations in Work days for each activity.
4. Earliest start date (by calendar date).
5. Earliest finish date (by calendar date).
6. Latest start date (by calendar date).
7. Latest finish date (by calendar date).

1.6 SUMMARY SCHEDULE

A. The Contractor shall also prepare and submit on the Initial and all updated schedules, a time-scaled Summary Schedule on a single sheet showing the total project in approximately fifty to one hundred (50) - (100) activities. This schedule will accurately summarize the Detailed Schedule. Each activity will indicate and I and J note that corresponds to the Detailed Schedule. The Summary Schedule shall be updated monthly showing the original as-planned schedule denoted and the current update information denoted.

1.7 COMPLETION REQUIREMENT

A. The Preliminary Schedule will be completed within thirty (30) calendar days of the Notice to Proceed.

B. The Progress Schedule (logic diagrams and computer computations) and the Summary Schedule shall be prepared for review within sixty (60) calendar days after Notice to Proceed. The Prime Subcontractor(s) shall review the schedule and note any corrections required as a condition of approval within ten (10) days of the receipt of the schedule. The Contractor will prepare a final Progress Schedule for approval of the Prime Subcontractors within twelve (12) calendar days following receipt of the Prime Subcontractor's comments.

C. When the Progress Schedule is completed and is within contractual limits, each Prime Subcontractor shall certify in writing on the face of the computer printout and submit it to the Architect and Construction Manger for approval no later than seventy-five (75) calendar days after Notice to Proceed, unless otherwise approved by the Architect and Construction Manager.

D. The Contractor will furnish the Prime Subcontractors two (2) copies of Computer Printouts (computations).

E. If the Contractor fails to submit the required monthly update material as indicated in this section within ten (10) calendar days, or revisions thereof within the requested time, the Architect may withhold approval of progress payment estimates until such time as the Contractor submits the required information.

F. Notwithstanding the implementation of the CPM, it shall be the sole responsibility of the Prime Subcontractors to complete the Work within the time of completion and milestone required by the Contract.

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1.8 UPDATINGS

A. The first update shall take place thirty (30) calendar days after the Notice to Proceed with subsequent updates performed monthly at the job site for the duration of the Contract.

B. The Preliminary Schedule will be updated until the Progress Schedule is reviewed and approved by the Subcontractors.

C. All update information contained on the 90-day Schedule will be incorporated into the Progress Schedule once the Progress Schedule is accepted.

D. Each Prime Subcontractor is required to attend and participate in update meetings with the Contractor and present data prepared in advance, updated as of the end of the updating period, a complete and accurate report of updated procurement items, and construction progress. Each Prime Subcontractor shall show how it will make up the time list due to non-excused Contractor delays. The following will also be presented and made part of the CPM update:

1. Actual start dates.
2. Actual completion dates.
3. Revised logic and changes in activity durations.

E. Should the projected completion time for any significant Work activity as determined by the latest CPM printout of the Progress Schedule indicate more than a critical ten (10) day delay to the project, the Subcontractor shall submit a revised plan to the Contractor, within five (5) calendar days, to recover all lost time and maintain the project schedule. This revised plan is to include a re-sequencing of Work activities and/or revisions to the performance time for the affected activities so that remaining milestone completion dates are met.

F. Each Prime Subcontractor shall be responsible to coordinate its Work with the Work of other Prime Subcontractors. Each Prime Subcontractor shall not delay and/or interfere with the Work of others. Each Prime Subcontractor shall pay all costs for damages and/or delays to other Subcontractors caused by lack of coordination and/or interference with their Work which could not be reasonably avoided.

1.9 CHANGE ORDERS, DELAYS AND EXTENSIONS OF TIME

A. Extensions of time will only be considered for justifiable delays that are on the critical path and impact milestone dates by exceeding the amount of positive float shown on the approved CPM Schedule. A justifiable delay is delay due to a cause that the Architect / Construction Manager, in their discretion, determines is unforeseeable, beyond the Subcontractor's control, and not due to any fault, negligence, act, or omission on the part of the Subcontractor. Positive float is the number of calendar days an activity can be delayed without causing a delay to the critical path or

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milestone completion dates. The Contractor shall plan construction activities to start on "early start dates" to maintain positive float and shall be responsible for any delays which could have been avoided by starting Work on the "early start dates" by lack of continuous effort, and/or by inadequate planning, and coordination of the Work. Such delays will not be the basis of an extension of time to any milestone date or additional costs.

B. When change orders or delays are experienced, the Contractor shall submit to the Architect / Construction Manager, a written Time Impact Analysis illustrating the influence of each change or delay on the current Progress Schedule completion date. Each Time Impact Analysis shall include a network analysis demonstrating how the Contractor proposed to incorporate the change order or delay into the Progress Schedule. Additionally, the analysis shall demonstrate the time impact based on the date the change is given to the Contractor, the status of construction at that point in time, and the event time computation of all effected activities. The event times used in the analysis shall be those included in the latest updated copy of the Progress Schedule, closest to the time of delay or as adjusted by mutual agreement. Each time Impact Analysis shall be submitted within seven (7) calendar days after a delay occurs or notice of direction for a change is given to the Contractor. In cases where the Contractor does not submit a time Impact Analysis for a specific change order of delay within the specified period of time, then it is mutually agreed that the particular change order or delay has no time impact on the Contract completion date and no time extension is required. Approval or rejection of each Time Impact Analysis by the Construction Manager and the Architect shall be made within fourteen (14) calendar days after receipt of each Time Impact Analysis unless subsequent meetings and negotiations are necessary.

END OF SECTION 01380

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SECTION 01400 - MATERIAL TESTING / QUALITY CONTROL SERVICES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and other Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for material testing and quality control services.

1. Testing and inspecting services are required to verify compliance with requirements specified or indicated and are the responsibility of the Contractor. These services do not relieve Contractor of responsibility for compliance with the Bid Document requirements.

B. Specific quality-control requirements for individual construction activities are specified in the Sections that specify those activities. Requirements in those Sections may also cover production of standard products.

1. Quality Control Services is the responsibility of the Contractor.

2. Specified tests, inspections, and related actions do not limit Contractor's quality-control procedures that facilitate compliance with the Bid Document requirements.

3. Requirements for Contractor to provide quality-control services required by Architect, and the Owner or authorities having jurisdiction are not limited by provisions of this Section.

C. Related Sections include the following:

1. Division 1 Section "Construction Progress Documentation" for developing a schedule of required tests and inspections in AIA Document A232 and Section 01200.

2. Division 1 Section "Cutting and Patching" for repair and restoration of construction disturbed by testing and inspecting activities.

3. Specifications Sections (on the Drawings and in the Specification manual) for specific test and inspection requirements.

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1.3 DEFINITIONS

A. Quality Control Services: Activities, actions, and procedures performed before and during execution of the Work to guard against defects and deficiencies and ensure that proposed construction complies with requirements.

B. Quality-Control Services: Tests, inspections, procedures, and related actions during and after execution of the Work to evaluate that completed construction complies with requirements. Services do not include contract enforcement activities performed by Architect

C. Mockups: Full-size, physical example assemblies to illustrate finishes and materials. Mockups are used to verify selections made under Sample submittals, to demonstrate aesthetic effects and, where indicated, qualities of materials and execution, and to review construction, coordination, testing, or operation; they are not Samples.

1. Mockups establish the standard by which the Work will be judged.

D. Testing Agency: An entity engaged to perform specific tests, inspections, or both. Testing laboratory shall mean the same as testing agency.

1.4 DELEGATED DESIGN

A. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Bid Documents, provide products and systems complying with specific performance and design criteria indicated.

1. If criteria indicated are not sufficient to perform services or certification required, submit a written request for additional information to Architect.

1.5 REGULATORY REQUIREMENTS

A. Copies of Regulations: Obtain copies of referenced regulations which also available in Local Public Libraries.

1.6 SUBMITTALS

A. Qualification Data: For testing agencies specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include proof of qualifications in the form of a recent report on the inspection of the testing agency by a recognized authority.

B. Delegated-Design Submittal: When requirement is indicated in specific technical section and/or when requested by the Architect, in addition to Shop Drawings, Product Data, and other required submittals, submit a statement, signed and sealed

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by the responsible design professional, for each product and system specifically assigned to Contractor to be designed or certified by a design professional, indicating that the products and systems are in compliance with performance and design criteria indicated. Include list of codes, loads, and other factors used in performing these services.

C. Schedule of Tests and Inspections: Prepare in tabular form and include the following:

1. Specification Section number and title.
2. Description of test and inspection.
3. Identification of applicable standards.
4. Identification of test and inspection methods.
5. Number of tests and inspections required.
6. Time schedule or time span for tests and inspections.
7. Entity responsible for preforming tests and inspections.
8. Requirements for obtaining samples.
9. Unique characteristics of each quality-control service.

D. Reports: Prepare and submit certified written reports that include the following:

1. Date of issue.
2. Project title and number.
3. Name, address, and telephone number of testing agency.
4. Dates and locations of samples and tests or inspections.
5. Names of individuals making tests and inspections.
6. Description of the Work and test and inspection method.
7. Identification of product and Specification Section.
8. Complete test or inspection data.
9. Test and inspection results and an interpretation of test results.
10. Ambient conditions at time of sample taking and testing and inspecting.
11. Comments or professional opinion on whether tested or inspected Work complies with the Bid Document requirements.
12. Name and signature of laboratory inspector.
13. Recommendations on retesting and reinspecting.

E. Permits, Licenses, and Certificates: For Owner's records, submit copies of permits, licenses, certifications, inspection reports, releases, jurisdictional settlements, notices, receipts for fee payments, judgments, correspondence, records, and similar documents, established for compliance with standards and regulations bearing on performance of the Work.

1.7 QUALITY ASSURANCE

A. Fabricator Qualifications: A firm experienced in producing products similar to those indicated for this Project and with a record of successful in-service performance, as well as sufficient production capacity to produce required units.

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B. Factory-Authorized Service Representative Qualifications: An authorized representative of manufacturer who is trained and approved by manufacturer to inspect installation of manufacturer's products that are similar in material, design, and extent to those indicated for this Project.

C. Installer Qualifications: A firm or individual experienced in installing, erecting, or assembling work similar in material, design, and extent to that indicated for this Project, whose work has resulted in construction with a record of successful in-service performance.

D. Manufacturer Qualifications: A firm experienced in manufacturing products or systems similar to those indicated for this Project and with a record of successful in-service performance.

E. Professional Engineer Qualifications: A professional engineer who is legally qualified to practice in the jurisdiction where the Project is located and who is experienced in providing engineering services of the kind indicated. Engineering services are defined as those performed for installations of the system, assembly, or product that are similar to those indicated for this Project in material, design, and extent.

F. Specialists: Certain sections of the Specifications require that specific construction activities shall be performed by entities who are recognized experts in those operations. Specialists shall satisfy qualification requirements indicated and shall be engaged for the activities indicated.

1. Requirement for specialists shall not supersede building codes and similar regulations governing the Work, nor interfere with local trade-union jurisdictional settlements and similar conventions.

G. Testing Agency Qualifications: An agency with the experience and capability to conduct testing and inspecting indicated, as documented by ASTM E 548, and that specializes in types of tests and inspections to be performed.

1. Preconstruction Testing: Testing agency shall perform preconstruction testing for compliance with specified requirements for performance and test methods.

2. Contractor responsibilities include the following:
    a. Provide test specimens and assemblies representative of proposed materials and construction. Provide sizes and configurations of assemblies to adequately demonstrate capability of product to comply with performance requirements.
    b. Submit specimens in a timely manner with sufficient time for testing and analyzing results to prevent delaying the Work.
    c. Fabricate and install test assemblies using installers who will perform the same tasks for Project.

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d. When testing is complete, remove assemblies; do not reuse materials on Project.

3. Testing Agency Responsibilities: Submit a certified written report of each test, inspection, and similar quality-assurance service to Architect and the Owner with copy to Contractor. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from the Bid Documents.

H. Mockups: Before installing portions of the Work requiring mockups, build mockups for each form of construction and finish required to comply with the following requirements, using materials indicated for the completed Work:

1. Build mockups in location and of size indicated or, if not indicated, as directed by Architect .

2. Notify Architect seven (7) days in advance of dates and times when mockups will be constructed.

3. Demonstrate the proposed range of aesthetic effects and workmanship.

4. Obtain Architect's approval of mockups before starting work, fabrication, or construction.

5. Maintain mockups during construction in an undisturbed condition as a standard for judging the completed Work.

6. Demolish and remove mockups when directed, unless otherwise indicated.

1.8 QUALITY CONTROL

A. Contractor Responsibilities: Unless otherwise indicated, provide quality-control services specified and required by Authorities Having Jurisdiction.

1. Where services are indicated as Contractor's responsibility, engage a qualified testing agency to perform these quality-control services.

2. Notify testing agencies at least 24 hours in advance of time when Work that requires testing or inspecting will be performed.

3. Where quality-control services are indicated as Contractor's responsibility, submit a certified written report, in duplicate, of each quality-control service.

4. Testing and inspecting requested by Contractor and not required by the Bid Documents are Contractor's responsibility.

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a. Submit additional copies of each written report directly to authorities having jurisdiction, when they so direct.

B. Manufacturer's Field Services: Where indicated, engage a factory-authorized service representative to inspect field-assembled components and equipment installation, including service connections. Report results in writing.

C. Retesting/Reinspecting: Regardless of whether original tests or inspections were Contractor's responsibility, provide quality-control services, including retesting and reinspecting, for construction that revised or replaced Work that failed to comply with requirements established by the Bid Documents.

1. Testing Agency Responsibilities: Cooperate with Architect and Contractor in performance of duties. Provide qualified personnel to perform required tests and inspections.
   a. Notify Architect and Contractor promptly of irregularities or deficiencies observed in the Work during performance of its services.
   b. Interpret tests and inspections and state in each report whether tested and inspected work complies with or deviates from requirements.
   c. Submit a certified written report, in duplicate, of each test, inspection, and similar quality-control service through Contractor.
   d. Do not release, revoke, alter, or increase requirements of the Bid Documents or approve or accept any portion of the Work.
   e. Do not perform any duties of Contractor.

2. Associated Services: Cooperate with agencies performing required tests, inspections, and similar quality-control services, and provide reasonable auxiliary services as requested. Notify agency sufficiently in advance of operations to permit assignment of personnel. Provide the following:
   a. Access to the Work.
   b. Incidental labor and facilities necessary to facilitate tests and inspections.
   c. Adequate quantities of representative samples of materials that require testing and inspecting. Assist agency in obtaining samples.
   d. Facilities for storage and field-curing of test samples.
   e. Delivery of samples to testing agencies.
   f. Preliminary design mix proposed for use for material mixes that require control by testing agency.
   g. Security and protection for samples and for testing and inspecting equipment at Project site.

3. Coordination: Coordinate sequence of activities to accommodate required quality-assurance and quality-control services with a minimum of delay and to avoid necessity of removing and replacing construction to accommodate testing and inspecting.
   a. Schedule times for tests, inspections, obtaining samples, and similar activities.

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4. Schedule of Tests and Inspections: Prepare a schedule of tests, inspections, and similar quality-control services required by the Bid Documents. Submit schedule within 30 days of date established for commencement of the Work.
    a. Distribution: Distribute schedule to Owner, Architect, testing agencies, and each party involved in performance of portions of the Work where tests and inspections are required.

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION

3.1 REPAIR AND PROTECTION

A. General: On completion of testing, inspecting, sample taking, and similar services, repair damaged construction and restore substrates and finishes.

1. Provide materials and comply with installation requirements specified in other Sections of these Specifications. Restore patched areas and extend restoration into adjoining areas in a manner that eliminates evidence of patching.

2. Comply with the Bid Document requirements for Division 1 Section "Cutting and Patching."

3. Protect construction exposed by or for quality-control service activities.

4. Repair and protection are Contractor's responsibility, regardless of the assignment of responsibility for quality-control services.

END OF SECTION 01400

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SECTION 01410 - REFERENCES AND INDUSTRY STANDARDS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. The Work of this Section applies to all Construction Bid Documents including Drawings, Division 1 - Miscellaneous Requirements Sections, and Specifications Sections included in Part-2 through Part-6.

1.2 DEFINITIONS

A. General: Basic Contract definitions are included in the Conditions of the Contract.

B. "Approved:" The term "approved," when used to convey Architect's action on Contractor's submittals, applications, and requests, is limited to Architect's duties and responsibilities.

C. "Directed:" Terms such as "directed," "requested," "authorized," "selected," "approved," "required," and "permitted" mean directed by Architect, requested by Architect, and similar phrases.

D. "Indicated:" The term "indicated" refers to graphic representations, notes, or schedules on Drawings or to other paragraphs or schedules in Specifications and similar requirements in the Bid Documents. Terms such as "shown," "noted," "scheduled," and "specified" are used to help the user locate the reference.

E. "Regulations:" The term "regulations" includes laws, ordinances, statutes, and lawful orders issued by authorities having jurisdiction, as well as rules, conventions, and agreements within the construction industry that control performance of the Work.

F. "Furnish:" The term "furnish" means to supply and deliver to Project site, ready for unloading, unpacking, assembly, installation, and similar operations.

G. "Install:" The term "install" describes operations at Project site including unloading, temporarily storing, unpacking, assembling, erecting, placing, anchoring, applying, working to dimension, finishing, curing, protecting, cleaning, and similar operations.

H. "Provide:" The term "provide" means to furnish and install, complete and ready for the intended use.

I. "Installer:" An installer is the Contractor or another entity engaged by Contractor as an employee, Subcontractor, or Sub-subcontractor, to perform a particular construction operation, including installation, erection, application, and similar operations.

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J. The term "experienced," when used with an entity, means having successfully completed a minimum of five previous projects similar in size and scope to this Project; being familiar with special requirements indicated; and having complied with requirements of Authorities Having Jurisdiction, subject to verification by and approval of the Architect.

1. Using a term such as "carpentry" does not imply that certain construction activities must be performed by accredited or unionized individuals of a corresponding generic name, such as "carpenter." It also does not imply that requirements specified apply exclusively to tradespeople of the corresponding generic name.

K. "Project site(s)" is the space available for performing construction activities. The extent of Project site is shown on Drawings and may or may not be identical with the description of the land on which Project is to be built.

1.3 INDUSTRY STANDARDS

A. Applicability of Standards: Unless the Bid Documents include more stringent requirements, applicable construction industry standards have the same force and effect as if bound or copied directly into the Bid Documents to the extent referenced. Such standards are made a part of the Bid Documents by reference.

B. Publication Dates: Comply with standards in effect as of date of the Bid Documents, unless otherwise indicated.

C. Conflicting Requirements: If compliance with two or more standards is specified and the standards establish different or conflicting requirements for minimum quantities or quality levels, comply with the most stringent requirement. Refer uncertainties and requirements that are different, but apparently equal, to Architect for a decision before proceeding.

1. Minimum Quantity or Quality Levels: The quantity or quality level shown or specified shall be the minimum provided or performed. The actual installation may comply exactly with the minimum quantity or quality specified, or it may exceed the minimum within reasonable limits. To comply with these requirements, indicated numeric values are minimum or maximum, as appropriate, for the context of requirements. Refer uncertainties to Architect for a decision before proceeding.

D. Copies of Standards: Each entity engaged in construction on Project must be familiar with industry standards applicable to its construction activity. Copies of applicable standards are not bound with the Bid Documents.

1. Where copies of standards are needed to perform a required construction activity, obtain copies directly from publication source and make them available on request.

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E. Abbreviations and Acronyms for Industry Organizations: Where abbreviations and acronyms are used in Specifications or other Bid Documents, they shall mean the recognized name of the entities indicated in Gale Research's "Encyclopedia of Associations" or in Columbia Books' "National Trade & Professional Associations of the U.S.".

PART 2 - PRODUCTS (Not Used)

PART 3 - EXECUTION (Not Used)

END OF SECTION 01410

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SECTION 01505 - TEMPORARY FACILITIES

1.1 RESPONSIBILITIES OF CONTRACTOR

A. Contractor is responsible for the following temporary facilities and services:

1. Installation, operation, maintenance and removal of each temporary facility usually considered as its own normal construction activity.

2. Plug in electric cords, extensions cords, supplementary plug in task lighting and special lighting necessary exclusively for their own activities.

3. Their own storage and fabrication sheds.

4. All hoisting requirements for their Work.

5. Collection and disposal of debris, hazardous, unsanitary or other harmful waste material from their operations, on a daily basis to trash receptacles, hoppers, containers, dumpsters, etc. furnished by the Contractor.
   a. **Refer to Section 01050 - Alterations, Cutting, Patching and Refinishing Work which identifies the responsible Contractor for the collection and disposal of debris and Section 01524 - Construction Waste Management for additional information.**

6. Six foot (6'-0") high site enclosure fence, including maintenance and any gates needed. Provide fence relocations as needed during construction.

7. The secure lockup of their own tools, materials and equipment.

8. Construction aids and miscellaneous services and facilities necessary exclusively for their own construction activities.

9. Temporary storage provisions for Work, including offsite provisions, if required.

10. Containerized bottled drinking water units for their personnel.

11. Fire protection provisions related to work including fire extinguishers.

12. All personnel safety equipment and provisions for their personnel.

13. Environmental protections.

14. Dust and fume control

15. Tree and plant protection.

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16. Other temporary facilities and services stated as their responsibility elsewhere in the Bid Documents.

17. Temporary toilets in sufficient quantity to suit project needs and including disposable supplies.

1.2 COMPRESSED AIR

A. Contractor shall furnish their own equipment and energy source to provide compressed air required for the completion of Work under the Contract.

1.3 REMOVAL AND RESTORATION OF TEMPORARY FACILITIES

A. At the completion of the Work prior to final payment, Contractor shall remove temporary facilities and Work which they has been responsible. Refer to Section 01700 for additional requirements.

1.4 UTILITY CONSUMPTION

A. The Owner shall be responsible and pay all utility costs for electric and water consumption during the construction period.

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SECTION 01524 - CONSTRUCTION WASTE MANAGEMENT

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes administrative and procedural requirements for the following:

1. Salvaging nonhazardous demolition and construction waste.

2. Recycling nonhazardous demolition and construction waste.

3. Disposing of nonhazardous demolition and construction waste.

B. Related Sections include the following:

1. All of Division 1 and attached Specifications and Drawings that make a part of this Contract.

1.3 DEFINITIONS

A. Construction Waste: Building improvement materials and other solid waste resulting from construction, remodeling, renovation, or repair operations. Construction waste includes packaging.

B. Demolition Waste: Building improvement materials resulting from demolition or selective demolition operations.

C. Disposal: Removal off-site of demolition and construction waste and subsequent sale, recycling, reuse, or deposit in landfill or incinerator acceptable to Authorities Having Jurisdiction.

D. Recycle: Recovery of demolition or construction waste for subsequent processing in preparation for reuse.

E. Salvage: Recovery of demolition or construction waste and subsequent sale or reuse in another facility.

1.4 SUBMITTALS

A. Waste Management Plan: Submit 4 copies of plan within 30 days of date established for the Notice to Proceed.

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B. Records of Donations: Indicate receipt and acceptance of salvageable waste donated to individuals and organizations. Indicate whether organization is tax exempt.

C. Records of Sales: Indicate receipt and acceptance of salvageable waste sold to individuals and organizations. Indicate whether organization is tax exempt.

D. Recycling and Processing Facility Records: Indicate receipt and acceptance of recyclable waste by recycling and processing facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.

E. Landfill and Incinerator Disposal Records: Indicate receipt and acceptance of waste by landfills and incinerator facilities licensed to accept them. Include manifests, weight tickets, receipts, and invoices.

F. Qualification Data: For refrigerant recovery technician.

G. Statement of Refrigerant Recovery: Signed by refrigerant recovery technician responsible for recovering refrigerant, stating that all refrigerant that was present was recovered and that recovery was performed according to EPA regulations. Include name and address of technician and date refrigerant was recovered.

1.5 QUALITY ASSURANCE

A. Regulatory Requirements: Comply with hauling and disposal regulations of Authorities Having Jurisdiction.

B. Waste Management Conference: Conduct conference at Project site to comply with requirements in Division 1. Review methods and procedures related to waste management including, but not limited to, the following:

1. Review and discuss waste management plan.

2. Review requirements for documenting quantities of each type of waste and its disposition.

3. Review and finalize procedures for materials separation and verify availability of containers and bins needed to avoid delays.

4. Review procedures for periodic waste collection and transportation to recycling and disposal facilities.

5. Review waste management requirements for each trade.

1.6 WASTE MANAGEMENT PLAN

A. General: Develop plan consisting of waste identification, and waste reduction Work

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plan. Indicate quantities by weight or volume, but use same units of measure throughout waste management plan.

B. Waste Identification: Indicate anticipated types and quantities of demolition, site-clearing, and construction waste generated by the Work. Include estimated quantities and assumptions for estimates.

C. Waste Reduction Work Plan: List each type of waste and whether it will be salvaged, recycled, or disposed of in landfill or incinerator. Include points of waste generation, total quantity of each type of waste, quantity for each means of recovery, and handling and transportation procedures.

1. Salvaged Materials for Sale: For materials that will be sold to individuals and organizations, include list of their names, addresses, and telephone numbers.

2. Salvaged Materials for Donation: For materials that will be donated to individuals and organizations, include list of their names, addresses, and telephone numbers.

3. Recycled Materials: Include list of local receivers and processors and type of recycled materials each will accept. Include names, addresses, and telephone numbers.

4. Disposed Materials: Indicate how and where materials will be disposed of. Include name, address, and telephone number of each landfill and incinerator facility.

5. Handling and Transportation Procedures: Include method that will be used for separating recyclable waste including sizes of containers, container labeling, and designated location on Project site where materials separation will be located.

PART 2 - PRODUCTS (NOT USED)

PART 3 - EXECUTION

3.1 PLAN IMPLEMENTATION

A. General: Implement waste management plan as approved by Owner / Architect. Provide handling, containers, storage, signage, transportation, and other items as required to implement waste management plan during the entire duration of the Contract.

1. Comply with Division 1 Section "Temporary Facilities" for operation, termination, and removal requirements.

B. Training: Train workers, Subcontractors, and suppliers on proper waste management procedures, as appropriate for the Work occurring at Project site.

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1. Distribute waste management plan to entities when they first begin work on-site. Review plan procedures and locations established for salvage, recycling, and disposal.

C. Site Access and Temporary Controls: Conduct waste management operations to ensure minimum interference with roads, streets, walks, walkways, and other adjacent occupied and used facilities.

1. Designate and label specific areas on Project site necessary for separating materials that are to be salvaged, recycled, reused, donated, and sold.

2. Comply with Division 1 Section "Temporary Facilities and Controls" for controlling dust and dirt, environmental protection, and noise control.

3.2 SALVAGING DEMOLITION WASTE

A. Salvaged Items for Sale and Donation: Not permitted on Project site.

3.3 RECYCLING DEMOLITION AND CONSTRUCTION WASTE, GENERAL

A. General: Recycle beverage containers used by on-site workers.

B. Recycling Incentives: Revenues, savings, rebates, tax credits, and other incentives received for recycling waste materials shall accrue to Contractor.

C. Procedures: Separate recyclable waste from other waste materials, trash, and debris. Separate recyclable waste by type at Project site to the maximum extent practical.

1. Provide appropriately marked containers or bins for controlling recyclable waste until they are removed from Project site. Include list of acceptable and unacceptable materials at each container and bin.
   a. Inspect containers and bins for contamination and remove contaminated materials if found.

2. Stockpile processed materials on-site without intermixing with other materials. Place, grade, and shape stockpiles to drain surface water. Cover to prevent windblown dust.

3. Stockpile materials away from construction area.

4. Store components off the ground and protect from the weather.

5. Remove recyclable waste off Owner's property and transport to recycling receiving or processor.

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3.4 RECYCLING CONSTRUCTION WASTE

A. Packaging:

1. Cardboard and Boxes: Break down packaging into flat sheets. Bundle and store in a dry location.

2. Polystyrene Packaging: Separate and bag materials.

3. Pallets: As much as possible, require deliveries using pallets to remove pallets from Project site. For pallets that remain on-site, break down pallets into component wood pieces and comply with requirements for recycling wood.

4. Crates: Break down crates into component wood pieces and comply with requirements for recycling wood.

B. Wood Materials:

1. Clean Cut-Offs of Lumber: Grind or chip into small pieces.

3.5 DISPOSAL OF WASTE

A. General: Except for items or materials to be salvaged, recycled, or otherwise reused, remove waste materials from Project site and legally dispose of them in a landfill or incinerator acceptable to Authorities Having Jurisdiction.

1. Except as otherwise specified, do not allow waste materials that are to be disposed of accumulate on-site.

2. Remove and transport debris in a manner that will prevent spillage on adjacent surfaces and areas.

B. Burning: Do not burn waste materials on-site.

C. Burying: Do not bury waste materials on-site.

D. Disposal: Transport waste materials off Owner's property and legally dispose of them.

E. Washing waste materials into sewers or drains is not permitted.

END OF SECTION 01524

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SECTION 01600 - PRODUCT REQUIREMENTS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. The work of this Section applies to all Construction Bid Documents including Drawings, Division 1 - Miscellaneous Requirements Sections, and Specifications sections.

1.2 SUMMARY

A. Section Includes:

1. General product requirements, including:
   a. General specification requirements for all products.
   b. General requirements and procedures for maintenance materials and tools.

2. General requirements for product documentation, including:
   a. Requirements and procedures for schedule of products.
   b. General requirements for operation and maintenance data.

3. General procedures for products including:
   a. Procedures for transportation and handling.
   b. Procedures for delivery and receiving.
   c. Procedures for storage.

PART 2 - PRODUCTS

2.1 GENERAL

A. Components required to be supplied in quantity within a Specification section shall be identical, interchangeable and made by the same manufacturer.

B. Do not use products removed from existing construction.

2.2 MAINTENANCE MATERIALS AND TOOLS

A. Maintenance Materials: Parts and materials for repair and maintenance; specific items required are specified in product sections.

1. Provide products and tools which are identical to those used in the Work; if necessary to obtain identical items, order at the same time as products to be installed or tools to be used in the Work.

B. Package appropriately and label to show type and quantity of contents.

C. Deliver, handle, and store in the same manner as products to be installed.

D. Do not turn over to the Owner until date of substantial completion, unless otherwise approved by the Owner.

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E. Deliver to the Owner; unload.

F. Obtain receipt prior to final payment.

PART 3 - EXECUTION

3.1 PRODUCTS

A. It is the Contractor's responsibility to select products which comply with the Bid Documents and which are compatible with one another, with existing Work, and with products selected by other (Sub)Contractors.

1. Verify that electrical characteristics of products are compatible with electrical systems; notify Architect of all discrepancies.

2. Where visual matching to an established physical sample is required, the Architect's decision will be final.

B. Do not use any substitute products which have not been approved in accordance with the requirements of the Bid Documents.

C. Where the Specification is silent on whether substitutions will be considered, substitutions will be considered only when submitted in accordance with AIA A232 and Section 00800.

D. Products Specified by Reference Standard: Use any product meeting the Specification. Provisions of reference standards shall not modify the responsibilities of the Owner or Architect as defined in the Bid Documents.

E. Products Specified by Performance Requirements: Use any product meeting the Specification.

F. Products Specified to Match a Physical Sample: Use any product that matches; obtain the Architect's approval.

G. Products Specified by Listing a Brand Name Product(s) made by listed Manufacturer(s) as the "Basis of Design":

1. Pursuant to N.J.S. 18A:18A-15(d) indicated basis of design brand name product(s) or equivalent made by one of the manufacturers listed will be acceptable and as determined by the Architect.

H. Products Specified by Listing Brand Name Product(s) Accompanied by Language Indicating that Substitutions Are Allowed: Provide a product meeting the Specification; submit substitution request for any brand-name product, that is not listed, in accordance with section 00800.

I. Products Specified by Listing Manufacturer(s): Provide a product meeting the Specification and made by one of the manufacturers listed or an approved equal. Approval of substitutions will be in accordance with AIA A232 and Section 00800.

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3.2 SCHEDULE OF PRODUCTS

A. Prepare a complete schedule of products used, including the following for each product:

1. Manufacturer's name.
2. Brand or trade name.
3. Model number, if applicable.
4. Reference standard, if more than one is applicable.
5. Arrange products in the schedule by Specification sections; indicate paragraph where specified.

B. Prepare and submit a preliminary schedule within 15 working days after award of Contract; resubmit when revised; submit final schedule prior to final payment. See additional requirements and milestone dates in section 01800.

C. Schedule of products shall not be used to obtain approval of substitute products; make separate request for substitution.

3.3 OPERATION AND MAINTENANCE DATA

A. Provide operation and maintenance data as specified in individual product sections.

1. Provide data sufficient for operation and maintenance by Owner without further assistance from the manufacturer.

2. Provide completed data in time for use during Owner instruction.

B. Data Required For Products - General:

1. Name of manufacturer and product.
2. Name, address, and telephone number of subcontractor or supplier.
3. Local source of replacements.
4. Local source of replaceable parts and supplies.

C. Product Data: Where product data is specified for inclusion in operation and maintenance data, provide manufacturer's data sheets marked to indicate specific product and product options actually installed; delete inapplicable data.

D. Project Record Documents: Provide an additional copy of applicable record documents for inclusion with the operation and maintenance data.

E. Coordination Drawings: When coordination drawings are prepared, include a copy with the operating and maintenance data.

F. Custom Manufactured Products: Provide all information needed for reordering.

G. Finish Materials: Manufacturer's product data, color/texture designations, and manufacturer's instructions for care, cleaning, and maintenance.

H. Products Exposed to Weather and Products for Moisture Protection: Manufacturer's product data, recommended inspection schedule and procedures, maintenance and repair procedures, and maintenance materials required.

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I. Equipment: Provide at least the following information:

1. Product data giving equipment and function description, with normal operating characteristics and limiting conditions.
2. Starting, operating, and troubleshooting procedures.
3. Cleaning and maintenance requirements and procedures.
4. External finish maintenance requirements.
5. List of maintenance materials required.
6. List of special tools required.
7. Parts list: List all replaceable parts, with ordering data.
8. Recommended quantity of spare parts to be maintained in storage.

J. Systems: Provide overall function description, with diagrams, prepared especially for this project.

K. Form of Data: Prepare data in the form of an instructional manual.

1. Arrange contents logically, using section numbers and sequence of sections indicated on the Table of Contents of this project manual.

2. When multiple volumes are used, arrange by related subjects; identify contents in cover title.

3. Assemble into 3-ring binders with maximum 2-inch ring size.
   a. Hardback, cleanable plastic covers.
   b. Identify each book with title "Operation and Maintenance Instructions" and project name.
   c. Page size 8-1/2 by 11 inches, maximum.
   d. Prepare special typewritten data on minimum 20-pound paper.
   e. Provide tabbed divider for each product and system.
   f. Drawings: Bind in with other data; provide reinforced binding edge; fold larger Drawings to size of pages.
      1) Do not use pockets or loose Drawings.

4. Provide Table of Contents for each volume listing:
   a. Name of the project.
   b. Name, address, telephone number, and contact name of:
      1) Architect.
      2) Contractor.
   c. Index of products and systems included in volume.

3.4 TRANSPORTATION AND HANDLING

A. Require supplier to package finished products in a manner which will protect from damage during shipping, handling, and storage.

B. Transport products by methods which avoid damage.

C. Deliver in dry, undamaged condition in manufacturer's unopened packaging.

D. Provide equipment and personnel adequate to handle products by methods which prevent damage.

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E. Provide additional protection during handling where necessary to prevent damage to products and packaging.

F. Lift large and heavy components at designated lift points only.

3.5 DELIVERY AND RECEIVING

A. Arrange deliveries of products to allow time for inspection prior to installation.

B. Coordinate delivery to avoid conflict with the Work and to take into account both the conditions at the site and the availability of personnel, handling equipment and storage space.

C. Clearly mark partial deliveries to identify contents, to permit easy accumulation of entire delivery and to facilitate assembly.

D. Promptly inspect shipments and remedy damage, incorrect quantity, incompleteness, improper or illegible labeling, and noncompliance with requirements of Bid Documents and approved submittals.

3.6 STORAGE

A. No indoor storage areas are available on-site.

B. General Storage Procedures:

1. Store products immediately on delivery.

2. Store products in accordance with manufacturer's instructions, with seals and labels intact and legible.

3. Store in a manner to prevent damage to the stored products and to the Work.

4. Store moisture-sensitive products in weathertight enclosures.

5. Store indoors if necessary to keep temperature and humidity within ranges required by manufacturer.

6. Store unpacked and loose products on shelves, in bins, or in neat groups of like items.

7. Arrange storage to provide access for inspection and inventory.

8. Periodically inspect and remedy damage and noncompliance with required conditions.

C. Loose Granular Materials: Store on solid surfaces in well-drained area; prevent mixing with foreign materials.

D. Exterior Storage:

1. Cover products subject to weather damage with impervious sheet covering; provide ventilation to avoid condensation.

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2. Provide surface drainage to prevent runoff or ponded water from damaging stored products.

3. Prevent damage and contamination from refuse and chemically injurious materials and liquids.

4. Store fabricated products on substantial platforms, blocking, or skids above the ground, sloped to drain.

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SECTION 01700 - PROJECT CLOSEOUT DOCUMENTS AND PROCEDURES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. The Work of this Section applies to all Construction Bid Documents including Drawings, Specifications, Division 1 - Miscellaneous Requirements Sections, and Specification Sections included in Part-2 through Part-6.

1.2 SUMMARY

A. Section Includes:

1. Maintenance of Project Record Documents,
2. Record drawings, including As-Built drawings,
3. Record project manual (Specifications),
4. Operation and Maintenance Manuals,
5. Warranties,
6. Extra Materials,
7. Submittals required prior to requesting for determining dates of substantial and final completion, and also prior to release of final payment(s),
8. Transmittal of Closeout Project Documents to the Owner,
9. Instructions of Owner's personnel,
10. Final Cleaning.

B. GENERAL REQUIREMENTS

1. All submittals shall indicate reference to the appropriate Architect's Project Number.

C. As-Built Drawings:

1. Full-size paper set.
2. Two (2) USB Drives.

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1.3 MAINTENANCE OF PROJECT RECORD DOCUMENTS

A. Do not use record documents of any type for construction purposes.

B. Maintain record documents in a secure location at the site while providing for access by the Contractor and the Architect during normal working hours; store in a fire-resistive room or container outside of normal working hours.

C. Record information as soon as possible after it is obtained.

D. Assign a person or persons responsible for maintaining record documents.

E. Record the following types of information on all applicable record documents:

1. Dimensional changes.

2. New and revised details.

3. Actual routing of piping and conduit.

4. Revisions to electrical circuits.

5. Actual equipment locations.

6. Sizes and routing of ducts.

7. Locations of utilities concealed in construction.

8. Particulars on concealed products which will not be easy to identify later.

9. Changes made by modifications to the Contract; note identification numbers if applicable.

10. New information which may be useful to the Owner, but which was not shown in either the Bid Documents or submittals.

1.4 RECORD AND AS-BUILT DRAWINGS

A. During the progress of the installation, the Contractor shall keep a careful record of all changes and variations in the arrangement of their Work from the layout shown on the Contract Drawings in order that the Owner may be provided with a complete set of all plans (As-Builts) showing the Work as actually installed.

1. The Contractor shall maintain complete two (2) sets of opaque prints of the Contract Drawings, marked to show changes which occur due to their Work.

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2. Where the actual Work differs from that shown on the Drawings, mark this set to show the actual Work.

3. Mark location of concealed items before they are covered by other Work.

4. Mark either record Contract Drawings or shop drawings, whichever are best suited to show the change.

5. Where changes are marked on record shop drawings, mark cross-reference on the applicable Contract Drawing.

6. When the Contractor is required by a provision of a modification to prepare a new Drawing, rather than to revise existing Drawings, obtain instructions from the Architect as to the Drawing scale and information required.

7. Keep Drawings in labeled, bound sets.
   a. Mark with red pencil.
   b. Mark Work of separate Trades with different colors of pencils.

8. Incorporate new Drawings into existing sets, as they are issued.

9. Where record drawings are also required as part of operation and maintenance data submittals, make copies from the original record drawing set.

10. As-Built Drawing Format to be submitted to the Architect:
    a. One (1) complete, legible full-size paper (hard copy) As-Built drawing set with the following information on each page:
       1) Note: "As-Built" drawing,
       2) Contractor's Firm name,
       3) Date.
    b. Two USB drives containing scanned As-Built drawings (pdf format) of the hard copy furnished to the Owner (indicated above) shall be furnished to the Owner and the Architect and as directed by the Architect.

11. Mechanical/ Electrical As-Built drawings must be submitted to the Engineer with a copy of the transmittal to the Architect. Approval must be obtained before issuing Final Certificate of Payment.

B. Record drawings shall be provided for **all Work** including but not limited to the following:

1. General Construction Work
2. Plumbing and Drainage Work
3. HVACR Work
4. Electrical Work

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1.5 PROJECT SPECIFICATION MANUAL

A. The Contractor shall maintain a complete copy of the project Specification manual, marked to show changes which occur due to their Work.

B. Where the actual Work differs from that shown in the project manual, mark the record copy to show the actual Work.

1. Include a copy of each Addendum and modification to the Contract.

2. In addition to the types of information required on all record documents, record the following types of information:
   a. Product options taken, when the Specification allows more than one.
   b. Product substitutions.
   c. Proprietary name and model number of actual products furnished, for each product, material, and item of equipment specified.
   d. Name of the supplier and installer, for each product for which neither a product data submittal nor a maintenance data submittal was specified.

1.6 OPERATION AND MAINTENANCE MANUALS

A. Assemble a complete set of operation and maintenance data indicating the operation and maintenance of each system, subsystem, and piece of equipment not part of a system. Include operation and maintenance data required in individual Specification Sections and as follows:

1. Operation Data:
   a. Emergency instructions and procedures.
   b. System, subsystem, and equipment descriptions, including operating standards.
   c. Operating procedures, including startup, shutdown, seasonal, and weekend operations.
   d. Description of controls and sequence of operations.
   e. Piping diagrams.

2. Maintenance Data:
   a. Manufacturer's information, including list of spare parts.
   b. Name, address, and telephone number of Installer or supplier.
   c. Maintenance procedures.
   d. Maintenance and service schedules for preventive and routine maintenance.
   e. Maintenance record forms.
   f. Sources of spare parts and maintenance materials.
   g. Copies of maintenance service agreements.
   h. Copies of warranties and bonds.

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B. Organize operation and maintenance manuals into suitable sets of manageable size. Bind and index data in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, in thickness necessary to accommodate contents, with pocket inside the covers to receive folded oversized sheets. Identify each binder on front and spine with the printed title "OPERATION AND MAINTENANCE MANUAL," Project name, and subject matter of contents.

C. Operation and Maintenance Manuals must be submitted to the appropriate Engineer with a copy of the transmittal to the Architect. Approval must be obtained before issuing Final Certificate of Payment.

1. Contractors shall submit electronic version of the MEP O&M manuals for review by the MEP Consultant. *Paper copies should not be submitted as part of the MEP review process.

1.7 WARRANTIES

A. Submittal Time: Submit written warranties on request of Architect for designated portions of the Work where commencement of warranties other than date of Substantial Completion is indicated.

B. Organize warranty documents into an orderly sequence based on the Table of Contents of the Project Manual.

1. Bind warranties and bonds in heavy-duty, 3-ring, vinyl-covered, loose-leaf binders, thickness as necessary to accommodate contents, and sized to receive 8-1/2-by-11-inch paper.

2. Provide heavy paper dividers with plastic-covered tabs for each separate warranty. Mark tab to identify the product or installation. Provide a typed description of the product or installation, including the name of the product and the name, address, and telephone number of Installer.

3. Identify each binder on the front and spine with the typed or printed title "WARRANTIES," Project name, and name of Contractor.

4. Warranty manual must be submitted to the Architect for review. Architect's approval must be obtained before issuing final payment.

C. Provide additional copies of each warranty to include in operation and maintenance manuals.

1.8 SUBMITTAL REQUIREMENTS - SUBSTANTIAL COMPLETION

A. Preliminary Procedures: Before requesting inspection for determining date of Substantial Completion, complete the following. List items below that are incomplete in request.

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1. Prepare a list of items to be completed and corrected (punch list), the value of items on the list, and reasons why the Work is not complete.

2. Advise Owner of pending insurance changeover requirements.

3. Submit specific warranties, workmanship bonds, maintenance service agreements, final certifications, and similar documents.

4. Obtain and submit releases permitting Owner unrestricted use of the Work and access to services and utilities. Include occupancy permits, operating certificates, and similar releases.

5. Prepare and submit Project Record Documents, operation and maintenance manuals, Final Completion construction photographs and digital images on USB drive, damage or settlement surveys and similar final record information.

6. Deliver tools, spare parts, extra materials and similar items to location designated by Owner. Label with manufacturer's name and model number where applicable.

7. Complete startup testing of systems.

8. Submit test/adjust/balance records.

9. Terminate and remove temporary facilities from the Project site, along with mockups, construction tools, and similar elements.

10. Advise Owner of changeover in heat and other utilities.

11. Submit changeover information related to Owner's occupancy, use, operation, and maintenance.

12. Complete final cleaning requirements, including touch-up painting.

13. Touch up and otherwise repair and restore marred exposed finishes to eliminate visual defects.

B. Inspection: Submit a written request for inspection for Substantial Completion. On receipt of request, Architect and Construction Manager will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare the Certificate of Substantial Completion after inspection or will notify Contractor of items, either on Contractor's list or additional items identified by Architect, that must be completed or corrected before certificate will be issued.

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected.

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2. Results of completed inspection will form the basis of requirements for Final Completion.

1.9 SUBMITTAL REQUIREMENTS - FINAL COMPLETION

A. Preliminary Procedures: Before requesting final inspection for determining date of Final Completion, complete the following:

1. Submit a final Application for Payment according to the requirements of the Bid Documents.

2. Submit certified copy of Architect's Substantial Completion inspection list of items to be completed or corrected (punch list), endorsed and dated by Architect. The certified copy of the list shall state that each item has been completed or otherwise resolved for acceptance and signed by the Contractor.

3. Submit evidence of final, continuing insurance coverage complying with insurance requirements.

4. Instruct Owner's personnel in operation, adjustment, and maintenance of products, equipment and systems. Submit demonstration and training videotapes. Provide statement signed by Owner's representatives stating that they have received the required training.

B. Inspection: Submit a written request for final inspection for acceptance. On receipt of request, Architect and Construction Manager will either proceed with inspection or notify Contractor of unfulfilled requirements. Architect will prepare a final Certificate for Payment after inspection or will notify Contractor of construction that must be completed or corrected before certificate will be issued.

1. Reinspection: Request reinspection when the Work identified in previous inspections as incomplete is completed or corrected. The cost of additional inspections required by the Architect or their consultants or the Construction Manager due to Contractor's failure to complete the punch list will be paid by the Contractor and will be deducted from the Contractor's final payment.

C. The Contractor is required to obtain all final releases from governmental and regulatory Agencies Having Jurisdiction over the project with the assistance from the Architect / Engineer and Owner (if required).

1.10 LIST OF INCOMPLETE ITEMS (PUNCH LIST)

A. Preparation: Submit three copies of list to the Architect and Construction Manager. Include name and identification of each space and area affected by construction operations for incomplete items and items needing correction including, if necessary, areas disturbed by Contractor that are outside the limits of construction.

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1. Organize list of spaces in sequential order, as applicable.

2. Organize items applying to each space by major element, including categories for ceilings, individual walls, floors, equipment, and building systems.

3. Include the following information at the top of each page:
   a. Project name.
   b. Date.
   c. Name of Architect and Construction Manager.
   d. Name of Contractor.
   e. Page number.

1.11 PROJECT RECORD DOCUMENTS

A. General: Do not use Project Record Documents for construction purposes. Protect Project Record Documents from deterioration and loss. Provide access to Project Record Documents for Architect's and Construction Manager's reference during normal working hours.

B. Record Drawings: Maintain and submit one set of blue - or black-line white prints of Contract Drawings and Shop Drawings.

1. Mark Record Prints to show the actual installation where installation varies from that shown originally. Require individual or entity who obtained record data, whether individual or entity is Installer, Subcontractor, or similar entity, to prepare the marked-up Record Prints.
   a. Give particular attention to information on concealed elements that cannot be readily identified and recorded later.
   b. Accurately record information in an understandable Drawing technique.
   c. Record data as soon as possible after obtaining it. Record and check the markup before enclosing concealed installations.
   d. Mark Contract Drawings or Shop Drawings, whichever is most capable of showing actual physical conditions, completely and accurately. Where Shop Drawings are marked, show cross-reference on Contract Drawings.

2. Mark record sets with erasable, red-colored pencil. Use other colors to distinguish between changes for different categories of the Work at the same location.

3. Mark important additional information that was either shown schematically or omitted from original Drawings.

4. Note Construction Change Directive numbers, Change Order numbers, alternate numbers, and similar identification where applicable.

5. Identify and date each Record Drawing; include the designation "PROJECT RECORD DRAWING" in a prominent location. Organize into manageable sets;

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bind each set with durable paper cover sheets. Include identification on cover sheets.

C. Record Specifications: Submit one copy of Project's Specifications, including Addenda and Contract modifications. Mark copy to indicate the actual product installation where installation varies from that indicated in Specifications, Addenda, and Contract modifications.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.

2. Mark copy with the proprietary name and model number of products, materials, and equipment furnished, including substitutions and product options selected.

3. Note related Change Orders, Record Drawings and Product Data, where applicable.

D. Record Product Data: Submit one copy of each Product Data submittal. Mark one set to indicate the actual product installation where installation varies substantially from that indicated in Product Data.

1. Give particular attention to information on concealed products and installations that cannot be readily identified and recorded later.

2. Include significant changes in the product delivered to Project site and changes in manufacturer's written instructions for installation.

3. Note related Change Orders, Record Drawings, and Record Specifications, where applicable.

E. Miscellaneous Record Submittals: Assemble miscellaneous records required by other Specification Sections for miscellaneous record keeping and submittal in connection with actual performance of the Work. Bind or file miscellaneous records and identify each, ready for continued use and reference.

1.12 DEMONSTRATION AND TRAINING

A. Instruction: Instruct Owner's personnel to adjust, operate, and maintain systems, subsystems, and equipment not part of a system.

1. Provide instructors experienced in operation and maintenance procedures.

2. Provide instruction at mutually agreed-on times. For equipment that requires seasonal operation, provide similar instruction at the start of each season.

3. Schedule training with Owner, through Architect and Construction Manager, with at least seven calendar days advance notice.

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4. Coordinate instructors, including providing notification of dates, times, length of instruction and course content.

B. Program Structure: Develop an instruction program that includes individual training modules for each system and equipment not part of a system, as required by individual Specification Sections. For each training module, develop a learning objective and teaching outline. Include instruction for the following:

1. System design and operational philosophy.
2. Review of documentation.
3. Operations.
4. Adjustments.
5. Troubleshooting.
6. Maintenance.
7. Repair.

1.13 FINAL CLEANING

A. General: Provide final cleaning. Conduct cleaning and waste-removal operations to comply with local laws and ordinances and Federal and local environmental and antipollution regulations.

1. Refer to other Division 1 - Specification sections for additional cleaning as required and where applicable.

B. Cleaning: Employ experienced workers or professional cleaners for final cleaning. Clean each surface or unit to condition expected in an average commercial building cleaning and maintenance program. Comply with manufacturer's written instructions.

1. Complete the following cleaning operations before requesting inspection for certification of Substantial Completion for entire Project or for a portion of Project:
   a. Clean Project site, yard, and grounds, in areas disturbed by construction activities, including landscape development areas, of rubbish, waste material, litter, and other foreign substances.
   b. Sweep paved areas broom clean. Remove petrochemical spills, stains, and other foreign deposits.
   c. Rake grounds that are neither planted nor paved to a smooth, even-textured surface.
   d. Remove tools, construction equipment, machinery, and surplus material from Project site.
   e. Remove snow and ice to provide safe access to building.
   f. Clean exposed exterior and interior hard-surfaced finishes to a dirt-free condition, free of stains, films, and similar foreign substances. Avoid disturbing natural weathering of exterior surfaces. Restore reflective surfaces to their original condition.
   g. Remove debris and surface dust from limited access spaces, including

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roofs, plenums, attics and similar spaces.

h. Sweep concrete floors broom clean in unoccupied spaces.

i. Vacuum carpet and similar soft surfaces, removing debris and excess nap; shampoo if visible soil or stains remain.

j. Clean transparent materials, including mirrors and glass in doors and windows. Remove glazing compounds and other noticeable, vision-obscuring materials. Replace chipped or broken glass and other damaged transparent materials. Polish mirrors and glass, taking care not to scratch surfaces.

k. Remove labels that are not permanent.

l. Touch up and otherwise repair and restore marred, exposed finishes and surfaces. Replace finishes and surfaces that cannot be satisfactorily repaired or restored or that already show evidence of repair or restoration.

(1) Do not paint over "UL" and similar labels, including mechanical and electrical nameplates.

m. Wipe surfaces of mechanical and electrical equipment and similar equipment. Remove excess lubrication, paint and mortar droppings and other foreign substances.

n. Replace parts subject to unusual operating conditions.

o. Heating, Ventilating Air Conditioning Work and Refrigeration Contractor shall replace disposable air filters and clean permanent air filters. Clean exposed surfaces of diffusers, registers, and grills.

1) Clean ducts, blowers, and coils if units were operated without filters during construction.

p. Electrical Work Subcontractor shall clean light fixtures, lamps, globes, and reflectors to function with full efficiency. Replace burned-out bulbs, and those noticeably dimmed by hours of use, and defective and noisy starters in fluorescent fixtures to comply with requirements for new fixtures.

q. Leave Project clean and ready for occupancy.

r. Comply with safety standards for cleaning. Do not burn waste materials. Do not bury debris or excess materials on Owner's property. Do not discharge volatile, harmful, or dangerous materials into drainage systems. Remove waste materials from Project site and dispose of lawfully.

1.14 TRANSMITTAL TO OWNER

A. Collect, organize, label, and package ready for reference.

1. Provide cardboard file boxes for submittals.

2. Provide cardboard drawing tubes with end caps for transparencies.

3. Bind print sets with durable paper covers.

4. Label each document (and each sheet of Drawings) with "PROJECT RECORD DOCUMENTS - This document has been prepared using information furnished by _____" [insert the Contractor's name], and the date of preparation.

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B. Submit to the Architect for transmittal to the Owner, unless otherwise indicated.

1.15 REMOVE TEMPORARY FACILITIES

A. At the completion of the Work prior to final payment, remove all temporary facilities entirely from the site, including, but not limited to, the following:

1. Trailers, temporary toilets, temporary enclosures, dust barriers and other temporary protection devices.

1.16 SUBMITTALS REQUIRED PRIOR TO FINAL PAYMENT

A. Contractor must satisfy all requirements of Sections 01700 and 01900 prior to submitting for Final Payment.

B. A closeout checklist will be provided to the Contractor when they substantially complete. The Contractor is instructed to mark each submittal with the corresponding item number on the checklist. All warranties must have the Owner Name, Project Name, Architect Project Number and Warranty Periods. If all documents are not received in this format, the submittal will be rejected and the Contractor will be instructed to pick these documents up at the Architect's office for correction.

C. Submittals required prior to final payment shall be in accordance with "Checklist" include, but are not limited to, the following items:

1. Completed Operations Insurance Certificate - ACORD Form.

2. Affidavit of Payment of Debts and Claims - AIA Document G706.

3. Affidavit of Release of Liens - AIA Document G706A.

4. Consent of Surety Company to Final Payment - AIA Document G707.

5. Certification of Wages in accordance with New Jersey Prevailing Wage Act, N.J.S.A. 34:11-56.25 et seq.

6. 10% two year Maintenance Bond on the form provided in this Specification.

7. Manufacturers' product warranties, Special written guarantees and warranties, maintenance warranty, etc. in accordance with Section 01900, various Specification sections and the Table of Contents of the Project Manual. This is in addition to the two-year guarantee covered by the Maintenance Bond and in addition to the Contractor's two-year guarantee.
   a. Guarantee shall be signed and sealed by Officer of the Contracting Firm and shall be notarized.

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8. Project Record Drawings, (As-Built Drawings), Record Specifications, Record Product Data, and Miscellaneous Record Submittals.
    a. Note: As-Built Drawings shall be submitted to the appropriate Engineer(s)/ Architect.

9. Operation and Maintenance Manuals and Instructions.
    a. Note: Operation and Maintenance Manuals shall be submitted to the appropriate Engineer(s) / Architect.

10. Balancing Reports for Heating, Ventilating, Air Conditioning and Refrigeration systems.

11. Certificate of Occupancy / Copies of all Building Department inspection approvals.

12. In accordance with requirements of N.J.S.A. 52:32-44. Contractor must submit accurate list of all Subcontractors and suppliers. Contractor must provide a certification that all proofs of business registration for all Subcontractors and suppliers are maintained on their file.

13. All approvals and final releases from governmental and regulatory Agencies Have Jurisdiction including, but not limited to: NJDCA, Local Construction Department, NJDEP, etc., as required.

END OF SECTION 01700

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CLOSEOUT CHECKLIST

SAMPLE

Owner		
Title		
Project #		**Contract:**
Contractor		
Substantial Completion Date:		**Updated:**

Refer to Sections 01700 and 01900. Contractor is instructed to mark each submited item with the corresponding item number of the checklist. All warranties must have the Owner Name, Project Name, Architect Project # and Warrranty Periods. As-built drawings, O&M Manuals, Reports Certifications, Warranties, Punch List must be submitted to Architect and Engineeer for review. One hard copy and one USB drive containing all approved closeout documents required for Owner record.

Item No.	Documents & Warranties Required For Closeout	Status
1	Contractor letter stating date of substantial completion and requesting punch list review to Architect & Engineer on company letterhead.	
2	Completed Operations Insurance Certificate - ACORD Form	
3	Contractor Completed Operation Insurance Statement evidence of continuing insurance coverage.	
4	Certificate of Substantial Completion	
5	Final Punch list signed and dated indicating completion of all work	
6	Affidavit of Payment of Debts & Claims	
7	Affidavit of Release of Liens	
8	Consent of Surety to Final Payment	
9	Certification that all wages have been paid - NJ Prevailing Wage Act, N.J.S.A. 34:11-56.25	
10	Contractor statement on company letterhead certifying all certified payroll and manning reports have been sent to the Owner.	
11	10% 2-year Maintenance Bond - must be on form provided in spec book.	
12	Contractor 2-year Guarantee coverd by Maintenance Bond to repair/replace defective materials and/or labor of products installed in the project.	
13	Record Drawings: complete set of permit bid set drawings - indicate any changes that occurred during construction in red and label "As-built" with Company name, address, and date (1 paper set and 1 USB Drive)	
14	Record Project Manual including Addenda, indicating actual product installation or submit letter on Company letterhead stating no variations from Specifications, Addenda and Contract modifiations.	
15	Operation Instructions & Maintenance Manuals - submit one 3-ring binder with table of contents and divider tabs in order of Project Manual TOC and specification section # indicated. Also provide USB drive with same)	
16	Balancing & Testing Reports (HVAC)	
17	Fire Alarm Certification (ELECTRICAL)	
18	Certificate of Occupancy/Approval/Acceptance with copies of all Bldg. Dept. inspection approvals.	
19	Submit accurate list of all subcontractors and suppliers and provide a certification that all proofs of business registration for all subcontractors and suppliers are maintained on their file.	
20	Submit copy of paid statement from Roofing manufacturer for all materials including cost of the roof warranty. Original signed and notarized letter from the roofing manufacturer (on their letterhead) which certifies that the Contractor has paid the roofing manufacturer in full including cost of the roofing warranty.	

CLOSEOUT CHECKLIST

SAMPLE

Owner		
Title		
Project #		**Contract:**
Contractor		
Substantial Completion Date:		**Updated:**
Refer to Sections 01700 and 01900. Contractor is instructed to mark each submited item with the corresponding item number of the checklist. All warranties must have the Owner Name, Project Name, Architect Project # and Warrranty Periods. As-built drawings, O&M Manuals, Reports Certifications, Warranties, Punch List must be submitted to Architect and Engineeer for review. One hard copy and one USB drive containing all approved closeout documents required for Owner record.		
Item No.	**Documents & Warranties Required For Closeout**	**Status**
21	Statement on company letterhead guaranteeing drain lines from the roof were electrically cleaned to invert house storm sewer using power rooter (Roto-Rooter). Contractor shall provide certification that is work has been satisfactorily performed.	
22	All approvals and final releases from governmental and regulatory agencies have jurisdiction including, but not limited to: NJDCA, Local Construction Department, NJDEP, etc., as required.	
23	All approved project submittals/shop drawing on a USB drive	
24	Final Payment Application w/Board Voucher/Invoice	
	Warranties - organized under separate tab in O&M Manual in orderly sequence based on the Project Manual table of contents. All Warranties must have the Owner Name, Project Name, Project Number and Warranty Periods.	**Refer to Section 01900**

SECTION 01800 - TIME OF COMPLETION AND LIQUIDATED DAMAGES

PART 1 - GENERAL

1.1 SUMMARY

A. This section describes the requirements for completion of interim milestone events and final completion of all work required by the Bid Documents.

B. Related Sections:

1. Items of Work attached to the "Certificate of Substantial Completion" and establishing "Final Completion Time" as per Section 00800.

C. This section also establishes the relation of liquidated damages for failure to complete the interim milestone events or final completion requirements within the time requirements stated herein.

D. **The building (or part of the building) will be occupied at all times. The Contractor shall maintain heat, electric, fire safety systems and emergency egress paths, control dust and water infiltration at all times.**

1.2 TIME FOR COMPLETION

A. It is understood that the Contractor has a responsibility to complete its work in sequence with the work of their Subcontractor(s) and to allow the Subcontractor(s) access to the Work site so that they may complete their Work within the times established.

B. Completion of the Contract Work by the Contractor shall be time of the essence.

C. The Contractor shall Work overtime, additional shifts, weekends or holidays to complete the Work on time with no additional cost to the Owner.

1. Scarce resources will be no excuse for not completing the Work on time.

2. **No Work may take place during the school day in any occupied area. All Work, in occupied areas, shall be performed on second shift (3:00 PM - 11:00 PM) until June 22, 2026, and after August 21, 2026 through June 20, 2027. Only limited / selective Work is permitted. Contractor must review proposed Work activities and have approval of Owner and Architect prior to proceeding.**

3. **Work may take place during regular shift and second shift (7:00 AM - 10:00 PM) after June 22, 2026 through August 27, 2026 and after June 21, 2027 through August 27, 2027 ; however, the Contractor is required to review and coordinate all Work activities with the Architect and School Facilities Director prior to commencing with the Work.**

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a. **Contractor to review permitted Work hours to comply with the local "Noise Ordinance".**

4. **Contractor is required to include the cost of any premium time, second shift and weekend Work which may be required in their bid to complete the Work within the indicated milestone dates.**

D. Substantial and final completion of the Work shall include but is not limited to final inspection and acceptance by the Local Building Officials.

1.3 BUILDING ENCLOSURE

A. The building shall be considered "enclosed" when:

1. Roofing repairs and flashing is installed and in watertight condition.

1.4 SEQUENCE OF CONSTRUCTION

A. In order to allow the Prime Contractor and Subcontractor(s) to understand the requirements of the Project, the following general sequence of construction Work will be followed:

1. Generally, the HVAC Contractor is to schedule, sequence and coordinate the Work with Subcontractors, as required, to logically progress the Work, meeting the overall design intent, construction quality and time of completion. **Schedule inspections and obtain required approvals of all stages of the Work as required by the Local Construction Officials.**

2. Proper scheduling of the Work includes timely sequencing, preparation, review and approval by the Prime Contractor and **submission of requisite technical and other project submittals and shop drawings** to the Architect / Engineer(s) for approval to advance the proper, logical progression of the Work.

3. After mobilization and securing the Work site, the HVAC Contractor is to perform selective demolition of existing construction, layout and coordinate the proposed new construction with existing construction to remain, as noted on the Construction Drawings.
   a. Apply for and obtain demolition permit to allow commencement of the Work while permit applications for new Construction are under review by the Construction Official.

4. Sequentially Work to achieve **weather-tight building enclosure** with completed HVAC Replacement Work and roofing repairs, as required, to facilitate interior Work including, but not limited to, interior partitions and building finishes.

5. Progress the Work of all Trades towards completion, as required, by the Bid Documents to obtain **Substantial Completion** including, inspection and testing

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by local construction officials, commissioning, testing and balancing of the HVAC, Automatic Temperature Controls and Electrical Work to obtain the Certificate of Occupancy.

8. Provide written formal notification of **Substantial Completion** to the Architect / Engineer and request Punch-List Observations.

9. Complete proper preparation, review and approval by the Prime Contractor and submission of all Close-out Documents, Operation and Maintenance Manuals, As-built surveys and drawings to the Architect / Engineer(s) within contract time required to achieve **Final Completion**.

1.5 PROJECT CONTRACT MILESTONE DATES

A. TIME OF COMPLETION

1. **Milestone No. 1**
   a. Sign Contract, no later than **twenty (20)** calendar days, Sundays and Holiday's excepted, from **Notice of Award;** on or about **December 19, 2025.**
   b. Contractor submits Bonds and Insurance **ten (10) calendar days from Notice of Award, Sundays and holidays excepted**.
   c. **Notice to Proceed** shall be within **three (3) business days** of date of signing Contract; on or about **January 16, 2026.**

2. **Milestone No. 2**
   a. **Time Critical submittals** for special equipment, fixtures, etc. shall be submitted within **twenty (20) calendar days from Notice to Proceed.**

3. **Milestone No. 3**
   a. Submission of all remaining technical shop drawing submittals shall be submitted within **forty-five (45) calendar days from Notice to Proceed.**

4. **Milestone No. 4**
   a. Physical Work at the site shall commence on or about **June 22, 2026.**

5. **Milestone No. 5**
   a. Substantial Completion of the entire project shall be on or before **589 Calendar Days from the Notice to Proceed, August 27, 2027.**
   b. Liquidated Damages - $2,000.00 / Calendar day of delay.

6. **Milestone No. 6**
   a. Final Completion of all Work including punch list items and closeout documents, no later than **31 Calendar Days from Substantial Completion, September 27, 2027.**
   b. Liquidated Damages - $2,000.00 / Calendar day of delay.

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1.6 LIQUIDATED AND OTHER DAMAGES

A. By bidding the Project, the Contractor is accepting that the time allotted for the completion of Work is reasonable. Completion of Work on or about these milestones are prerequisites for the coordinated Work of all Contractors. When the Owner will suffer financial loss and/or extra cost if a milestone task is not completed within the allotted time, the Contractor responsible for the delay in achievement of each milestone, as determined by the Owner's Project Manager and the Architect, shall pay to the Owner a fixed, agreed sum as liquidated damages for each calendar day of delay until the milestone task is substantially completed.

B. The Liquidated Damages set for above shall be in addition to other consequential losses or damages the Owner may incur by reason of such delay, such as, but not limited to, the cost of additional architectural and engineering, independent third party inspection and other services resulting from the delay, additional costs to the Owner for payments to other Contractors resulting from delay.

C. Liquidated Damages are fixed and agreed upon by and between the Contractor and the Owner because of the impracticality and extreme difficulty of fixing and ascertaining the actual damages the Owner would in such event sustain, and said amounts shall be retained from time to time by the Owner for the current periodical payments.

    1. The Liquidated Damages set for above are intended to compensate Owner for loss of use during the period of delay, for other delay during construction which may result further delay in substantial and/or final completion dates and for any acceleration costs by Contractors to recover the defaulting (Sub)Contractor's delay.

    2. In no way shall costs of Liquidated Damages be construed as a penalty to the Contractor.

D. The Owner shall have the right to deduct the total amount any Liquidated Damages for which the Contractor may be liable from any monies otherwise due the Contractor, including any retainage under control of the Owner.

E. The Surety providing the Performance Bond, furnished by the Contractor, will be liable for Liquidated Damages assessed against the Contractor, to the extent that the Contractor shall not make settlement thereof with the Owner.

F. The Contractor agrees that in the event the Owner is required to incur or advance any additional necessary and reasonable costs (including but not limited to Architect, Attorney or other fees related expenses), as a result of the failure of the Contractor to perform any obligation of this Contract or to perform its obligations in a timely manner as required by the Bid Documents, the Contractor agrees that such additional

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necessary and reasonable costs shall be borne by the Contractor and may be deducted by the Owner from any payment due the Contractor.

G. In accordance with N.J.S.A. 18A:18A-19, the Owner shall deduct from the Contract Price, for any wages paid by the Owner to any inspector or inspectors necessarily employed by for the Work of this project, for any number of days in excess of the number of days or indicated dates allowed in milestones above. Such sums shall be part of the Liquidated Damages indicated herein after.

END OF SECTION 01800

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SECTION 01900 - GUARANTEES AND WARRANTIES

PART 1 - GENERAL

1.1 CONTRACT

A. Period for all guarantees and warranties shall commence at date of substantial completion for the entire project, as determined by the Architect.

B. The Contractor's guarantee on all work, covered by Maintenance Bond. . . .**Two (2) Yrs.**

1. The Maintenance Bond shall represent a continuing obligation of the Prime Contractor and their Subcontractor(s) to repair/replace defective materials and/or labor of products installed in the project for **two (2) years** from the date of Substantial Completion.

C. Provide all required warranties indicated in Specification sections which include but not limited to the following:

1.2 GENERAL CONSTRUCTION WORK

A. Metal Fabrications as specified in Section 05500.

1. Stack Jack Flashings (Roof Guard Railing):
   a. Provide manufacturer's standard **twenty (20) year warranty** against leaks, condensation and defects in materials and other manufacture when installed in accordance with the manufacturer's instructions.

2. Rail Post Roof Supports:
   a. Provide manufacturer’s standard **twenty (20) year** warranty against leaks, condensation and defects in materials and other manufacture when installed in accordance with the manufacturer’s instructions.

3. Guy Wire Roof Supports:
   a. Provide manufacturer's standard **twenty (20) year warranty** against leaks, condensation and defects in materials and other manufacture when installed in accordance with the manufacturer's instructions.

B. Agreement to Maintain Roofing

1. Roofing Contractor shall agree to maintain the roof systems and related roof sheet metal work in a weathertight and watertight condition for a period of **two (2) years** starting from the date of Owner's acceptance in accordance with special Maintenance Contract outlined herein.

2. During the Maintenance Period, the Roofing Contractor agrees that within 24 hours of receipt of notice from the Owner they will inspect and make immediate

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emergency repairs to defects or to leaks in the roof systems and related flashing work. They further agree that within a reasonable time, they will restore the affected items to the standard of the original Specifications. All emergency and permanent work during the life of the agreements to maintain the roof systems will be done without cost to the Owner, except in the event it is determined that such leaks were caused by abuse, lightning, hurricanes, tornado, hailstorm, other unusual climatic phenomena of the elements, or failure of related work (except related roof sheet metal work included under the Agreement) installed by other parties.

3. Agreement to maintain roofing system shall be in a written form acceptable to the Owner.

C. Flashing, Sheetmetal and Roof Accessories as specified in Section 07600.

1. Warrant Fluoropolymer coating to remain free, under various atmospheric conditions, from peeling, checking, or cracking, and chalking in excess of numerical rating of 8 when measured in accordance with ASTM D659-86, or fading in excess of 5 N.B.S. units during warranty period.
   a. The Warranty period shall be **twenty (20) years** which starts on the approved date of Substantial Completion.

D. Joint Sealer Assemblies as specified in Section 07900.

1. Special Installer's Warranty: Written warranty, signed by Installer agreeing to repair or replace elastomeric joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
   a. Warranty Period: **Five (5) years** from date of Substantial Completion.

2. Special Manufacturer's Warranty: Written warranty, signed by elastomeric sealant manufacturer agreeing to furnish elastomeric joint sealants to repair or replace those that do not comply with performance and other requirements specified in this Section within specified warranty period.
   a. Warranty Period: **Five (5) years** from date of Substantial Completion.
   b. Submit two (2) copies of written guarantee for all sealant work of this section signed by the Contractor and the sealant manufacturer for a period of **five (5) years** from the date of acceptance by the Owner.
   c. Guarantee shall further state that all exterior sealant will be guaranteed against:
      1) Adhesive or cohesive failure in joints where movement is under maximum 25% extension or compression.
      2) Any crazing greater than 3 mils in depth developing on surface of material.

E. Acoustical Ceilings and Suspension System as specified in Section 09510.

1. Special Manufacturer's Warranty: Written warranty, signed by the ceiling manufacturer agreeing to furnish ceiling materials and replace those that do not comply with performance and other requirements specified in this Section within specified warranty period.

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2. Warranty Period: **Thirty (30) year** System Performance Guarantee against visible sag, Mold/Mildew and Bacteria Growth.

1.3 PLUMBING WORK

A. Drawing P-03:

1. All work shall be guaranteed to be free from defects in workmanship and materials.

2. During the guarantee period any defects in workmanship, material or equipment will be corrected at the contractor's expense. Any damage or loss, exclusive of building's contents, due to such defects, will be remedied within a reasonable time, as specified in notice from the Engineer. After the specified time, Owner may have defects and damages remedied at the contractor's expense.

3. Guarantee period shall be **two (2) years**.

4. Guarantee period shall start when the work included in contract documents is accepted by the Owner and/or receipt of the certificate of occupancy.

1.4 HEATING, VENTILATING, AIR CONDITIONING AND REFRIGERATION WORK

A. Drawing M-09:

1. Provide with single zone VAV controller, 2" double wall construction, Bacnet MSTP, VFD for supply air fan, non-fused disconnect switch, phase protection, 115V outlet, fully modulating enthalpy economizer with barometric relief, down flow economizer rain hood, SS drain pan, premium efficiency motor, modulating OA and RA dampers for 100% economizer operation, hot gas reheat coil, dehumidification control, clogged filter and condensate overflow switches, remote safety shutdown terminals, digital temperature and humidity sensor, return air smoke detector, refrigerant safety system compliant with IMC. **Two (2) year warranty** on all parts and labor and a **four (4) year extended warranty** on compressors.

2. Provide 2" R13 double wall construction with thermal break, VFD for supply air fan, premium efficiency motor, weather hoods, stainless steel drain pan, outside air dampers and actuators, fan isolation, clogged filter switch, digital temperature space sensor, 14" seismic roof curb, direct drive plenum fan & 115V convenience outlet. Provide **two (2) year warranty** parts and labor.

3. Provide with constant airflow volume controller, 2" R13 double wall construction, digital space temperature sensor, Bacnet MSTP, Non-fused disconnect switch, 115V outlet, phase protection, clogged filter switch, remote safety shutdown terminals, VFD for supply fan, premium efficiency motor, air flow monitoring station for OA, seismic 2" insulated plenum roof curb (bottom solid), contractor shall cut openings in field and specify location of divider between supply and return air openings, modulating gas heat with 10:1 turndown, **two (2) year warranty** on all parts and labor.

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4. Provide with constant airflow volume and MUA controller, 2" R13 double wall construction, digital space temperature sensor, supply and OA temp. sensors, Bacnet MSTP, non-fused disconnect switch, 115V outlet, phase protection, clogged filter switch, remote safety shutdown terminals, VFD for supply fan, premium efficiency motor, air flow monitoring station for OA, 14" seismic roof curb (transition to existing ductwork to be achieved in curb. Contractor shall verify height of curb during shop drawings submittal), stainless steel hex with modulating gas heat with 10:1 turndown, **two (2) year warranty** on all parts and labor.

5. Provide with variable airflow volume controller, 2" R13 double wall construction, digital space temperature & humidity sensor, modulating hot gas reheat, Bacnet MSTP, non-fused disconnect switch, 115V outlet, phased protection, clogged filter switch, remote safety shutdown terminals, fully modulating enthalpy economizer, digital scroll compressor, A2L refrigerant safety system compliant with 2024, SS drain pan, VFD for supply fan, premium efficiency motor, barometric relief, air flow monitoring station for OA, modulating OA and RA dampers for 100% economizer operation, ECM controlled condenser fan, stainless steel hex with modulating gas heat with 18:1 turndown (RTU-K-1), 24" seismic 2" insulated plenum roof curb(Bottom solid), contractor shall cut openings in field and specify location of divider between supply and return air openings during shop drawing submittal, **two (2) year warranty** on all parts and labor and **four (4) year extended warranty** on compressor parts.

6. Provide with variable airflow volume controller, 2" R13 double wall construction, digital space temperature & humidity sensor, modulating hot gas reheat, Bacnet MSTP, non-fused disconnect switch, 115V outlet, phased protection, clogged filter switch, remote safety shutdown terminals, fully modulating enthalpy economizer, digital scroll compressor, A2L refrigerant safety system compliant with IMC 2024, SS drain pan, VFD for supply fan, premium efficiency motor, barometric relief, air flow monitoring station for OA, modulating OA and RA dampers for 100% economizer operation, ECM controlled condenser fan, 14" seismic roof curb, **two (2) year warranty** on all parts and labor and **four (4) year extended warranty** on compressor parts.

B. Drawing M-11:

1. All work shall be guaranteed to be free from defects in workmanship and materials.

2. During the guarantee period any defects in workmanship, material or equipment will be corrected at the contractor's expense. Any damage or loss, exclusive of building's contents, due to such defects, will be remedied within a reasonable time, as specified in notice from the Engineer. After the specified time, Owner may have defects and damages remedied at the contractor's expense.

3. Guarantee period shall be **two (2) years**.

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4. Guarantee period shall start when the work included in contract documents is accepted by the Owner and/or receipt of the certificate of occupancy.

1.5 ELECTRICAL WORK

A. Drawing E-07:

1. All work shall be guaranteed to be free from defects in workmanship and materials.

2. During the guarantee period any defects in workmanship, material or equipment will be corrected at the contractor's expense. Any damage or loss, exclusive of building's contents, due to such defects, will be remedied within a reasonable time, as specified in notice from the Engineer. After the specified time, Owner may have defects and damages remedied at the contractor's expense.

3. Guarantee period shall be **two (2) years**.

4. Guarantee period shall start when the work included in contract documents is accepted by the Owner and/or receipt of the certificate of occupancy.

END OF SECTION 01900

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PART 2 - GENERAL CONSTRUCTION WORK

SECTION 02070 - SELECTIVE DEMOLITION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 DESCRIPTION OF WORK

A. Extent of selective demolition Work is indicated on the Drawings.

B. Type(s) of Selective Demolition Work: Demolition requires the selective removal and subsequent offsite disposal of the following:

1. Portion(s) of building structure as indicated on Drawings, as required to accommodate new construction.

2. Removal and protection of existing fixtures and equipment items indicated as "salvage", and reinstallation and/or deliver to the Owner.

C. Removal Work Specified Elsewhere:

1. Mechanical and Electrical Work - Cutting non-structural masonry walls for above grade piping, conduit, duct work is included with the Work of the respective mechanical and electrical trades.

D. Related Work Specified Elsewhere:

1. Remodeling construction Work and patching is included within the respective sections of Specifications, including removal of materials for re-use and incorporated into remodeling or new construction.

1.3 SUBMITTALS

A. Proposed Demolition Activities: Submit schedule indicating proposed methods and sequence of operations for selective demolition Work to Owner's Representative for review prior to commencement of Work. Provide starting and ending dates for each activity as appropriate.

1. Include coordination for shut-off, capping, and continuation of utility services, as required, together with details for dust and noise control protection.

2. Provide detailed sequence of demolition and removal Work to ensure uninterrupted progress of Owner's on-site operations.

3. Sequence construction so as to minimize obstruction of exits and provide temporary alternate exits, as required by Authorities Having Jurisdiction.

4. Coordinate with Owner's continuing occupation of portions of existing building, and with Owner's reduced usage during summer months.

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B. Photographs: Photograph existing conditions of structure, surfaces, equipment or surrounding properties which could be misconstrued as damage resulting from selective demolition work; file with Owner's Representative prior to starting Work.

C. Project Record Documents: Indicate unanticipated structural, electrical, or mechanical conditions.

1.4 JOB CONDITIONS

A. Occupancy: Owner will be continuously occupying areas of the building immediately adjacent to areas of selective demolition. Conduct selective demolition Work in manner that will minimize need for disruption of Owner's normal operations. Provide minimum of 72 hours advance notice to Owner of demolition activities which will severely impact Owner's normal operations.

B. Condition of Structures: Owner assumes no responsibility for actual condition of items or structures to be demolished.

1. Conditions existing at time of commencement of this Contract will be maintained by Owner insofar as practicable. However, variations within structure may occur by Owner's removal and salvage operations prior to start of selective demolition Work.

C. Protections: Provide temporary barricades and other forms of protection, as required, to protect Owner's personnel and general public from injury due to selective demolition Work.

1. Provide protective measures , as required, to provide free and safe passage of Owner's personnel and general public to and from occupied portions of building.

2. Protect existing finish Work, from being damaged during the project, which is to remain in place and becomes exposed during demolition operations.

3. Protect floors with suitable coverings so as to leave the flooring in same condition at end of job.

4. Construct temporary insulated solid dustproof partitions, where required, to separate areas where noisy or extensive dirt or dust operations are performed. Equip partitions with dustproof doors, if required.

5. Remove protections at completion of Work.

D. Damages: Promptly repair damages caused to adjacent facilities by demolition Work at no cost to Owner, including but not limited to concealed interior and exterior utility lines not properly investigated by the Contractor, prior to commencement of demolition Work.

E. Traffic: Conduct selective demolition operations and debris removal in a manner to ensure minimum interference with roads, streets, walks, and other adjacent occupied or used facilities.

1. Do not close, block or otherwise obstruct streets, walks or other occupied or used facilities without written permission from Authorities Having Jurisdiction. Provide

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alternate routes around closed or obstructed traffic ways, if required by governing regulations.

F. Explosives: Use of explosives will not be permitted.

G. Utility Services: Maintain existing interior and exterior utilities indicated to remain, keep in service, and protect against damage during demolition operations.

1. Do not interrupt existing utilities serving occupied or used facilities, except when authorized in writing by Authorities Having Jurisdiction. Provide temporary services during interruptions to existing utilities, as acceptable to governing authorities.

PART 2 - PRODUCTS (Not Applicable).

PART 3 - EXECUTION

3.1 INSPECTION

A. Prior to commencement of selective demolition Work, inspect areas in which Work will be performed.

1. **Photograph existing conditions of structure, surfaces, equipment or surrounding properties which could be misconstrued as damage resulting from selective demolition work; file with Owner's Representative prior to starting work.**

2. Commencement of work shall constitute acceptance of conditions. Any necessary remedial work required to correct any unsatisfactory conditions, found after the start of installation, will be provided at no cost to the Owner.

3. Prior to the commencement of work review the demolition activities with the Owner's representative to identify additional salvage items requested by the Owner.

3.2 PREPARATION

A. Cover and protect furniture, equipment and fixtures to remain from soiling or damage when demolition Work is performed in rooms or areas from which such items have not been removed.

B. Erect and maintain dust-proof partitions and closures, as required, to prevent spread of dust or fumes to occupied portions of the building.

1. Provide weatherproof closures for exterior openings resulting from selective demolition Work.

C. Locate, identify, stub off and disconnect utility services that are not indicated to remain.

1. Provide by-pass connections as necessary to maintain continuity of service to occupied areas of building. Provide minimum of 72 hours advance notice to Owner if shut-down of service is necessary during change-over.

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3.3 DEMOLITION

A. Perform selective demolition Work in a systematic manner. Use such methods, as required, to complete work indicated on Drawings in accordance with demolition schedule and governing regulations.

1. Demolish masonry in small sections. Cut masonry at junctures with construction to remain using power-driven masonry saw or hand tools; do not use power-driven impact tools.
    a. The Contractor shall use caution when cutting into existing masonry construction (eg.: single wythe wall construction) as there may be un-documented utilities within the cavity or built into the cores of cmu wall construction. The Contractor shall perform all necessary investigation prior to demolition Work to determine the presence of existing utilities within construction to be demolished, including but not limited to radar, thermal, impact echo, etc. The Contractor shall pay for restoring / repairing the existing construction if utilities are cut and proper selective demolition investigation Work was not performed. Refer to Section 01050.

2. Locate demolition equipment throughout structure and promptly remove debris to avoid imposing excessive loads on supporting walls, floors or framing.

3. Provide services for effective air and water pollution controls, as required by Authorities Having Jurisdiction.

4. For interior slabs on grade, use removal methods that will not crack or structurally disturb adjacent slabs or partitions. Use power saw where possible.

B. If unanticipated mechanical, electrical or structural elements which conflict with intended function or design are encountered, investigate and measure both nature and extent of the conflict. Submit report to Owner's Representative / Architect in written, accurate detail. Pending receipt of directive from Owner's Representative / Architect rearrange selective demolition schedule as necessary to continue overall job progress without delay.

3.4 SALVAGE MATERIALS

A. Salvage Items: Where indicated on Drawings as "Salvage-Deliver to Owner", carefully remove indicated items, clean, store and turn over to Owner and obtain receipt.

1. Unless otherwise indicated all materials, items, equipment, etc. resulting from demolition Work shall be removed from the site at the Contractor’s expense.

B. Historic artifacts and other articles of historic significance remain the property of the Owner. Notify Owner's Representative if such items are encountered and obtain acceptance regarding method of removal and salvage for Owner.

3.5 DISPOSAL OF DEMOLISHED MATERIALS

A. Remove debris, rubbish and other materials resulting from demolition operations from building site. Transport and legally dispose of materials off-site.

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B. If hazardous materials are encountered during demolition operations, notify the Owner's Representative immediately, comply with applicable regulations, laws, and ordinances concerning removal, handling and protection against exposure or environmental pollution.

C. Burning of removed materials is not permitted on project site.

3.6 CLEAN-UP AND REPAIR

A. Upon completion of demolition work, remove tools, equipment and demolished materials from site. Remove protections and leave interior areas broom clean.

B. Repair demolition performed in excess of that required. Return structures and surfaces to remain to condition existing prior to commencement of selective demolition Work. Repair adjacent construction or surfaces soiled or damaged by selective demolition Work.

END OF SECTION 02070

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SECTION 04200 - UNIT MASONRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 DESCRIPTION OF WORK

A. Extent of each type of masonry work is indicated on Drawings.

B. Type of masonry work required includes:

1. Concrete unit masonry.
2. Mortar and grout.
3. Reinforcement, anchorage, and accessories.
4. Concrete masonry lintels and bond beams.
5. Installation of miscellaneous loose steel lintels, plates and other steel fabrications.

C. Related Work:

1. Section 07900 - Joint Sealer Assemblies
2. Section 09900 - Painting of exposed to view CMU surfaces
3. Mechanical Work - Refer to the Drawings and Specifications on the Drawings.

1.3 QUALITY ASSURANCE

A. Fire Performance Characteristics: Where indicated, provide materials and construction which are identical to those of assemblies whose fire endurance has been determined by testing in compliance with ASTM E119 by a recognized testing and inspecting organization or by another means, as acceptable to Authority Having Jurisdiction.

B. Single Source Responsibility for Masonry Units: Obtain exposed masonry units of uniform texture and color, or a uniform blend within the ranges accepted for these characteristics, from one manufacturer for each different product required for each continuous surface or visually related surfaces.

C. Single Source Responsibility for Mortar Materials: Obtain mortar ingredients of uniform quality, including color for exposed masonry, from one manufacturer for each cementitious component and from one source and producer for each aggregate.

D. Source Quality Control: Materials and fabrication procedures are subject to inspection and tests in mill, shop, and filed, conducted by a qualified inspection agency. Such inspections and tests will not relieve Contractor of responsibility for providing materials and fabrication procedures in compliance with specified requirements.

E. Masonry Pre-Installation Meeting: Prior to installation of any above-grade masonry work, there shall be a Masonry Pre-Installation Meeting between the Contractor, masonry Subcontractor (if any), Architect and the Construction Manager. At this meeting, all masonry construction products and procedures shall be reviewed.

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1.4 SUBMITTALS

A. Product Data: Submit manufacturer's product data for each type of masonry unit, accessory, and other manufactured products, including certifications that each type complies with specified requirements.

B. Shop Drawings: Submit shop drawings for the following:

1. All locations of Vertical Control Joints for interior concrete masonry unit walls including control joints shown or required.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver masonry materials to project in undamaged condition.

B. Store and handle masonry units to prevent their deterioration or damage due to moisture, temperature changes, contaminants, corrosion or other causes.

C. Limit moisture absorption of concrete masonry units during delivery and until time of installation to the maximum percentage specified for Type I units for the average annual relative humidity as reported by the U.S. Weather Bureau Station nearest project site.

D. Store cementitious materials off the ground, under cover and in dry location.

E. Store aggregates where grading and other required characteristics can be maintained.

F. Store masonry accessories including metal items to prevent deterioration by corrosion and accumulation of dirt.

1.6 REFERENCE STANDARDS

A. Comply with the current applicable provisions of all codes, regulations, industry standards and specifications referenced in this section, unless otherwise modified by the requirements of the Contract Documents, including but not limited to the following:

1.	ACI 531	Building Code Requirements for Masonry Structures.
2.	ACI 531	Commentary on Building Code Requirements for Masonry Structures.
3.	ACI 530.1	Specification for Masonry Construction.
4.	ASTM C129	Non-Load Bearing Masonry Units.
5.	ASTM C140	Testing Concrete Masonry Units.
6.	ASTM C270	Standard Specification for Mortar for Unit Masonry
7.	ASTM C780	Test Method for Preconstruction and Construction Evaluation of Mortars for Plain and Reinforced Unit Masonry.
8.	ASTM C1586	Standard Guide for Quality Assurance of Mortars.
9.	NCMA	TEK Bulletins.

1.7 PROJECT CONDITIONS

A. Do not apply uniform floor or roof loading for at least 12 hours after building masonry walls.

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B. Do not apply concentrated loads for at least 3 days after building masonry walls.

C. Staining: Prevent grout or mortar or soil from staining the face of masonry to be left exposed or painted. Remove immediately grout or mortar in contact with such masonry.

D. Protect sills, ledges and projections from droppings of mortar.

PART 2 - PRODUCTS

2.1 GENERAL

A. Manufacturer: Obtain masonry units from one manufacturer, of uniform texture and color for each kind required, for each continuous area and visually related areas.

1. Concrete Masonry Units: Subject to compliance with requirements, manufacturers of concrete masonry units which may be incorporated in the work include, but are not limited to, the following:
   a. Anchor Concrete Products Inc.
   b. Clayton Block Co., Inc.
   c. Oldcastle APG.
   d. Or approved equal.

2. Masonry Anchors, Joint Reinforcing, Accessories, etc.: Subject to compliance with requirements, manufacturers of masonry anchors, joint reinforcing, accessories which may be incorporated in the work include, but are not limited to, the following:
   a. Heckman Building Products, Inc.
   b. Hohmann & Barnard, Inc.
   c. Or approved equal.

2.2 CONCRETE MASONRY UNITS

A. General: Comply with referenced standards and other requirements indicated below applicable to form of concrete masonry unit required.

B. Provide special shapes where required for lintels, corners, jambs, sash, control joints, headers, bonding and other special conditions.

1. Provide bullnose units for outside corners unless otherwise indicated.

C. Concrete Block: Provide units complying with characteristics indicated below for face size, exposed face and under each form of block included, for weight classification.

D. Size: Manufacturer's standard units with nominal face dimensions of 16" long x 8" high (15-5/8" x 7-5/8" actual) x thicknesses indicated.

E. Hollow Loadbearing Block: ASTM C90 and as follows:

1. Weight Classification: Lightweight.

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F. Solid 4" and 6" CMU (2 Hour Fire Resistance Rated) Loadbearing Block: Standard Method for Determining Fire Resistance of Concrete and Masonry Assemblies - ANSI/ACI 216.1-97, TMS-0216-97 and as follows:

1. Construction and material requirements of concrete masonry including units, mortar, grout, control joint materials and reinforcement shall comply with ACI 530/ASCE 5/TMS 402.

2. Concrete masonry units shall comply with ASTM C55, C73, C90 or C129.

3. Weight Classification: Lightweight.

4. Aggregate Type: Expanded clay, expanded shale or expanded slate with a minimum required equivalent thickness of 3.6 inches for 4" CMU.

2.3 MORTAR AND GROUT MATERIALS

A. General: Do not add admixtures including coloring pigments, air-entraining agents, accelerators, retarders or other admixtures, unless otherwise indicated.

1. Do not use calcium chloride in mortar or grout.

B. Limit cementitious materials in mortar to portland cement-lime.

C. Portland Cement: ASTM C150, Type 1, except Type III may be used for cold weather construction. Provide natural color or white cement as required to produce required mortar color.

D. Hydrated Lime: ASTM C207, Type S.

E. Aggregate for Mortar: ASTM C144, except for joints less than 1/4 inch use aggregate graded with 100% passing the No. 16 sieve.

1. White Mortar Aggregates: Natural white sand or ground white stone.

F. Mortar for Unit Masonry: Comply with ASTM C270, Proportion Specification, for types of mortar required, unless otherwise indicated.

G. Grout for Unit Masonry: Comply with ASTM C476.

1. Provide grout with a slump of 8 to 11 inches as measured according to ASTM C143.

H. The proper use of ASTM C270 and Test Method ASTM C780 for evaluating masonry mortars produced in the laboratory and the construction site is in accordance with ASTM C1586.

I. Aggregate for Grout: ASTM C404.

J. Water: Clean and potable.

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2.4 JOINT REINFORCEMENT, TIES AND ANCHORING DEVICES

A. Materials: Comply with requirements indicated below for basic materials and with requirements indicated under each form of joint reinforcement, tie and anchor for size and other characteristics:

1. Hot-Dip Galvanized Steel Wire: ASTM A82 for uncoated wire and with ASTM A153, Class B-2 (1.5 oz. per sq. ft. of wire surface) for zinc coating applied after prefabrication into units.

B. Joint Reinforcement: Provide welded-wire units prefabricated with deformed continuous side rods and plain cross rods into straight lengths of not less than 10 feet, with prefabricated corner and tee units, and complying with requirements indicated below:

1. Width: Fabricate joint reinforcement in units with widths of approximately 2 inch less than nominal width of walls and partitions as required to provide mortar coverage of not less than 5/8 inch on joint faces exposed to exterior and ½ inch elsewhere.
   a. Wire Size for Side Rods: 9 gauge.
   b. Wire Size for Cross Rods: 9 gauge.

2. Ladder design rods spaced not more than 16 inch o.c.

3. Number of Side Rods: One side rod for each face shell of concrete masonry unit.

4. Configuration:
   a. Applications of Single Wythe Wall width: Ladder type design rods at not more than 16 inches on center.
      1) Basis of Design: Provide Hohmann & Barnard, Inc., No.# 220, Ladder-Mesh; or approved equal.

2.5 MASONRY LINTELS

A. General: Provide one of the following:

1. Masonry Lintels: Prefabricated or built-in-place masonry lintels made from bond beam CMU's matching adjacent CMU's in color, texture, and density classification, with reinforcing bars placed as indicated and filled with coarse grout. Cure precast lintels before handling and installing. Temporarily support built-in-place lintels until cured.

2.6 MISCELLANEOUS MASONRY ACCESSORIES

A. Non-Metallic Expansion Joint Strips: Premolded, flexible cellular neoprene rubber filler strips complying with ASTM D1056, Grade 2A1, capable of compression up to 35%, of width and thickness indicated.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Do not wet concrete masonry units.

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B. Cleaning Reinforcing: Before placing, remove loose rust, ice and other coatings from reinforcing.

C. Thickness: Build single-wythe walls to the actual thickness of the masonry units, using units of nominal thickness indicated.

D. Leave openings for equipment to be installed before completion of masonry work. After installation of equipment, complete masonry work to match work immediately adjacent to the opening.

E. Cut masonry units using motor-driven saws to provide clean, sharp, unchipped edges. Cut units as required to provide continuous pattern and to fit adjoining work. Use full-size units without cutting where possible. No discoloration of units caused by cutting will be acceptable.

F. Pattern Bond:

1. Concrete masonry units: Running bond, unless otherwise shown.
2. Lay concealed masonry with all units in a wythe bonded by lapping not less than 2 inches.

3.2 CONSTRUCTION TOLERANCES

A. Variation from Plumb: For vertical lines and surfaces of columns, walls and arises do not exceed 1/4 inch in 10 feet, or 3/8 inch in a story height not to exceed 20 feet, nor ½ inch in 40 feet or more. For external corners, expansion joints, control joints and other conspicuous lines, do not exceed 1/4 inch in any story or 20 feet maximum, nor ½ inch in 40 feet or more. For vertical alignment of head joints do not exceed plus or minus 1/4 inch in 10 feet, ½ inch maximum.

B. Variation from Level: For bed joints and lines of exposed lintels, sills, parapets, horizontal grooves and other conspicuous lines, do not exceed 1/4 inch in any bay or 20 feet maximum, nor ½ inch in 40 feet or more. For top surface of bearing walls do not exceed 1/8 inch between adjacent floor elements in 10 feet or 1/16 inch within width of a single unit.

C. Variation of Linear Building Line: For position shown in plan and related portion of columns, walls and partitions, do not exceed ½ inch in any bay or 20 feet maximum, nor 3/4 inch in 40 feet or more.

D. Variation in Cross-Sectional Dimensions: For columns and thickness of walls, from dimensions shown, do not exceed minus 1/4 inch nor plus ½ inch.

E. Variation in Mortar Joint Thickness: Do not exceed bed joint thickness indicated by more than plus or minus 1/8 inch, with a maximum thickness limited to ½ inch. Do not exceed head joint thickness indicated by more than plus or minus 1/8 inch.

3.3 LAYING MASONRY WALLS

A. Layout walls in advance for accurate spacing of surface bond patterns with uniform joint widths and to accurately locate openings, movement-type joints, returns and offsets. Avoid the use of less-than-half-size units at corners, jambs and wherever possible at other locations.

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B. Lay-up walls to comply with specified construction tolerances, with courses accurately spaced and coordinated with other work.

C. Stopping and Resuming Work: Rack back ½-unit length in each course; do not tooth. Clean exposed surfaces of set masonry, wet units lightly (if required) and remove loose masonry units and mortar prior to laying fresh masonry.

D. Built-in Work: As the work progresses, build-in items specified under this and other sections of these Specifications. Fill in solidly with masonry around built-in items.

1. Fill cores in hollow concrete masonry units with grout 3 courses (24 inches) under bearing plates, beams, lintels, posts and similar items, unless otherwise indicated.

E. Extend all interior walls full height to underside of structure of deck, unless otherwise indicated. Include compressible insulation at top to completely close space between wall and structure above.

3.4 MORTAR BEDDING AND JOINTING

A. Lay hollow concrete masonry units with full mortar coverage on horizontal and vertical face shells. Bed webs in mortar in starting course on the cmu block below the required wall assembly.

B. Maintain joint widths shown, except for minor variations required to maintain bond alignment. If not shown, lay walls with 3/8 inch joints.

C. Cut joints flush for masonry walls which are to be concealed or to be covered by other materials, unless otherwise indicated.

D. Tool exposed joints slightly concave using a jointer larger than joint thickness, unless otherwise indicated.

E. Remove masonry units disturbed after laying; clean and reset in fresh mortar. Do not pound corners or jambs to shift adjacent stretcher units which have been set in position. If adjustments are required, remove units, clean off mortar and reset in fresh mortar.

3.5 HORIZONTAL JOINT REINFORCEMENT

A. Provide continuous horizontal joint reinforcement as indicated. Install longitudinal side rods in mortar for their entire length with a minimum cover of 5/8 inch on exterior side of walls, ½ inch elsewhere. Lap reinforcing a minimum of 6 inches.

B. Cut or interrupt joint reinforcement at control and expansion joints, unless otherwise indicated.

C. Cut and bend reinforcement units as directed by manufacturer for continuity at returns, offsets and other special conditions.

1. Space continuous horizontal reinforcement as follows:
   a. For single-wythe walls, space reinforcement at 16" o.c. vertically, unless otherwise indicated.

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2. Cut reinforcement units at walls intersecting and/or abutting firewalls. Provide control joints with fire-rated sealant as indicated in Section 07900.

D. Reinforce masonry openings greater than 1'-0" wide, with horizontal joint reinforcement placed in 2 horizontal joints approximately 8" apart, immediately above the lintel and immediately below the sill. Extend reinforcement a minimum of 2'-0" beyond jambs of the opening except at control joints.

3.6 ANCHORING MASONRY WORK

A. Provide anchoring devices of the type indicated. If not indicated, provide standard type for facing and back-up involved.

1. Strap anchors for masonry at existing walls.
2. Do not anchor fire walls to Structural Steel, intersecting and/or abutting walls.

3.7 CONTROL AND EXPANSION JOINTS

A. General: Provide vertical and horizontal expansion, control and isolation joints in masonry as indicated or required. Build-in related items as the masonry work progresses.

1. Coordinate location of all control and expansion joints in the field with Architect prior to commencement of work.

3.8 LINTELS

A. Provide minimum bearing of 8 inches at each jamb, unless otherwise indicated.

3.9 REPAIR, POINTING AND CLEANING

A. Remove and replace masonry units which are loose, chipped, broken, stained or otherwise damaged, or if units do not match adjoining units as intended. Provide new units to match adjoining units and install in fresh mortar or grout, pointed to eliminate evidence of replacement.

B. Pointing: During the tooling of joints, enlarge any voids or holes, except weep holes, and completely fill with mortar. Point-up all joints including corners, openings and adjacent work to provide a neat, uniform appearance, prepared for application of sealants.

C. Clean exposed CMU masonry by dry brushing at the end of each day's work and after final pointing to remove mortar spots and droppings. Comply with recommendations in NCMA TEK Bulletin No. 28.

1. Prepare exposed to view CMU surfaces to receive paint coatings in accordance with Section 09900.

END OF SECTION 04200

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SECTION 05300 - METAL DECKING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Extent of metal roof infill decking is indicated on drawings.

1.3 SUBMITTALS

A. Product Data: Submit manufacturer's specifications and installation instructions for each type of decking and accessories. Include manufacturer's certification as may be required to show compliance with these specifications.

B. Shop Drawings: Submit detailed drawings showing layout and types of deck panels, anchorage details and conditions requiring closure panels, supplementary framing, special jointing or other accessories.

1.4 QUALITY ASSURANCE

A. Code and Standards: Comply with provisions of the following codes and standards, except as otherwise indicated or specified:

1. AISI "Specification for the Design of Cold-Formed Steel Structural Members - Allowable Stress Design".

2. AWS D1.3 "Structural Welding Code - Sheet Steel".

3. SDI "Design Manual for Floor Decks and Roof Decks"

B. Qualification of Field Welding: Qualify welding processes and welding operators in accordance with "Welder Qualification" procedures of AWS D1.1.

C. Welded decking in place is subject to inspection and testing. Expense of removing and replacing portions of decking for testing purposes will be borne by Owner if welds are found to be satisfactory. Remove work found to be defective and replace with new acceptable work.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Subject to compliance with requirements, manufacturers offering products which may be incorporated in the work include, but are not limited to, the following:

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1. Metal Roof Deck Units: United Steel Deck, Inc.
2. Composite Metal Floor Deck Units: United Steel Deck, Inc.
3. Or approved equal.

2.2 MATERIALS

A. Steel for Galvanized Metal Deck Units: ASTM A 446, Grade A.

B. Sheet Metal Accessories: ASTM A 526, commercial quality, galvanized.

C. Galvanizing: ASTM A 525, G60.

D. Galvanizing Repair Paint: High zinc-dust content paint for repair of damaged galvanized surfaces complying with Military Specifications MIL-P-21035 (Ships).

E. Flexible Closure Strips: Manufacturer's standard vulcanized, closed-cell, synthetic rubber.

2.3 FABRICATION

A. General: Form deck units in lengths to span three (3)or more supports, with flush, telescoped or nested 2" laps at ends and interlocking or nested side laps, unless otherwise indicated.

B. Deck Units: Provide deck configurations complying with SDI and AISI "Deck Specifications" of metal thickness, depth and width as shown.

C. Metal Closure Strips: Fabricate metal closure strips, for cell raceways, at changes in deck direction and openings between decking and other construction, of not less than 0.045" min. (18 gage) sheet steel. Form to provide tight-fitting closures at open ends of cells or flutes and sides of decking.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General: Install deck units and accessories in accordance with manufacturer's recommendations and final shop drawings, and as specified herein.

B. Place deck units on supporting steel framework and adjust to final position with ends accurately aligned and bearing on supporting members before being permanently fastened. Do not stretch or contract side lap interlocks.

C. Place deck units in straight alignment for entire length of run of cells and with close alignment between cells at ends of abutting units.

D. Place deck units flat and square, secured to adjacent framing without warp or excessive deflection.

E. Do not place deck units on concrete supporting structure until concrete has cured and is dry.

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F. Coordinate and cooperate with structural steel erector in locating decking bundles to prevent overloading of structural members.

G. Fastening Deck Units:

1. Fasten deck units to steel supporting members by not less than 5/8" diameter fusion welds or elongated welds of equal strength, spaced not more than 12" o.c. In addition, secure deck to each supporting member in ribs where side laps occur.

H. Comply with AWS requirements and procedures for manual shielded metal arc welding, appearance and quality of welds methods used in correcting welding work.

I. Cutting and Fitting: Cut and neatly fit deck units and accessories around other work projecting through or adjacent to the decking, as shown.

J. Mechanically fasten side laps of adjacent deck units between supports, at intervals not exceeding 36" o.c. using self-tapping No. 8 or larger machine screws, unless a closer spacing or a larger screw is called for on the drawing.

K. Uplift Loading: Install and anchor roof deck units to resist gross uplift of 45 lbs. per sq. ft. at eave overhang and 30 lbs. per sq. ft. for other roof areas.

L. Reinforcement at Openings: Provide additional metal reinforcement and closure pieces as required for strength, continuity of decking and support of other work shown.

M. Joint Covers: Provide metal joint covers at abutting ends and changes in direction of floor deck units, except where taped joints are required.

N. Roof Sump Pans: Place over openings provided in roof decking and weld to top decking surface. Space welds not more than 12' o.c. with at least one weld at each corner. Cut opening in roof sump bottom to accommodate drain size indicated.

O. Edge Finish Strips: Provide metal finish strip at edges of roof decking, parallel to flutes. Weld into position to provide a complete deck installation.

P. Touch-Up Painting: After deck installation, wire brush, clean and paint scarred areas, welds and rust spots on top and bottom surfaces of decking units and supporting steel members.

1. Touch-up galvanized surfaces with galvanizing repair paint applied in accordance with manufacturer's instructions.

2. Touch-up painted surface with same type of shop paint used on adjacent surfaces.

Q. In areas where shop-painted surfaces are to be exposed, apply touch-up paint to blend into adjacent surfaces.

R. Touch-Up Painting: Cleaning and touch-up painting of field welds, abraded areas and rust spots, as required after erection and before proceeding with field painting, is included in Division 9 under Painting.

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3.2 QUALITY CONTROL

A. The Contractor will employ a testing laboratory satisfactory to the Architect to perform the following tests and to submit testing and inspection reports.

1. Welding: Inspect welding to determine if welds are at proper locations, are proper size and material, and meet AWS standards.

2. Sidelap Connections: Inspect sidelap connections to determine if the connections are in accordance with Bid Documents.

END OF SECTION 05300

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SECTION 05400 - MISCELLANEOUS STRUCTURAL STEEL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 DESCRIPTION OF WORK

A. Definition: Miscellaneous structural steel includes items made from iron and steel shapes, plates, bars, strips, tubes, pipes and castings which are not a part of Structural Steel or other metal fabrication systems specified elsewhere.

B. Extent of miscellaneous structural steel fabrications is indicated on Drawings.

1. Work of this section shall include miscellaneous structural steel framing and supports for floor, wall and roof openings whether or not shown on Architectural Drawings.
   a. Refer to Architectural, Mechanical and Electrical Drawings for the following:
      1) Locations and sizes of roof penetrations, roof top supported mechanical and electrical equipment, ducts, piping, raceways, etc.
      2) Locations and sizes of wall penetrations, wall chases, louvers, duct penetrations, etc.
   b. All miscellaneous structural steel supports shall be in accordance with typical structural steel details and schedules shown on Architectural Drawings and/or as directed by the Architect.
   c. All miscellaneous structural steel supports shall meet indicated load requirements and/or as directed by the Architect.
   d. In existing building where alteration and/or renovation work is indicated, refer to Division 1 Sections for miscellaneous structural steel framing and supports which may be assigned to be provided and installed by other Trades.

C. Type of work in this section includes metal fabrications for:

1. Loose Steel lintels, bearing and leveling plates and miscellaneous steel framing and supports.

D. Related Sections:

1. Section 01400 - Testing Laboratory Service
2. Section 05300 - Metal Decking
3. Section 05500 - Metal Fabrications
4. Section 09900 - Painting
5. Mechanical Work - Refer to the Mechanical Drawings for Specifications.

1.3 QUALITY ASSURANCE

A. Field Measurements: Take field measurements prior to preparation of shop drawings and fabrication, where possible. Do not delay job progress; allow for trimming and fitting where taking field measurements before fabrications might delay work.

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B. Shop Assembly: Preassemble items in shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation.

C. Delegated Design:

1. Performance and Design Criteria: Where professional design services or certifications by a design professional are specifically required of Contractor by the Bid Documents, provide products and systems complying with specific performance and design criteria indicated. Designated Design includes, but is not limited to:
   a. Miscellaneous steel framing, metal framing, clips, brackets, bearing plates and other components.

2. Professional Engineer Qualifications: A professional engineer legally authorized to practice in the jurisdiction where the Project is located, (State of New Jersey), and experienced in providing engineering services of the kind indicated that have resulted in the installation of structural assemblies, similar to this Project in material, design, and extent and that has a record of successful in-service performance. Provide analysis data and signed & sealed documents.

3. Conform to all applicable State and Local Codes for design loads and all other requirements.

4. Refer to paragraph 1.4 - SUBMITTALS (below).

D. Welding: Qualify procedures and personnel according to AWS D1.1, "Structural Welding Code–Steel," and AWS D1.3, "Structural Welding Code--Sheet Steel."

1.4 SUBMITTALS

A. Product Data: Submit manufacturer's Specifications, anchor details and installation instructions for products used in miscellaneous metal fabrications, including paint products and grout.

B. Shop Drawings: Submit shop drawings for fabrication and erection of miscellaneous steel fabrications. Include plans, elevations and details of sections and connections. Show anchorage and accessory items. Provide templates for anchor and bolt installation by others.

1. Submit shop drawings for miscellaneous steel framing and supports. Signed and sealed shop drawings shall be submitted by a qualified professional Structural Engineer, licenced in the state where the project is located.

C. Where materials or fabrications are indicated to comply with certain requirements for design loadings, include structural computations, material properties and other information needed for structural analysis.

D. Samples: Submit 2 sets of representative samples of materials and finished products as may be requested by Architect.

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PART 2 - PRODUCTS

2.1 MATERIALS

A. Metal Surfaces, General: For fabrication of miscellaneous structural steel work which will be exposed to view, use only materials which are smooth and free of surface blemishes including pitting, seam marks, roller marks, rolled trade names and roughness.

B. Steel

1. Steel Plates, Shapes and Bars: ASTM A36.

2. Structural Steel Sheet: Hot-rolled, ASTM A570; or cold-rolled ASTM A611, Class 1; of grade required for design loading.

3. Galvanized Structural Steel Sheet: ASTM A446, of grade required for design loading. Coating designation as indicated, or if not indicated, G90.

4. Steel Pipe: ASTM A53; Type and grade (if applicable) as selected by fabricator and as required for design loading; black finish unless galvanizing is indicated; standard weight (schedule 40), unless otherwise indicated.

5. Gray Iron Castings: ASTM A48, Class 30.

6. Malleable Iron Castings: ASTM A47, grade as selected by fabricator

C. Brackets, Flanges and Anchors: Cast or formed metal of the same type material and finish as supported rails, unless otherwise indicated.

D. Grout:

1. Metallic Non-Shrink Grout: Pre-mixed, factory-packaged, ferrous aggregate grout complying with CE CRD-C588, Type M.

2. Non-Shrink Non-Metallic Grout: Pre-mixed, factory-packaged, non-staining, non-corrosive, non-gaseous grout complying with CE CRD-C621. Provide grout specifically recommended by manufacturer for interior and exterior applications of type specified in this section.

E. Fasteners:

1. General: Provide zinc-coated fasteners for exterior use or where built into exterior walls. Select fasteners for the type, grade and class required.

2. Bolts and Nuts: Regular hexagon head type, ASTM A307, Grade A.

3. Lag Bolts: Square head type, FS FF-B-561.

4. Machine Screws: Cadmium plated steel, FS FF-S-92.

5. Wood Screws: Flat head carbon steel, FS FF-S-111.

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6. Plain Washers: Round, carbon steel, FS FF-W-92.

7. Masonry Anchorage Devices: Expansion shields, FS FF-S-325.

F. Toggle Bolts: Tumble-wing type, FS FF-B-588, type, class and style as required.

1. Lock Washers: Helical spring type carbon steel, FS FF-W-84.

G. Paint:

1. Surface Preparation: SSPC-2P6 commercial Blast Cleaning.

2. Primer: Tnemec Series 90-97 Tneme-Zinc, or equal, @ 2.5 - 3.5 mils (dry)

3. Primer selected must be compatible with finish coats of paint. Coordinate selection of metal primer with finish paint requirements specified in Section 09900.

2.2 FABRICATION, GENERAL

A. Workmanship: Use materials of size and thickness indicated, or if not indicated, as required to produce strength and durability in finished product for use intended. Work to dimensions indicated or accepted on shop drawings, using proven details of fabrication and support. Use type of materials indicated or specified for various components of work.

B. Form exposed work true to line and level with accurate angles and surfaces and straight sharp edges. Ease exposed edges to a radius of approximately 1/32" unless otherwise indicated. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.

C. Weld corners and seams continuously, complying with AWS recommendations. At exposed connections, grind exposed welds smooth and flush to match and blend with adjoining surfaces.

D. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners wherever possible. Use exposed fasteners of type indicated or, if not indicated, Phillips flat-head (countersunk) screws or bolts.

E. Provide for anchorage of type indicated, coordinated with supporting structure. Fabricate and space anchoring devices to provide adequate support for intended use.

F. Galvanizing:

1. Provide a zinc coating for exterior items and those items indicated or specified to be galvanized, as follows:
   a. ASTM A 153 for galvanizing iron and steel hardware.
   b. ASTM A 123 for galvanized rolled, pressed and forged steel shapes, plates, bars and strip 1/8" thick and heavier.
   c. ASTM A 386 for galvanizing assembled steel products.

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G. Shop Painting

1. Shop paint miscellaneous structural steel, except members or portions of members to be embedded in masonry, surfaces and edges to be field welded, and galvanized surfaces, unless otherwise indicated.

2. Remove scale, rust and other deleterious materials before applying shop coat. Clean off heavy rust and loose mill scale in accordance with SSPC SP-6.

3. Immediately after surface preparation, brush or spray on primer in accordance with manufacturer's instructions. Use painting methods which will result in full coverage of joints, corners, edges and exposed surfaces.

4. Apply one shop coat to fabricated metal items, except apply two coats of paint to surfaces inaccessible after assembly or erection. Change color of second coat to distinguish it from the first.

PART 3 - EXECUTION

3.1 PREPARATION

A. Coordinate and furnish anchorages, setting drawings, diagrams, templates, instructions, and directions for installation of anchorages, such as inserts, sleeves, anchor bolts and miscellaneous items having integral anchors, which are to be embedded in masonry construction. Coordinate delivery of such items to project site.

1. Coordinate work of this section with other work affected by other Trades.

2. Obtain locations, opening sizes, weighs and other required information from affected Trades.

3. Comply with coordination requirements indicated in Division 1 Sections.

3.2 INSTALLATION

A. Fastening to In-Place Construction: Provide anchorage devices and fasteners where necessary for securing miscellaneous metal fabrications to in-place construction; including, threaded fasteners for concrete and masonry inserts, toggle bolts, through-bolts, lag bolts, wood screws and other connectors, as required.

B. Cutting, Fitting and Placement: Perform cutting, drilling and fitting required for installation of miscellaneous metal fabrications. Set work accurately in location, alignment and elevation, plus, level, true and free of rack, measured from established lines and levels. Provide temporary bracing or anchors in formwork for items which are to be built into concrete masonry or similar construction.

C. Fit exposed connections accurately together to form tight hairline joints. Weld connections which are not to be left as exposed joints, but cannot be shop welded because of shipping size limitations. Grind exposed joints smooth and touch-up shop paint coat. Do not weld, cut or abrade the surfaces of exterior units which have been hot-dip galvanized after fabrication, and are intended for bolted or screwed field connections.

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D. Field Welding: Comply with AWS Code for procedures of manual shielded metal-arc welding, appearance and quality of welds made, and methods used in correcting welding work.

E. Set loose lintels weighing more than 200 pounds, leveling and grouting as for plates. Deliver loose lintels weighing less than 200 pounds to the (Sub)Contractor, allow sufficient time for scheduling the installation.

3.3 ADJUST AND CLEAN

A. Touch-Up Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with same material as used for shop painting.

B. Apply by brush or spray to provide a minimum dry film thickness of 2.0 mils.

C. For galvanize surfaces: Clean field welds, bolted connections and abraded areas and apply galvanizing repair paint to comply with ASTM A780.

END OF SECTION 05400

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SECTION 05500 - METAL FABRICATIONS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 DESCRIPTION OF WORK

A. Definition: Metal fabrications include items made from iron and steel shapes, plates, bars, strips, tubes, pipes and castings which are not a part of structural steel or other metal systems specified elsewhere and non-ferrous items listed herein.

B. Type of work in this section includes metal fabrications for assemblies which include but are not limited to the following:

1. Rough hardware.
2. Miscellaneous structural shapes.
3. Guy wire roof support.

C. Related Work:

1. Section 04200 - Unit Masonry.
2. Section 05300 - Metal Decking.
3. Section 05400 - Miscellaneous Structural Steel.
4. Division 7 - Roofing Related Work.
5. Section 09900 - Painting.

1.3 QUALITY ASSURANCE

A. Codes and Standards:

ASTM A108-99 - Standard Specification for Steel Bars, Carbon, Cold-Finished, Standard Quality.

ASTM A123 - Standard Specification for Zinc (Hot Dip Galvanized) Coatings on Iron and Steel Products.

ASTM A276-03 - Standard Specification for Stainless Steel Bars and Shapes.

ASTM A307 - Standard Specification for Carbon Steel Bolts and Studs, 60,000 PSI Tensile Strength.

ASTM A500 – Standard Specification for Cold-Formed Welded and Seamless Carbon Steel Structural Tubing in Rounds and Shapes.

ASTM A563-00 - Standard Specification for Carbon and Alloy Steel Nuts.

ASTM A569/A569M-91a – Standard Specification for Steel, Carbon (.15 Maximum, Percent), Hot-Rolled Sheet and Strip Commercial Quality (superseded by A1011).

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ASTM A780-01 - Standard Practice for Repair of Damaged and Uncoated Areas of Hot-Dip Galvanized Coatings.

ASTM A1011/A1011M-03 - Standard Specification for Steel, Sheet and Strip, Hot-Rolled, Carbon, Structural, High-Strength Low-Alloy and High-Strength Low-Alloy with Improved Formability.

ASTM F844-00 - Standard Specification for Washers, Steel, Plain (Flat), Unhardened for General Use.

AWS D1.1/D1.1M: Structural Welding Code - Steel, Welding qualification procedures and personnel.

B. Field Measurements: Take field measurements prior to preparation of shop drawings and fabrication, where possible. Do not delay job progress; allow for trimming and fitting where taking field measurements before fabrications might delay work.

C. Shop Assembly: Preassemble items in shop to greatest extent possible to minimize field splicing and assembly. Disassemble units only as necessary for shipping and handling limitations. Clearly mark units for reassembly and coordinated installation.

D. Delegated Design Engineer Qualifications: A professional engineer who is legally qualified to practice in New Jersey where Project is located and who is experienced in providing engineering services of the type indicated.

1.4 SUBMITTALS

A. Product Data: Submit manufacturer's specifications, anchor details and installation instructions for products used in miscellaneous metal fabrications, including paint products and grout.

B. Shop Drawings: Submit shop drawings for fabrication and erection of miscellaneous metal fabrications. Include plans, elevations and details of sections and connections. Show anchorage and accessory items. Provide templates for anchor and bolt installation by others.

C. Where materials or fabrications are indicated to comply with certain requirements for design loadings, include structural computations, material properties and other information needed for structural analysis.

D. Samples: Submit 2 sets of representative samples of materials and finished products as may be requested by Architect.

E. Mill test reports: Reports indicating metals to be furnished comply with project requirements.

1.5 WARRANTY

A. Guy Wire Roof Supports: Provide manufacturer’s standard **twenty (20) year warranty** against leaks, condensation and defects in materials and other manufacture when installed in accordance with the manufacturer’s instructions.

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PART 2 - PRODUCTS

2.1 MATERIALS

A. Metal Surfaces, General: For fabrication of miscellaneous metal work which will be exposed to view, use only materials which are smooth and free of surface blemishes including pitting, seam marks, roller marks, rolled trade names and roughness.

B. Aluminum: Comply with the following standards for the forms and types of aluminum for the required items of work.

1. Alloy and Temper: Provide alloy and temper as recommended by the aluminum producer or finisher, with not less than the strength and durability properties specified in ASTM B 632/B 632 M, alloy 6061-T6.

2. Welding Electrodes and Filler Metal: Type and alloy of filler metal and electrodes as recommended by producer of the metal to be welded, and as required for color match, strength and compatibility in the fabricated items.

3. Fasteners: Finish of basic metal and alloy, matching finished color and texture as the metal being fastened, unless otherwise indicated. Unless otherwise shown, provide Phillips flat-head screws for exposed fasteners.

4. Bituminous Paint: SSPC-Paint (cold-applied asphalt mastic).

5. Protective Lacquer: Clear non-yellowing, of type recommended by metal producer for protection of the finished metal surfaces.

C. Steel

1. Steel Plates, Shapes and Bars: ASTM A36/A 36M.

2. Steel Tubing: Cold-formed, ASTM A500; or hot-rolled, ASTM A501.

3. Structural Steel Sheet: Hot-rolled, ASTM A570; or cold-rolled ASTM A611, Class 1; of grade required for design loading.

4. Galvanized Structural Steel Sheet: ASTM A446, of grade required for design loading. Coating designation as indicated, or if not indicated, G90.

D. Gray Iron Castings: ASTM A48, Class 30.

E. Malleable Iron Castings: ASTM A47, grade as selected by fabricator.

F. Stainless Steel Sheet, Strip, Plate and Flat Bars: ASTM A666, Type 304, unless otherwise indicated.

1. Stainless Bars and Shapes: ASTM A276, Type 304.

G. Brackets, Flanges and Anchors: Cast or formed metal of the same type material and finish as supported rails, unless otherwise indicated.

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H. Grout:

1. Non-Shrink, Metallic Grout: Pre-mixed, factory-packaged, ferrous-aggregate grout complying with CE CRD-C588, Type M, and ASTM C1107, specifically recommended by manufacturer for heavy-duty loading applications and not to be used in wet areas or on exterior applications.

2. Non-Shrink, Non-Metallic Grout: Pre-mixed, factory-packaged, non-staining, non-corrosive, non-gaseous grout complying with CE CRD-C621, and ASTM C1107. Provide grout specifically recommended by manufacturer for interior and exterior applications of type specified in this section.

I. Fasteners:

1. General: Provide zinc-plated fasteners complying with ASTM B633, Class Fe/Zn 5, for exterior use or where built into exterior walls. Select fasteners for the type, grade and class required.

2. Steel Bolts and Nuts: Regular hexagon-head bolts, ASTM A307, Grade A, with hex nuts, ASTM A563; and where needed, flat washers.

3. Weathering Steel Bolts and Nuts: Regular hexagon-head bolts, ASTM A325, Type 3, with hex nuts, ASTM A563, Grade C3; and where needed, flat washers.

4. Lag Screws: Square head type, ASME B18.2.1.

5. Machine Screws: Cadmium plated steel, ASME B18.6.3.

6. Wood Screws: Flat head, carbon steel, ASME B18.6.1.

7. Plain Washers: Round, carbon steel, ASME B18.22.1.

8. Masonry Anchorage Devices: Expansion shields, FS FF-S-325.

9. Expansion Anchors: Anchor bolt and sleeve assembly; Carbon-steel components zinc-plated to comply with ASTM B633, Class Fe/Zn 5.

10. Toggle Bolts: Tumble-wing type, FS FF-B-588, type, class and style as needed.

11. Lock Washers: Helical, spring type, carbon steel, ASME B18.21.1.

12. Eyebolts: ASTM A 489.

13. Anchor Bolts: ASTM F 1554, Grade 36, of dimension indicated; with nuts, ASTM A563; and where indicated, flat washers.

J. Anchors, General: Anchors capable of sustaining, without failure, a load equal to six times the load imposed when installed in unit masonry and four times the load imposed when installed in concrete, as determined by testing according to ASTM E488, conducted by a qualified independent testing agency.

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K. Paint:

1. Metal Primer Paint: Red lead mixed pigment, alkyd varnish, linseed oil paint, FS TT-P-86l, Type II; or red lead iron oxide, raw linseed oil, alkyd paint, Steel Structures Painting Council (SSPC) Paint 2-64; or basic lead silico chromate base iron oxide, linseed oil, alkyd paint, FS TT-P-615, Type II.

2. Primer selected must be compatible with finish coats of paint. Coordinate selection of metal primer with finish paint requirements specified in Section 09900.

3. Galvanizing Repair Paint: High-zinc-dust content paint for regalvanizing welds in galvanized steel, complying with the Military Specifications MIL-P-21035 (Ships) or SSPC-Paint-20 and compatible with paints specified to be used over it.

2.2 FABRICATION, GENERAL

A. Workmanship

1. Use materials of size and thickness indicated, or if not indicated, as required to produce strength and durability in finished product for use intended. Work to dimensions indicated or accepted on shop drawings, using proven details of fabrication and support. Use type of materials indicated or specified for various components of work.

2. Form exposed work true to line and level with accurate angles and surfaces and straight sharp edges. Ease exposed edges to a radius of approximately 1/32" unless otherwise indicated. Form bent-metal corners to smallest radius possible without causing grain separation or otherwise impairing work.

3. Weld corners and seams continuously, complying with AWS recommendations. At exposed connections, grind exposed welds smooth and flush to match and blend with adjoining surfaces.

4. Form exposed connections with hairline joints, flush and smooth, using concealed fasteners wherever possible. Use exposed fasteners of type indicated or, if not indicated, Phillips flat-head (countersunk) screws or bolts.

5. Provide for anchorage of type shown, coordinated with supporting structure. Fabricate and space anchoring devices to provide adequate support for intended use.

6. Cut, reinforce, drill and tap miscellaneous metal work as indicated to receive finish hardware and similar items.

B. Shop Painting

1. Shop paint miscellaneous metal work, except members of portions of members to be embedded in masonry, surfaces and edges to be field welded, and galvanized surfaces, unless otherwise indicated.

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2. Remove scale, rust and other deleterious materials before applying shop coat. Clean off heavy rust and loose mill scale in accordance with SSPC SP-2 "Hand Tool Cleaning", or SSPC SP-3 "Power Tool Cleaning", or SSPC SP-7 "Brush-Off Blast Cleaning".

3. Remove oil, grease and similar contaminants in accordance with SSPC SP-1 "Solvent Cleaning".

4. Immediately after surface preparation, brush or spray on primer in accordance with manufacturer's instructions, and at a rate to provide uniform dry film thickness of 2.0 mils for each coat. Use painting methods which will result in full coverage of joints, corners, edges and exposed surfaces.

5. Apply one shop coat to fabricated metal items, except apply two (2) coats of paint to surfaces inaccessible after assembly or erection. Change color of second coat to distinguish it from the first.

2.4 MISCELLANEOUS METAL FABRICATIONS

A. Rough Hardware

1. Furnish bent or otherwise custom fabricated bolts, plates, anchors, hangers, dowels and other miscellaneous steel and iron shapes as required for framing and supporting woodwork, and for anchoring or securing woodwork to concrete or other structures. Straight bolts and other stock rough hardware items as specified in Division-6 sections.

2. Fabricate items to sizes, shapes and dimensions required. Furnish malleable-iron washers for heads and nuts which bear on wood structural connections; elsewhere, furnish steel washers.

B. Guy Wire Roof Support:

1. Basis of Design: Provide “ARS-300" guy wire roof support as manufactured by Thaler Metal Industries; SBC Industries; or approved equal.
   a. Product consists of a urethane insulated, epoxy primed, hollow steel support and mounting plate, and galvanized guy wire ring..
   b. Provide stainless steel stack jack flashing with urethane insulation and EPDM Base seal.
   c. Provide units complete with manufacturer’s standard and optional hardware, accessories, adhesive, etc. to suit indicated application.
   d. Provide manufacturer’s standard **twenty (20) year warranty** against leaks, condensation and defects in materials and other manufacture when installed in accordance with the manufacturer’s instructions.
   e. Comply with manufacturer’s instructions and recommendations for installation methods.

C. Miscellaneous Structural Shapes, Framing and Supports, Etc.

1. Provide miscellaneous steel framing and supports which are not a part of structural steel framework, as required to complete work.

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2. Fabricate miscellaneous units to sizes, shapes and profiles indicated or, if not indicated, of required dimensions to receive adjacent other work to be retained by framing. Except as otherwise indicated, fabricated from structural steel shapes, plates and steel bars of welded construction using mitered joints for field connection. Cut, drill and tap units to receive hardware and similar items.

3. Equip units with integrally welded anchors for casting into concrete or building into masonry. Furnish inserts if units must be installed after concrete is placed.

4. Galvanize exterior miscellaneous frames and supports.

PART 3 - EXECUTION

3.1 PREPARATION

A. Coordinate and furnish anchorages, setting drawings, diagrams, templates, instructions, and directions for installation of anchorages, such as inserts, sleeves, anchor bolts and miscellaneous items having integral anchors, which are to be embedded in masonry construction. Coordinate delivery of such items to project site.

3.2 INSTALLATION

A. General

1. Fastening to In-Place Construction: Provide anchorage devices and fasteners where necessary for securing miscellaneous metal fabrications to in-place construction; including, threaded fasteners for concrete and masonry inserts, toggle bolts, through-bolts, lag bolts, wood screws and other connectors as required.

2. Cutting, Fitting and Placement: Perform cutting, drilling and fitting required for installation of miscellaneous metal fabrications. Set work accurately in location, alignment and elevation, plus, level, true and free of rack, measured from established lines and levels. Provide temporary bracing or anchors in formwork for items which are to be built into concrete, masonry or similar construction.

3. Fit exposed connections accurately together to form tight hairline joints. Weld connections which are not to be left as exposed joints, but cannot be shop welded because of shipping size limitations. Grind exposed joints smooth and touch-up shop paint coat. Do not weld, cut or abrade the surfaces of exterior units which have been hot-dip galvanized after fabrication, and are intended for bolted or screwed field connections.

4. Field Welding: Comply with AWS Code for procedures of manual shielded metal-arc welding, appearance and quality of welds made, and methods used in correcting welding work.

3.3 ADJUST AND CLEAN

A. Touch-Up Painting: Immediately after erection, clean field welds, bolted connections, and abraded areas of shop paint, and paint exposed areas with same material as used for shop painting. Apply by brush or spray to provide a minimum dry film thickness of 2.8 mils.

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B. For galvanize surfaces: Clean field welds, bolted connections and abraded areas and apply galvanizing repair paint.

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SECTION 06100 - CARPENTRY

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Type of Work in this section includes rough carpentry for wood nailers and blocking.

1.3 SUBMITTALS

A. Material Certificates: Where dimensional lumber is provided to comply with minimum allowable unit stresses, submit listing of species and grade selected for each use, and submit evidence of compliance with specified requirements. Compliance may be in form of a signed copy of applicable portion of lumber producer's grading rules showing design values for selected species and grade. Design values shall be as approved by the Board of Review of American Lumber Standards Committee.

B. Wood Treatment Data: Submit chemical treatment manufacturer's instructions for handling, storing, installation and finishing of treated material.

C. Fire-Retardant Treatment: Include certification by treating plant that treated material complies with specified standard and other requirements.

1.4 PRODUCT HANDLING

A. Delivery and Storage: Keep materials under cover and dry. Protect against exposure to weather and contact with damp or wet surfaces. Stack lumber; provide for air circulation within and around stacks and under temporary coverings including polyethylene and similar materials.

B. Do not deliver finish carpentry materials, until painting, wet Work, grinding and similar operations which could damage, soil or deteriorate woodwork have been completed in installation areas. If, due to unforseen circumstances, finish carpentry materials must be stored in other than installation areas, store only in areas meeting requirements specified for installation areas.

1.5 PROJECT CONDITIONS

A. Coordination: Fit carpentry Work to other Work; scribe and cope, as required, for accurate fit. Correlate location of furring, nailers, blocking, grounds and similar supports to allow attachment of other Work.

B. Maintain temperature and humidity in installation areas, as required, to maintain moisture content of installed finish carpentry within a 1.0 percent tolerance of optimum moisture content, from date of installation through remainder of construction period. The fabricator of woodwork shall determine optimum moisture content and required temperature and humidity conditions.

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PART 2 - PRODUCTS

2.1 LUMBER, GENERAL

A. Lumber Standards: Manufacture lumber to comply with PS 20 "American Softwood Lumber Standard" and with applicable grading rules of inspection agencies certified by American Lumber Standards Committee's (ALSC) Board of Review.

B. Inspection Agencies: Inspection agencies and the abbreviations used to reference with lumber grades and species include the following:

WWPA - Western Wood Products Association.

C. Factory-mark each piece of lumber with type, grade, mill and grading agency, except omit marking from surfaces to be exposed with transparent finish or without finish.

D. Nominal sizes are indicated, except as shown by detail dimensions. Provide actual sizes as required by PS 20, for moisture content specified for each use.

E. Provide dressed lumber, S4S, unless otherwise indicated.

F. Provide seasoned lumber with 19 percent maximum moisture content at time of dressing.

2.2 MISCELLANEOUS LUMBER

A. Provide wood for support or attachment of other Work including nailers, blocking, and similar members. Provide lumber of sizes indicated or required, worked into shapes shown, and as follows:

1. Moisture content: 19 percent maximum for lumber items not specified to receive wood preservative treatment.

2. Grade: Construction Grade light framing size lumber of any species or board size lumber, as required. Provide construction grade boards or No. 2 Boards.

2.3 MISCELLANEOUS MATERIALS

A. Fasteners and Anchorages: Provide size, type, material and finish as indicated and as recommended by applicable standards, complying with applicable Federal Specifications for nails, staples, screws, bolts, nuts, washers and anchoring devices. Provide metal hangers and framing anchors of the size and type recommended by the manufacturer for each use including recommended nails.

B. Where rough carpentry work is exposed to weather, in area of high relative humidity, provide fasteners and anchorages with a hot-dip zinc coating (ASTM A 153).

C. Building Paper: ASTM D 226, Type I; asphalt saturated felt, non-perforated, 15-lb. type.

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2.4 WOOD TREATMENT BY PRESSURE PROCESS

A. Fire-Retardant Treatment: Where fire-retardant treated wood ("FRT") is indicated or required, pressure impregnate lumber and plywood with fire-retardant chemicals to comply with AWPA C20 and C27, respectively, identify "FRT" lumber with appropriate classification marking of Underwriters Laboratories, Inc., U.S. Testing, Timber Products Inspection or other testing and inspecting agency acceptable to Authorities Having Jurisdiction.

1. Fire treated wood shall have a flame spread of 25 or less and shall be dried to 19% moisture content for lumber and 15% for plywood. Exposed wood or wood subject to high humidity conditions shall be identified that the moisture content shall not exceed 28% when tested at 92% relative humidity in accordance with ASTM D3201.

2. Treatment products: The following products, provided they comply with requirements of the Bid Documents will be among those considered acceptable:
   a. "Dricon"; Hickson Corporation.
   b. "Flame Proof LHC"; Osmose Wood Preserving, Inc.
   c. "Pyro-Guard"; Hoover Treated Wood Products, Inc.
   d. Or approved equal.

3. Treat members shown on Drawings and/or as required to meet the all State and Local Codes and Regulations.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Discard units of material with defects which might impair quality of Work, and units which are too small to use in fabricating Work with minimum joints or optimum joint arrangement.

B. Set carpentry Work to required levels and lines, with members plumb and true to line and cut and fitted.

C. Securely attach carpentry work to substrate by anchoring and fastening as shown and as required by recognized standards.

D. Countersink nail heads on exposed carpentry work and fill holes.

E. Use common wire nails, except as otherwise indicated. Use finishing nails for finish Work. Select fasteners of size that will not penetrate members where opposite side will be exposed to view or will receive finish materials. Make tight connections between members. Install fasteners without splitting of wood; predrill as required.

3.2 WOOD NAILERS AND BLOCKING

A. Provide wherever shown and where required for screeding or attachment of other Work. Form to shapes as shown and cut, as required, for true line and level of Work to be attached. Coordinate location with other Work involved.

B. Attach to substrates, as required, to support applied loading. Countersink bolts and nuts flush with surfaces, unless otherwise indicated.

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C. Height of nailers shall be matched to that of the insulation being used. Nailers shall be firmly anchored to the deck to resist a force of seventy-five pounds per lineal foot. The type of anchors shall be a recommended by the roofing manufacturer and shall be secured at intervals required to ascertain a resistance force of seventy-five pounds per lineal foot.

END OF SECTION 06100

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SECTION 07070 - SELECTIVE ROOF DEMOLITION

PART 1- GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 GENERAL

A. The Contractor will be responsible for the removal and disposal of all materials generated from work of this Contract.

B. Provide all labor, material, equipment, and tools as required to prepare the existing roof section for selective demolition work and installation of new RTU curbs, vents, etc. as specified in this Section and other Division 7 Sections.

C. Provide for the proper disposal of all existing materials designated to be removed. Use approved trash receptacles in areas designated by the Owner's Representative.

D. Coordinate work, in such a manner as to keep the new insulation and roofing materials, building, and building interior absolutely clean, dry and watertight.

E. Contractor is to maintain the building roof in a watertight condition at the completion of each day's work and ensure that no water enters into the building. Roof areas are to be "watertight at night" at all times during the job. Failure to do so is grounds for dismissal. Contractor will reimburse Owner the cost to repair interior damages resulting from roof leaks during construction.

F. Contractor is to maintain the building and site in a neat and orderly fashion at all times. Completely remove all scrap and debris on a daily basis. Failure to do so is grounds for dismissal.

1.3 SUBMITTALS

A. Proposed Selective Demolition Activities:

1. Submit proposed schedule of demolition activities. Indicate:
   a. Starting and ending dates for each activity as appropriate.
   b. Interruption and restoration of utility services.

2. Submit proposed methods of operations.

B. Project Record Documents: Indicate unanticipated structural, electrical, or mechanical conditions.

C. Photographs: Before starting work, file with the Architect photographs documenting existing conditions that later could be mistaken for damage caused by demolition operations.

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1.4 PROJECT CONDITIONS

A. Occupancy:

1. The Owner will continue to occupy portions of the existing building.

B. Unforeseen Conditions: Should unforeseen conditions be encountered that affect design or function of project, investigate fully and submit an accurate, detailed, written report to the Owner, Architect and Construction Manager. While awaiting the Owner / Architect's response, reschedule operations if necessary to avoid delay of overall project.

PART 2

2.1 EQUIPMENT

A. Demolition equipment and materials are provided by the Contractor.

PART 3

3.1 EXECUTION

A. Contractor shall take all necessary precautions during roof preparation work to protect the building exterior, building interior, and adjacent surfaces from being soiled or damaged.

B. When weather threatens, cease work under this Section and return roof to a watertight condition.

C. Contractor shall restore to original condition any damages caused during work on this project. Damages found on this project prior to start of work must be documented by Contractor and brought to Owner's attention prior to start of work.

D. All roof drains are assumed to be in good operating condition. Contractor is to verify good operating condition of roof drains prior to start of work on this project. Damaged, clogged or partially clogged drains must be documented by Contractor and brought to Owner, Architect and Construction Manager's attention prior to start of work on this project.

E. Return all roof drains to operating condition at the end of each working day.

F. Immediately prior to insulation attachment, sweep the deck surface. Do not allow foreign objects to become trapped under the insulation board by being left on the deck surface.

G. If, during observation of the prepared surface, the Architect or the manufacturer's representative determined the deck surface was not prepared properly, Contractor shall re-prepare the surface to the satisfaction of the Architect, Construction Manager or manufacturer's representative.

H. Properly dispose of all debris from roof preparation on a daily basis.

I. Do not store debris on roof. Roofing Subcontractor shall take care not to over stress roof deck.

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J. Provide closed trash chutes or other approved means for removal of debris.

K. Construct all necessary barricades, fencing, warning sign, scaffolding, etc., required to protect personnel and property.

L. Prior to the completion of the work, remove from the job site all tools, equipment, debris and waste.

END OF SECTION 07070

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SECTION 07200 - BUILDING INSULATION

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 DESCRIPTION OF WORK

A. Work included in this Contract: Contractor shall include all labor, materials, services, installation, equipment, etc., necessary to complete all building insulation (except roof insulation) to achieve complete and tight building thermal barrier to prevent the passage of exterior air into conditioned spaces and prohibit the formation of condensation.

1. Provide indicated types of insulation as shown on drawings, as specified herein, and/or as required by all job conditions and building assemblies, whether clearly shown or not to achieve included work.

2. Insulation types include but are not limited to the following:
   a. Blanket type building insulation with foil facing for concealed application,
   b. Fire safing insulation with UL approved coating.

3. Related Work:
   a. Section 07600 - Flashing, Sheet Metal and Roof Accessories,
   b. Section 07840 - Through-Penetration Firestop Systems.

1.3 QUALITY ASSURANCE

A. Thermal Conductivity: Thicknesses shown are for thermal conductivity (k-value at 75°F) specified for each material. Provide adjusted thicknesses as directed for equivalent use of material having a different thermal conductivity. Where insulation is identified by "R" value, provide appropriate thicknesses.

B. Fire-Test-Response Characteristics: Provide insulation and related materials with the fire-test-response characteristics indicated, as determined by testing identical products per test method indicated below by UL or another testing and inspecting agency acceptable to authorities having jurisdiction. Identify materials with appropriate markings of applicable testing and inspecting agency.

1. Surface-Burning Characteristics: ASTM E 84.

2. Fire-Resistance Ratings: ASTM E 119.

3. Combustion Characteristics: ASTM E 136.

C. Fire and Insurance Ratings: Comply with fire-resistance, flammability and insurance ratings indicated, and comply with governing regulations as interpreted by authorities.

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1.4 SUBMITTALS

A. Product Data: Submit manufacturer's product literature and installation instructions for each type of insulation required. Include data substantiating that materials comply with specified requirements.

B. Samples: Submit triplicate samples of the following listed items, in accordance with Bid Documents. Obtain Architect's approval before proceeding with ordering or fabrication of items of this section:

1. Each type of insulation specified - 12 inches square.

1.5 DELIVERY, STORAGE, AND HANDLING

A. General Protection and Handling: Protection from Deterioration: Do not allow insulation materials to become wet, soiled, or covered with ice or snow. Comply with manufacturer's recommendations for handling, storage and protection during installation.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Subject to compliance with requirements, manufacturers offering products that may be incorporated into the Work include, but are not limited to, the following:

1. Glass-Fiber Insulation:
   a. CertainTeed Corporation.
   b. Johns Manville.
   c. Owens Corning.
   d. Guardian Building Products, Inc.
   e. Knauf Insulation.
   f. Or approved equal.

2. Fire Safing Insulation:
   a. Industrial Insulation Group, LLC
   b. Fibrex Insulations.
   c. Isolatek International.
   d. Owens Corning.
   e. Or approved equal.

B. Mineral/Glass Fiber Blanket/Batt Insulation

1. Inorganic fibers formed into flexible resilient blankets or semi-rigid resilient sheets:
   a. Reinforced-Foil-Faced, Glass-Fiber Blanket Insulation: ASTM C 665, Type III (reflective faced), Class A (faced surface with a flame-spread index of 25 or less); Category 1 (membrane is a vapor barrier), faced with foil scrim, foil-scrim kraft, or foil-scrim polyethylene.

C. Mineral-Wool Board Insulation:

1. Semi-Refractory Fiber Board Fire Safing Insulation: Semi-rigid boards designed for use

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as a fire stop at openings between edge of slab and exterior wall panels, at top of masonry and wallboard walls/deck interface, and shall be produced by combining semi-refractory mineral fiber manufactured from slag with thermosetting resin binders.

2. Unfaced, Mineral-Wool Board Insulation: ASTM C 612; with a flame-spread index of 15 and a smoke-developed index of zero, per ASTM E 84; passing ASTM E 136 for combustion characteristics.
   a. Nominal density of 4 lb/cu. ft., Types IA and IB, thermal resistivity of 4°F x h x sq. ft./Btu x in. at 75°F.

2. At all rated masonry and wallboard walls and partitions, rated slabs and exterior wall panels, the fire safing insulation shall be coated with 3M Firedam products, or approved equal, to achieve indicated UL design requirements.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Comply with manufacturer's instructions for particular conditions of installation in each case. If printed instructions are not available or do not apply to project conditions, consult manufacturer's technical representative for specific recommendations before proceeding with work.

B. Extend insulation to envelop entire area to be insulated. Fit tightly around obstructions and fill voids with insulation. Remove projections that interfere with placement.

1. Apply a single layer of insulation of required thickness, unless otherwise shown or required to make up total thickness.

2. Provide complete and tight building thermal barrier, to prevent the passage of exterior air into conditioned spaces and prohibit the formation of condensation.

3. Provide indicated types of insulation as shown on Drawings, as specified herein, and/or as required by all job conditions, building assemblies, and whether clearly shown or not.

4. Miscellaneous Voids: Install insulation in miscellaneous voids and cavity spaces where required to prevent gaps in insulation using the following materials:
   a. Glass-Fiber Insulation: Compact to approximately 40 percent of normal maximum volume equaling a density of approximately 2.5 lb/cu. ft. (40 kg/cu. m).

C. Batt Insulation

1. General:
   a. Set vapor barrier faced units with vapor barrier to warm side of construction.
   b. Tape joints and ruptures in vapor barriers, and seal each continuous area of insulation to surrounding construction to ensure vapor-tight installation.
   c. Insert and secure insulation to fill voids to create barrier to prevent the pass of air and moisture.

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D. Fire Safing Insulation

1. Install fire safing insulation at all indicated locations, as required by authorities having jurisdiction and in accordance with manufacturer's instructions.

2. Provide sealant material and type required for indicated applications. Provide fire rated type at rated assemblies.

3. Provide coating materials at indicated UL rated assemblies.

E. All installations of insulation and work of this section shall meet approval of Architect and all code Authorities Having Jurisdiction at no additional cost to the Owner.

END OF SECTION 07200

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SECTION 07500 - ROOFING, GENERAL

PART 1 - GENERAL

1.1 DESCRIPTION OF WORK

A. The requirements of this section apply to the work specified in the following sections:

1. Section 05300 - Metal Decking,
2. Section 05400 - Miscellaneous Structural Steel,
3. Section 05500 - Metal Fabrications,
4. Section 06100 - Carpentry,
5. Section 07070 - Selective Roof Demolition,
6. Section 07200 - Building Insulation,
7. Section 07530 - Repairs to Single-Ply Roofing Membrane System,
8. Section 07535 - Repairs to Modified Bitumen Roofing System - Cold Applied,
9. Section 07600 - Flashing and Sheet Metal,
10. Section 07800 - Roof Specialties and Accessories,
11. Section 07900 - Joint Sealer Assemblies,
12. Division 15 - Mechanical Work,
12. Division 16 - Electrical Work.

B. This section includes coordination of existing roofing systems, installation of new warrantied roof system as shown on the Drawings.

1.2 QUALITY ASSURANCE

A. Roofing and associated work, including work of all sections listed in 1.1 above, must be included in the Single Overall Contract, so that there will be undivided responsibility for the specified performance of all component parts.

B. Installer Prequalification: Installer must be a recognized Roofing Subcontractor, skilled and experienced in the types of work required and equipped to perform workmanship in accordance with recognized standards.

1. Minimum Experience: Not less than a recommended five (5) years' experience in applications for indicated roofing system and in roofing projects of this magnitude equivalent to the required work.

2. Maintenance Proximity: Recommended location of not more than two hours normal travel time from Installer's maintenance plant to project site.
    a. Optional Proximity: At Contractor's option, and with Owner's prior acceptance of Installer's certification that work of the Maintenance Agreement will be performed by a designated Roofing Subcontractor whose plant is located not more than two hours normal travel time from project site, the above requirements will be waived.

C. Product Bid: The product bid must have past performance of installation on a roof in the state where project is located for a recommended minimum of five (5) years', under the same name of manufacturer as bid.

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D. Alterations to existing roofs: Contractor shall make necessary tie ins and alterations to existing roofs in accordance with details indicated and “Basis of Design” product requirements so as to maintain original warranty on existing roofs and/or achieve complete weather tight conditions.

1.3 SUBMITTALS

A. Submit certification that the roof materials furnished for roof alterations and tie-ins is Tested and Approved by Factory Mutual as a Class 1-SH roof system with 1-90 Wind Uplift Requirements, or Listed by Underwriters Laboratories or Warnock Hersey for external fire tests of ASTM E - 108 Class A.

B. Product Data for each type of product specified include manufacturer's technical product data, installation instructions, and recommendations for each type of roofing product required. Include data substantiating that materials comply with specified requirements.

C. For all modified bituminous sheet roofing include independent test data according to ASTM designation D-5147-91 "Standard Test Methods for Sampling and Testing Modified Bituminous Sheet Material" substantiating that materials comply with specified requirements. A separate Certificate of Analysis for each production run of material shall indicate the following information:

1. Material type.
2. Lot number.
3. Production dates.
4. Dimension and Mass.
5. Physical and Mechanical Properties.

D. Shop Drawings: Submit roofing membrane layout Drawings showing the outline of existing roof and locations of flashings and tie-ins, specific roofing details illustrating relationships with adjacent construction, and flashing details at indicated tie-in conditions.

1. Submit shop drawings of manufactured and/or fabricated sheetmetal work.

2. Contract Drawing Detail Approval: If the roofing manufacturer takes exception to the Bid Document details, the manufacturer shall provide the Roofing Subcontractor with acceptable details to be submitted to the Architect for approval. This Project must receive Architect’s approval through this process prior to shipment of materials to the project site. All roofing work required by the roofing system manufacturer shall be included in the Contract at no additional cost to the Owner.

E. Samples: Samples of each material specified, properly labeled.

1. Roof membrane: For project records, submit 8- by 10-inch samples of membrane cut from rolls of each type of material used on the project.

2. Flashing membrane: Submit 12-inch-square samples of sheet material to be used for base flashings.

3. Fasteners: Submit (2) of each type.

4. Adhesives: Submit samples for each type to be used.

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1.4 JOB CONDITIONS

A. Roofing Conference: Prior to the installation of the roofing repairs and associated work, meet at the project site with the Installer, the Installers of each component of associated work, and the Architect and other representatives directly concerned with performance of the work, including, where applicable, product manufacturers and the Owner. Record (by the Contractor) the discussions of the conference and the decisions and agreements, or disagreements reached, and furnish a copy of the record to each party attending. Review foreseeable methods and procedures related to the roofing work including, but not necessarily limited to, the following:

1. Review Project requirements (Drawings, Specifications and other Bid Documents).

2. Review status of existing conditions and substrate (by the Roofing Installer), including extent of moisture penetration in existing work, drying and similar considerations.

3. Review availability of materials, tradesmen, equipment and facilities needed to make progress and avoid delays.

4. Review weather and forecasted weather conditions, and procedures for coping with unfavorable conditions.

5. Review regulations concerning Code compliance, environmental protection, health, safety, fire and similar considerations.

6. Establish units of work, including preparation, such that each unit may be completed prior to end of each day's work.

B. Weather Condition Limitations:

1. During periods of inclement weather, Roofing Subcontractor shall use wet power vacuums, on the day following each rain, to remove standing water so as not to delay their operations.

2. Proceed with roofing and associated work only when weather conditions will permit unrestricted use of materials and quality control of the work being installed, complying with the requirements and the recommendations of the roofing materials manufacturers.

3. Proceed only when the Subcontractor is willing to guarantee the work as required and without additional reservations and restrictions.

4. Protect existing work and property from damage during the course of the work. Be prepared for all weather and other contingencies as prudence may dictate. Maintain on the site at all times sufficient and proper materials for temporary roofing and other protection when weather conditions prevent continuance of work and do not permit completion of each unit of work prior to the end of each working day. Temporary protection and roofing work must be provided at no additional cost to the Owner.

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5. Remove and discard materials which have been used for temporary roofs, protection, water seals, and related work. Do not incorporate used materials into the work.

C. Storage of Materials and Property: Do not overstress roof decks and supporting structures. Avoid placing loads at midspans of framing. All superimposed loads shall be well distributed. Do not store more material on roofs than can be installed in one and one-half working days. Store materials, except membrane, in dry area and protect from water and direct sunlight. Damaged materials shall be replaced at Contractor's expense. Protect adjacent work from damage due to roofing operations and related work. Provide temporary protection against walls adjacent to roofing work; remove protection upon completion.

PART 2 - PRODUCTS

2.1 GENERAL ROOFING MATERIALS

A. Refer to other sections for new roofing work and all requirements of roofing materials, products and systems.

B. **Alterations and Tie-ins to Existing Roofs**

1. Provide Roofing materials, flashings, primers, adhesives and all other required accessories to meet or exceed the following “Basis of Design” minimum performance requirements. All roofing materials shall be UL Class A, FM Class 1-SH listed and shall comply with the International Building Code, and CGSB 37-GP-56M standards.

2. Wood Cants and Curbs: Lumber; #2 grade free from warping and visible decay; fire retardant treated and marked.

3. Mechanical Fasteners: Manufacturer’s standard FM approved fasteners for this type of application.

4. Other Materials and Accessories: Manufacturer’s standard and/or approved products for indicated applications.

PART 3 - EXECUTION

3.1 INSTALLATION, GENERAL

A. Contractor shall prepare a plan and submit it to the Architect for which identifies how the roofing repairs and all associated work will be performed so as to prevent foot traffic on the newly installed roofing system.

B. Coordinate the installation of roofing materials and associated work so as to provide a complete system complying with the combined recommendations of manufacturers and installers involved in the work.

C. Protect other work from spillage of roofing materials, and prevent materials from entering and clogging drains and conductors. Replace or restore other work which is soiled or otherwise damaged by the performance of the roofing and associated work.

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3.2 PERFORMANCE REQUIREMENTS

A. Initial Weather Resistance: It is required that the roofing and associated work be durable in normal weather exposure and not leak water during rainstorms. After completion of the roofing and associated work, and either during or immediately after a rainstorm, (and just before final acceptance of the work) the Installer shall meet with the Contractor at the project and inspect the building for evidence of leaks in the roofing and associated work. Prepare a written report without delay (by Contractor) covering the inspection, and submit to Owner (with copy to Architect). Should no rain occur between the time the roof is completed and when all punch list items have been corrected, this requirement shall be waived.

B. Repair or replace roofing and associated work as required to eliminate leaks or other inability of roofing to initially withstand normal weather exposure.

1. Abnormal weather exposure is recognized to include hailstorms, lightning strikes, hurricane and tornadic winds, and other unusual phenomena of the weather as frequently covered by building insurance.

C. **Alterations and Tie-ins to Existing Roofs**

1. Examine substrate surfaces to receive roofing system and associated work and conditions under which roofing will be installed. Do not proceed with roofing until unsatisfactory conditions have been corrected in a manner acceptable to Installer.

2. Verify that deck is securely fastened with no projecting fasteners and with no adjacent units in excess of 1/16 inch out of plane.

3. Cooperate with inspection and test agencies engaged or required to perform services in connection with roofing system installation.

4. Insurance/Code Compliance: Install roofing and flashing work (and test where required to show) compliance with governing regulations.

5. Coordinate the installation of roofing sheets, flashings, stripping, coatings and surfacing, so that felts are not exposed to precipitation nor exposed overnights. Provide cut-offs at the end of each day's work, to cover exposed felts and insulation with a course of coated felt with joints and edges sealed with roofing cement. Remove cut-offs immediately before resuming work. Glaze coats installed ply-sheet courses at the end of each day's work where final surfacing has not been installed.

6. Substrate Joint Penetrations: Do not allow adhesive to penetrate substrate joints and enter building or damage existing or new insulation, vapor barriers (retarders) or other construction.

7. General Requirements: Apply roofing membrane in accordance with roofing material manufacturer’s instructions. Application of roofing shall immediately follow application of base sheet and/or insulation as a continuous operation.

D. Agreement to Maintain Roofing: See Part 1, Section 01900, Guarantees and Warranties.

END OF SECTION 07500

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SECTION 07530 - REPAIRS TO SINGLE PLY EPDM ROOFING MEMBRANE SYSTEM

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. The extent of the all roofing repair work to an existing warranted Carlisle roofing system, as shown on the Drawings or as required to provide weather/water tight conditions.

B. Existing System Type: Fully Adhered System.

C. Section Includes:

1. Substrate preparation;
2. Flashings;
3. All manufacturer's approved and /or recommended materials for repair work.

D. Furnish all labor, materials and incidentals required to complete roofing repair work, flashing, and all other roofing components supplied by the roofing membrane manufacturer and as shown on the Drawings and/or specified herein.

1.3 SUBMITTALS

A. Product Data: Submit technical product information and installation instructions for each major roofing product or system required as necessary to demonstrate products comply with project requirements. Transmit a copy to the installer.

B. Shop Drawings: Submit roofing membrane layout Drawings showing outline of roof and roofing size, specific roofing details illustrating relationships with adjacent construction and flashing details at roof penetrations.

1. Shop drawings must be submitted to the roofing manufacturer and the Architect for review and obtaining approvals. The Architect shall not provide final review on shop drawings, unless manufacturer's review and stamped approval are indicated. Contractor to allow sufficient time required for shop drawings reviews.

2. Shop drawings shall include, but not limited to the following:
   a. Completely executed Notice of Awards roofing repair work from the roofing membrane manufacturer.
   b. Outline of roof and size.
   c. Roof deck type.
   d. Roof slope and designated direction of slope.
   e. Location and type of all penetrations.
   f. Roof perimeter condition.
   g. All roofing items which will be supplied by the roofing membrane manufacturer.

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3. Submit installation diagrams and instructions for installation of roofing system.

C. Submit Installer Certification that Installer is franchised and/or approved by the roofing material manufacturer for installation of a fully guaranteed roof.

1. The installer certification shall be submitted on the manufacturer's letterhead.

D. Certifications: The Contractor / Installer (grantor) shall submit certifications to the Architect that the Bid Documents including the materials, methods and details of work provided for therein, are adequate to accomplish the specified results.

1.4 QUALITY ASSURANCE

A. Roofing and associated work must be performed by a single firm, called the "Installer" in this section, so that there will be undivided responsibility for the specified performance of all component parts, including the following:

1. Elastic roofing and base flashing.
2. Sealant.

B. Installer: The roofing contract shall be carried out only by an installer who is franchised or otherwise accepted in writing by the roofing materials manufacturer for installation of a fully guaranteed roof in accordance with the manufacturer of the roofing membrane system requirements.

C. Roofing Subcontractor: The Roofing Subcontractor shall have a recommended minimum of five (5) years' experience in the installation of the specified roofing system, with roofing projects of magnitude equivalent to the required work. Foreman employed for this project must submit evidence of having been trained by the roofing manufacturer.

1. Minimum experience: Not less than a recommended five (5) years' experience with roofing projects of magnitude equivalent to the required work.

2. Maintenance Proximity: Recommended location of not more than two hours normal travel time from Installer's maintenance plant to project site.

D. Manufacturer of Roofing Materials: Obtain primary roofing materials from a single manufacturer, who has published complete information on the required roofing system, and offers to guarantee the completed roofing installation as required. Obtain secondary materials from sources acceptable to the manufacturer of the primary roofing materials.

1. Manufacturer of Roofing System is further limited to one who will fulfill the following requirements:
   a. Participates in a pre-roofing conference.
   b. Shows a record of continued production of the specified materials for at least twenty (20) years.
   c. Provides a list of executed projects in the State of New Jersey.
   d. Provides complete manufacturer's produced printed manuals describing the roofing membrane and accessory materials, technical Specifications, method of installation,

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including manufacturer's standard detailed drawings.
e. Furnishes guarantee as per Section 01900.

2. The roofing materials shall meet 1A-90 criteria as shown in Factory Mutual Loss Prevention Data Bulletin I-28.

3. Inspection: Upon completion of the installation, an inspection shall be made by a technical representative of the roofing manufacturer to ascertain that the roofing system has been installed according to roofing manufacturer's latest published specifications and details.
   a. There shall be no deviation made from this specification without prior written approval by the manufacturer and the Architect.

E. Contract Drawing Detail Approval: If the roofing manufacturer takes exception to the Bid Document details, the manufacturer shall provide the Roofing Subcontractor with acceptable details to be submitted to the Architect for review and approval.

1. This Project must receive Architect's approval through this process prior to shipment of materials to the project site.

2. All roofing repair work required by the roofing system manufacturer shall be included in the Contract at no additional cost to the Owner.

3. Any unusual conditions or requirements must be brought to the attention of the manufacturer of the roofing membrane system.

4. When field conditions necessitate modifications to originally approved shop drawings, a copy of the shop drawings which include outlining all modifications shall be submitted to the manufacturer for revisions and obtaining his approval.

G. Final Inspection:

1. Approved Applicators must supply the roofing manufacturer with an As-Built shop drawing for final inspection.

2. As-Built shop drawings must be approved and given a shop drawing number by the roofing manufacturer's construction materials department.

H. Agreement to Maintain Roofing:

1. Provide Roofing Subcontractor's agreement to maintain the roof systems and related roof sheet metal work in a weathertight and watertight condition for a period of **two (2) years** starting from the date of approved substantial completion date and in accordance with special Maintenance Contract outlined herein.
   a. During the Maintenance Period, the Roofing Subcontractor agrees that within 24 hours of receipt of notice from the Owner they will inspect and make immediate emergency repairs to defects or to leaks in the roof systems and related flashing work. They further agree that within a reasonable time, they will restore the affected items to the standard of the original Specifications and without voiding the Manufacturer guarantee. All emergency and permanent work during the life of the

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agreements to maintain the roof systems will be done without cost to the Owner, except in the event it is determined that such leaks were caused by abuse, lightning, hurricanes, tornado, hailstorm, other unusual climatic phenomena of the elements, or failure of related work (except related roof sheet metal work included under the Agreement) installed by other parties.

b. Agreement to maintain roofing system shall be in a written form acceptable to the Architect/Owner and before final payment is released for the project..

c. If, 48 hours after notification of roof leakage, Contractor has not responded, Owner shall have the right, without invalidating his warranties and at the expense of the Contractor, to make any emergency temporary repairs that are required in order to protect the building and its contents from damage due to roof leakage.

1.5 PROJECT CONDITIONS

A. Begin roofing repairs work when weather conditions are within acceptable limits according to manufacturer's installation instructions.

1.6 PRODUCT HANDLING

A. Deliver materials to project site in manufacturer's unopened sealed containers or unopened packages, with manufacturer's labels intact.

B. Store materials in weather-protected environment, clear of ground and moisture.

1. Storage of Materials will not be permitted on the roof, unless guaranteed, in writing, by the Subcontractor, not to damage existing roofing.

1.7 JOB CONDITIONS

A. Proceed with roofing repair work only after substrate and penetrating work and repair of any damage, have been completed.

B. Pre-Roofing Installation Conference:

1. Prior to the installation of the roofing and associated work, meet at the project site with the installer, the installer of each component of associated work, the Architect, Construction Manager and other representatives directly concerned with performance of the work including, the roofing membrane system manufacturer and the Owner.

2. Provide Record of the discussions of the conference and the decisions and agreements (or disagreements) reached, and furnish a copy for the record, to each party attending.

3. Provide at least 48 hours advance notice to participants prior to convening pre-roofing conference.

4. Review foreseeable methods and procedures related to the roofing repair work, including but not limited to the following;
   a. Review Project requirements (Drawings, Specification and other Bid Documents).
   b. Review status of conditions and substrates (by the roofing installer), including extent of moisture penetration in existing work, drying and similar considerations.
   c. Review availability of materials, tradesmen, equipment and facilities needed to make

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progress and avoid delays.

d. Review weather and forecasted weather conditions and procedures for coping with unfavorable conditions.
e. Review regulations concerning code compliance environmental protection, health, safety, fire and similar considerations.
f. Establish units of work, including scheduling removals, preparation and replacement, such that each unit may be completed prior to end of each day's work.
g. Review the schedule for the work.

C. Weather Conditions: Proceed with roofing repair work only when weather conditions are in compliance with manufacturer's recommended limitations and when conditions will permit the work to proceed in accordance with requirements and the manufacturer's recommendations.

D. Certification: The Subcontractor/installer (guarantor) shall submit a certification to the Architect that the Bid Documents including the materials, methods and details of work provided for therein, are adequate to accomplish the specified results. In so doing, the Guarantor also agrees either that the materials and methods specified herein are such as to insure the result required or he will, at no additional expense, furnish such additional or alternative items of labor and materials (or both) as may be necessary to accomplish the stated intent of the Bid Documents.

E. Conditions not as Anticipated: The Subcontractor shall immediately notify the Architect and Construction Manager of upon discovery of conditions which may jeopardize successful accomplishment of and prevent execution of the work as intended by the Architect, as provided in, or not anticipated by the Contract.

1.8 PERFORMANCE REQUIREMENTS

A. Initial Weather Resistance: It is required that the roofing and associated work be durable in normal weather exposure and not leak water. After completion of the roofing and associated work, and either during or immediately after a rain storm, (and before final acceptance of the work) the installer shall inspect the building for evidence of leaks in the roofing and associated work. Prepare a written report, within five (5) working days, covering the inspection, and submit to Owner (with a copy to the Architect).

1. The installer shall repair or replace roofing and associated work as required to eliminate leaks or other inability of roofing to initially withstand normal weather exposure.

2. Abnormal weather is recognized to include hailstorms, lightning strikes, hurricanes and tornadic winds and other unusual phenomena of the weather as frequently covered by the buildings insurance.

PART 2 - PRODUCTS

2.1 MANUFACTURER / MATERIALS / REPAIR WORK

A. Basis of Design: Provide all required roofing repairs materials and accessories by Carlisle Syntec Inc.. Products shall include but are not limited to the following:

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1. Splice Repairs:
    a. Using a cotton rag or HP Splice Wipe, scrub the area in a circular motion until the surface is a consistent matte black color without any streaking.
    b. Pull any loose edges of the splice apart, reapply splice adhesive and mate the two surfaces together.
    c. Clean the splice area with Sure-Seal HP – 250 Primer on both sides extending past the width of the 6" cover strip.
    d. Overlay the splice area with 6" wide Pressure-Sensitive Flashing, cover strip, or uncured Elastoform Flashing centered over the edge of the splice.

2. Flashing Repairs:
    a. Flashing areas are to be cleaned using Weathered membrane Cleaner and then HP-250 Primer following the above instructions.
    b. Flashings that are loose are to be re-secured.
    c. Flashings are then to be overlaid with Pressure-Sensitive Elastoform.

3. All Components of the roofing repair work shall be products indicated in manufacturer's product data for indicated repairs work.

4. In Seam Sealant: Furnished by membrane manufacturer.

5. Splicing Tape: Furnished by the membrane manufacturer, 3" and 6" wide splicing tape for indicated applications and as per manufacturer's requirements.

6. Splicing Cement: Furnished by membrane manufacturer.

7. Lap Sealant: Compatible with existing and new materials with which it is used, shall be trowel or gun consistency furnished by membrane manufacturer.

8. Water Cut-Off Mastic: Compatible with materials with which it is used, furnished by membrane manufacturer.

9. Pourable Sealer: Compatible with materials with which it is used, furnished by membrane manufacturer.

10. Splice Cleaner or Primer: Furnished by membrane manufacturer.

11. Reinforced Securement Strips: Manufacturer's standard 6 inch or 9 inch wide by 100 feet long reinforced membrane perimeter fastening strip.
    a. Seam Fastening Plates: 2 inch diameter FM approved metal plates used in conjunction with reinforced securement strip.

12. Manufactured Flashing Materials:
    a. Manufacturer's standard in accordance with his detailed Drawings and printed Specifications and instructions for installation.

13. Thermal Barrier Board:
    a. Basis of Design: "Securerock Gypsum-Fiber" Roof Board as manufactured by USG; or approved equal.
        1) Water-resistant and silicone-treated gypsum core board, UL 790 Class A listing

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as a barrier board, and tested in accordance with ASTM E-84;
a) Flame Spread: 0
b) Smoke developed: 0
2) Board Size: 4' x 4'.
3) Thickness (Uniform): 1/2", R-Value per ASTM C518 = R.5.
4) FM approved for Wind Uplift, tested for 60 and 90 psf.
5) Stagger all joints with bottom layer.

PART 3 - EXECUTION

3.1 GENERAL

A. Install all work in conformance with the manufacturers printed Specifications and as shown on approved shop drawings.

B. Cautionary Requirements:

1. Do not use oil base or plastic roof cement.

2. Do not allow waste products (petroleum, grease, oil, solvents, vegetable or mineral oil, animal fat) or direct steam venting to come in contact with EPDM roofing system.

3. Do not expose membrane and accessories to a constant temperature in excess of 180°F.

4. Cement and bonding adhesives contain petroleum distillates and are extremely flammable. Do not breath vapors or use near fire.

5. Splice wash: Furnish by membrane manufacturer.

6. Splicing and bonding surfaces shall be dry and clean.

7. Roof surface shall be free of ponded water, ice, or snow to eliminate future condensation problems.

8. Seal Splice Wash used in the splicing procedure is extremely flammable; do not use near fire or flame or in a confined or unventilated area. Dispense only from a UL listed or approved safety can.

C. Delivery, Storage and Handling:

1. Deliver materials in original unopened containers.

2. Containers labeled with manufacturer's name, brand name, installations, instructions and identification of various items.

3. Store materials, except membrane, between 60°F and 80°F. If exposed to lower temperature, restore to proper temperature before using.

4. Store materials, except membrane in a dry area and protect. Do not install damaged material. Damaged materials shall be replaced at Contractor's expense.

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3.2 INSPECTION

A. Installer must examine substrates and conditions under which roofing work is to be performed and must notify Subcontractor in writing of unsatisfactory conditions. Do not proceed with roofing work until unsatisfactory conditions have been corrected in a manner acceptable to installer.

3.3 PREPARATION OF SUBSTRATES

A. Roof substrate shall be dry and free of foreign materials. Remove nails, nail heads and other protrusions from existing deck.

1. Roof substrate shall be free of ponded water to eliminate future condensation problems.

3.4 INSTALLATION (GENERAL)

A. Comply with instructions of the primary roofing materials manufacturer.

B. Coordinate with all roof mounted items to facilitate roofing installation.

C. Confinement of Materials: Do not allow fluid and plastic to spill or migrate beyond surfaces of intended application.

1. Subcontractor to clean all migrated materials exposed to view.

D. Performance: It is required that roofing work be water-tight for normal weather exposure and not deteriorate in excess of normal weathering.

E. Clean site of all debris and Subcontractor materials; restore damaged site work, (i.e.; shrubs, turf, curbs, etc.) to conditions prior to start of this work.

F. Install accessories as shown and as recommended by the prime materials manufacturer.

G. Coordinate Roofing repairs with flashing and other adjoining work to ensure proper sequencing of entire work.

3.5 PROTECTION

A. Subcontractor shall provide protection for roofing during construction period, so that the work will be without damage or deterioration except for normal weathering at time of acceptance.

B. Daily Seal: Care should be exercised to ensure that water does not flow beneath any complete sections of roof. Temporarily seal loose edge of membrane when weather is threatening.

END OF SECTION 07530

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SECTION 07535 - MODIFIED BITUMINOUS MEMBRANE ROOFING - COLD APPLIED

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. The Specification sections “General Conditions,” “Special Requirements” and “General Requirements” form a part of this section by this reference hereto and shall have the same force and effect as if printed herewith in full.

1.2 SECTION INCLUDES

A. Cold Applied 2-Ply Asphalt Roofing (StressPly)

B. Roof Penetration Flashings

C. Roof Insulation and Recovery Boards

D. Roof Walkway and Protection Pads

E. Roof Membrane Manufacturers Inspection

1.3 RELATED SECTIONS

A. Section 01030 – Alternate Bids.

B. Section 06100 - Carpentry.

C. Section 07070 – Selective Roof Demolition.

D. Section 07600 - Flashing, Sheet Metal and Roofing Accessories.

E. Section 07800 – Roof Specialties and Accessories.

F. Section 07900 - Joint Sealer Assemblies.

G. Mechanical Work – Refer to Drawings for the Specifications.

1.4 SCOPE OF WORK

A. Furnish and install repairs to the 2-Ply Modified Bitumen Roof Membrane System, SBS Adhesive, flashing, insulation and other roofing boards and all miscellaneous materials required associated with the HVAC equipment Replacement**.**

1.5 REFERENCES

A. ASTM D 41 - Standard Specification for Asphalt Primer Used in Roofing, Dampproofing, and Waterproofing.

B. ASTM D 312 - Standard Specification for Asphalt used in Roofing.

C. ASTM D 451 - Standard Test Method for Sieve Analysis of Granular Mineral Surfacing for Asphalt Roofing Products.

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D. ASTM D 1970 - Specification for Sheet Materials, Self-Adhering Polymer Modified Bituminous, Used as Steep Roofing Underlayment for Ice Dam Protection.

E. ASTM D 1079 Standard Terminology Relating to Roofing, Waterproofing and Bituminous Materials.

F. ASTM D 1227 Standard Specification for Emulsified Asphalt Used as a Protective Coating for Roofing.

G. ASTM D 1863 Standard Specification for Mineral Aggregate Used as a Protective Coating for Roofing.

H. ASTM D 2178 Standard Specification for Asphalt Glass Felt Used as a Protective Coating for Roofing.

I. ASTM D 2822 Standard Specification for Asphalt Roof Cement.

J. ASTM D 2824 Standard Specification for Aluminum-Pigmented Asphalt Roof Coating.

K. ASTM D 4601 Standard Specification for Asphalt Coated Glass Fiber Base Sheet Used in Roofing.

L. ASTM D 5147 Standard Test Method for Sampling and Testing Modified Bituminous Sheet Materials.

M. ASTM D 6162 Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using a Combination of Polyester and Glass Fiber Reinforcements.

N. ASTM D 6163 Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Glass Fiber Reinforcements.

O. ASTM D 6164 - Standard Specification for Styrene Butadiene Styrene (SBS) Modified Bituminous Sheet Materials Using Polyester Reinforcements.

P. ASTM D 6757 - Standard Specification for Underlayment Felt Containing Inorganic Fibers Used in Steep-Slope Roofing.

Q. ASTM E 108 - Standard Test Methods for Fire Test of Roof Coverings

R. Factory Mutual Research (FM): Roof Assembly Classifications.

S. National Roofing Contractors Association (NRCA): Roofing and Waterproofing Manual.

T. Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA) - Architectural Sheet Metal Manual.

U. Underwriters Laboratories, Inc. (UL): Fire Hazard Classifications.

V. Warnock Hersey (WH): Fire Hazard Classifications.

W. ANSI-SPRI ES-1 Wind Design Standard for Edge Systems used with Low Slope Roofing Systems.

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X. ASCE 7-16, Minimum Design Loads for Buildings and Other Structures

Y. UL - Fire Resistance Directory.

Z. FM Approvals - Roof Coverings and/or RoofNav assembly database.

1.6 DESIGN / PERFORMANCE REQUIREMENTS

A. Perform work in accordance with all federal, state and local codes.

B. Exterior Fire Test Exposure: Roof system shall achieve a UL, FM or WH Class rating for roof slopes indicated on the Drawings as follows:
   1. Underwriters Laboratory Class A Rating.
   2. Warnock Hersey Class A Rating.

C. Roof System membranes containing recycled materials shall be third party certified through UL Environment.

D. Roof system shall have been tested in compliance with the following codes and test requirements:
   1. ITS Directory of Listed Products
   2. FM Approvals:
      a. RoofNav Website

1.7 SUBMITTALS

A. Submit under provisions of AIA A232 and Section 00800.

B. Product Data: Manufacturer's data sheets on each product to be used, including:
   1. Preparation instructions and recommendations.
   2. Storage and handling requirements and recommendations.
   3. Installation instructions.
   4. Safety Data Sheets.
   5. Roof Membrane – Certificate of Analysis

C. Shop Drawings: Submit shop drawings including installation details of insulation including notation of roof slopes and fastening patterns of insulation and base modified bitumen membrane, prior to job start.

D. Recycled Materials: Provide third party certification through UL Environment of roof System membranes containing recycled materials

E. Verification Samples: For each modified bituminous membrane ply product specified, two samples, minimum size 6 inches (150 mm) square, representing actual product, color, and patterns.

F. Manufacturer's Certificates: Provide to certify products meet or exceed specified requirements.

G. Closeout Submittals: Provide manufacturer's maintenance instructions that include recommendations for periodic inspection and maintenance of all completed roofing work.

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H. Certifications: The Contractor / Installer / Manufacturer (grantor) shall submit certifications to the Architect that the Bid Documents including the materials, methods and details of work provided for therein, are adequate to accomplish the specified results.

1. Subcontractor shall provide manufacturer's "Roof Assembly Letter" confirming each proposed roof system and decking description as follows:

a. Assembly,
b. Construction Type,
c. Maximum Slope,
d. Deck Type,
e. Insulation - Layer (1),
f. Insulation Fastening,
g. Insulation Attachment Requirements; Field, Perimeter, Corners,
h. Insulation - Layer (2),
i. Insulation Attachment; Adhesive,
j. Membrane.

I. **Certificate of Analysis**: The Manufacturer shall submit, during the shop drawing process, a certificate of analysis which identifies pertinent information of the actual product which is being manufactured for this project. Refer to the following example (following this Specification section) of the information which must be furnished.

1. The Architect shall at their discretion, take samples of the product delivered to the project site and send the samples to an Independent Testing Laboratory to verify the information provided by the manufacturer.

a. If the test results of the product delivered to the site differ from those indicated in the 'Certificate of Analysis' furnished by the Manufacturer, the Architect shall reject the deficient product. The Manufacturer shall, at their own cost, remove all deficient product from the site including labor and material for the product already installed, provide replacement material(s) of all deficient material(s) including freight costs and Liquidated Damages if the Milestone Dates identified in Section 01800 are not met.

J. Submit certification that the roof system furnished is Tested and Approved by Factory Mutual as a Class 1A roof system with 1-90 Wind Uplift Requirements, or Listed by Underwriters Laboratories or Warnock Hersey for external fire tests of ASTM E - 108 Class A and the following:

1. Evidence of Factory Mutual Approval Standard 4470 for the proposed membrane system.

2. Underwriters' Laboratories Class A acceptance of the proposed roofing system shall include cold adhesive without additional requirements for gravel or coatings. No other testing agency approvals will be accepted.

3. The roof configuration (including fastening of base sheet or insulation) shall be approved by FM for minimum 1-90 windstorm construction.

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4. The roof membrane configuration shall be approved by FM for Class 1-SH (severe hail) exposure.

K. Submit product data for each type of product which is part of the roofing assembly, including sheet roofing plies, flashings, roofing boards, sheet metal work, with manufacturer's technical product data, test data and Physical Properties and Performance. Include typical details, installation instructions, and recommendations for each type of roofing product required. Include data substantiating that materials comply with specified requirements.

L. Shop Drawings: Submit roofing membrane layout drawings showing outline of roof, specific roofing details illustrating relationships with adjacent construction, and flashing details at roof penetrations.

1. Submit shop drawings of pre-manufactured and/or fabricated sheet metal work.

2. Contract Drawing Detail Approval: If the roofing manufacturer takes exception to the Bid Document details, the manufacturer shall provide the Roofing Subcontractor with acceptable details to be submitted to the Architect for approval.

a. This Project must receive the Architect's approval through this process prior to shipment of materials to the project site.

b. All roofing work required by the roofing system manufacturer shall be included in the Contract at no additional cost to the Owner.

M. Samples: Samples of each material specified, properly labeled.

1. Roof membrane: For project record, submit 8- by 10-inch samples of membrane cut from rolls of each type of material used on project.

2. Flashing membrane: Submit 12-inch-square samples of sheet material to be used for base flashings.

3. Fasteners: Submit (2) of each type.

4. Coatings and adhesives: Submit samples for each type to be used.

N. Submit a letter from the primary roofing manufacturer confirming that proposed membrane manufacturer has been producing SBS products in the United States for a recommended five (5) years' without a change in the basic product design, physical and mechanical properties, or SBS modified bitumen blend, polymer Specification, asphalt and filler formulation.

1. Letter shall confirm the number of years it has directly manufactured the proposed primary roofing system under the trade name and/or trademarks as proposed.

2. Letter shall confirm that a phased roof application, with only the modified bitumen base ply in place for a period of up to 10 weeks, is acceptable and approved for this project.

3. Letter shall include a recommended list of five (5) of the proposed primary roofing

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manufacturer's projects, located in the United States, of equal size and degree of difficulty which have been performing successfully for a period of at least 5 years.

4. Letter shall confirm that the filler content in the elastomeric blend of the proposed roof membrane and flashing components does not exceed 35% in weight.

5. Letter shall include a complete list of material physical and mechanical properties for each sheet including: weights and thicknesses; low temperature flexibility; maximum load; elongation @ 5% maximum load (ultimate elongation); dimensional stability; high temperature stability; granule embedment and resistance to thermal shock (foil faced products).

6. Letter shall confirm that the proposed roof membrane and flashing components meet or exceed the physical and mechanical requirements listed in Part 2 of this specification.

7. Letter shall confirm that the proposed roof membrane system meets the requirements of ASTM D 5849 Resistance to Cyclic Joint Displacement (fatigue) at 14°F (-10°C). Passing results shall show no signs of membrane cracking or interply delamination after 500 cycles in an unaged specimen and 200 cycles in a specimen after heat conditioning.

1.8 QUALITY ASSURANCE

A. Perform Work in accordance with NRCA Roofing and Waterproofing Manual.

B. Manufacturer Qualifications: Manufacturer: Company specializing in manufacturing products specified in this section with documented ISO 9001 certification and recommended minimum twelve (12) years and experience.

C. Installer Qualifications: Company specializing in performing Work of this section with a recommended minimum five (5) years documented experience and a certified Pre-Approved Contractor.

D. Installer's Field Supervision: Maintain a full-time Supervisor/Foreman on job site during all phases of roofing repair work while roofing work is in progress.

E. Product Certification: Provide manufacturer's certification that materials are manufactured in the United States and conform to requirements specified herein, are chemically and physically compatible with each other, and are suitable for inclusion within the total roof system specified herein.

F. Source Limitations: Obtain all components of roof system from a single manufacturer. Secondary products that are required shall be recommended and approved in writing by the roofing system Manufacturer. Upon request of the Architect or Owner, submit Manufacturer's written approval of secondary components in list form, signed by an authorized agent of the Manufacturer.

1.9 PRE-INSTALLATION MEETINGS

A. Convene minimum two weeks prior to commencing Work of this section.

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B. Review installation procedures and coordination required with related Work.

C. Inspect and make notes of job conditions prior to installation:
   1. Record minutes of the conference and provide copies to all parties present.
   2. Identify all outstanding issues in writing designating the responsible party for follow-up action and the timetable for completion.
   3. Installation of roofing system repairs shall not begin until all outstanding issues are resolved to the satisfaction of the Architect.

1.10 DELIVERY, STORAGE, AND HANDLING

A. Deliver and store products in manufacturer's unopened packaging with labels intact until ready for installation.

B. Store all roofing materials in a dry place, on pallets or raised platforms, out of direct exposure to the elements until time of application. Store materials at least 4 inches above ground level and covered with "breathable" tarpaulins.

C. Stored in accordance with the instructions of the manufacturer prior to their application or installation. Store roll goods on end on a clean flat surface. No wet or damaged materials will be used in the application.

D. Store at room temperature wherever possible, until immediately prior to installing the roll. During winter, store materials in a heated location with a 50 degrees F (10 degrees C) minimum temperature, removed only as needed for immediate use. Keep materials away from open flame or welding sparks.

E. Avoid stockpiling of materials on roofs without first obtaining acceptance from the Architect/Engineer.

F. Adhesive storage shall be between the range of above 40 degrees F (4 degrees C) and below 80 degrees F (27 degrees C). Area of storage shall be constructed for flammable storage.

G. In accordance with the manufacturer’s recommendations, immediately remove the plastic wrapping on the roof recovery boards and cover with a watertight, ventilated enclosure (i.e. tarpaulins). Prevent the formation of condensation on the boards.

1.11 COORDINATION

A. Coordinate repair work with installing associated metal flashing / counterflashing as work of this section proceeds.

1.12 PROJECT CONDITIONS

A. Maintain environmental conditions (temperature, humidity, and ventilation) within limits recommended by manufacturer for optimum results. Do not install products under environmental conditions outside manufacturer's absolute limits.

1.13 WARRANTY

A. Installer is to guarantee all work against defects in materials and workmanship for a

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period indicated following final acceptance of the Work.

1. Warranty Period: **Two (2) years** from date of acceptance.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Provide only roofing, insulation, adhesive and other materials as manufactured by or approved for use by the Roof Membrane Manufacturer for inclusion in the required work. Only roof membranes, adhesives, flashing and related materials, manufactured by the same Roof Membrane Manufacturer, are permitted for use.

B. Basis of Design: Repairs to the existing warrantied 2-Ply (minimum) Styrene Butadiene Styrene (SBS), Fiberglass Reinforced Modified Bitumen Membrane consisting of a heavy duty reinforced smooth surface base ply and reinforced ceramic granule cap ply installed in the Manufacturers' Low VOC Cold Adhesive meeting or exceeding all minimum technical requirements specified herein and as manufactured by one of the following Manufacturer:

C. Basis of Design Manufacturer: The Garland Company.

2.2 COLD APPLIED 2-PLY ROOF SYSTEM

A. Base (Ply) Sheet:
   1. FlexBase 80: 80 mil SBS (Styrene-Butadiene-Styrene) rubber modified roofing base sheet reinforced with a dual fiberglass reinforced scrim, performance requirements according to ASTM D 5147.
      a. Tensile Strength, ASTM D 5147
         1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 225 lbf/in XD 225 lbf/in
         2) 50 mm/min. @ 23 +/- 2 deg. C MD 39.0 kN/m XD 39 kN/m
      b. Tear Strength, ASTM D 5147
         1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 300 lbf XD 300 lbf
         2) 50 mm/min. @ 23 +/- 2 deg. C MD 1335 N XD 1335 N
      c. Elongation at Maximum Tensile, ASTM D 5147
         1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 7% XD 7%
         2) 50 mm/min. @ 23 +/- 2 deg. C MD 7% XD 7%
      d. Low Temperature Flexibility, ASTM D 5147:
         1) Passes -30 deg. F (-34.4 deg. C)

B. Modified Cap (Ply) Sheet:
   1. StressPly Plus FR Mineral: 155 mil SBS (Styrene-Butadiene-Styrene) mineral surfaced, rubber modified roofing membrane reinforced with a fiberglass and polyester composite scrim. ASTM D 6162, Type III Grade G
      a. Tensile Strength, ASTM D 5147
         1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 310 lbf/in XD 310 lbf/in
         2) 50 mm/min. @ 23 +/- 2 deg. C MD 54.25 kN/m XD 54.25 kN/m
      b. Tear Strength, ASTM D 5147
         1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 500 lbf XD 500 lbf
         2) 50 mm/min. @ 23 +/- 2 deg. C MD 2224 N XD 2224 N
      c. Elongation at Maximum Tensile, ASTM D 5147

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1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 8% XD 8%
2) 50 mm/min. @ 23 +/- 2 deg. C MD 8% XD 8%

d. Low Temperature Flexibility, ASTM D 5147, Passes -30 deg. F (-34 deg. C)

C. Interply Adhesive:

1. Weatherking Plus WC; or approved equal: Rubberized, polymer modified cold process asphalt roofing bitumen V.O.C. compliant ASTM D 3019. Performance Requirements:
   a. Non-Volatile Content ASTM D 4479 78%
   b. Density ASTM D1475 9 lbs./gal.
   c. Viscosity Stormer ASTM D562 900-1100 grams
   d. Flash Point ASTM D 93 100 deg. F min. (37 deg. C)
   e. Slope: up to 2:12

D. Flashing Base Ply:

2. FlexBase 80: 80 mil SBS (Styrene-Butadiene-Styrene) rubber modified roofing base sheet reinforced with a dual fiberglass reinforced scrim, performance requirements according to ASTM D 5147.
   a. Tensile Strength, ASTM D 5147
      1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 225 lbf/in XD 225 lbf/in
      2) 50 mm/min. @ 23 +/- 2 deg. C MD 39.0 kN/m XD 39 kN/m
   b. Tear Strength, ASTM D 5147
      1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 300 lbf XD 300 lbf
      2) 50 mm/min. @ 23 +/- 2 deg. C MD 1335 N XD 1335 N
   c. Elongation at Maximum Tensile, ASTM D 5147
      1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 7% XD 7%
      2) 50 mm/min. @ 23 +/- 2 deg. C MD 7% XD 7%
   d. Low Temperature Flexibility, ASTM D 5147:
      1) Passes -30 deg. F (-34.4 deg. C)

E. Flashing Ply Adhesive:

1. Weatherking Flashing Adhesive; or approved equal: Brush grade flashing adhesive.
   a. Non-Volatile Content ASTM D 4479 70 min.
   b. Density ASTM D 1475 8.6 lbs./gal. (1kg/l)
   c. Flash Point ASTM D 93 100 deg. F (37 deg. C)
2. Flashing Bond Adhesive
   a. Non-Volatile Content ASTM D 4586 70%
   b. Density ASTM D 1475 8.3 lbs./gal.
   c. Flash Point ASTM D 93 104 deg. F (39.4 deg. C)

F. Flashing Cap (Ply) Sheet:

3. StressPly Plus FR Mineral: 155 mil SBS (Styrene-Butadiene-Styrene) mineral surfaced, rubber modified roofing membrane reinforced with a fiberglass and polyester composite scrim. ASTM D 6162, Type III Grade G
   a. Tensile Strength, ASTM D 5147
      1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 310 lbf/in XD 310 lbf/in
      2) 50 mm/min. @ 23 +/- 2 deg. C MD 54.25 kN/m XD 54.25 kN/m
   b. Tear Strength, ASTM D 5147
      1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 500 lbf XD 500 lbf
      2) 50 mm/min. @ 23 +/- 2 deg. C MD 2224 N XD 2224 N

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c. Elongation at Maximum Tensile, ASTM D 5147
   1) 2 in/min. @ 73.4 +/- 3.6 deg. F MD 8% XD 8%
   2) 50 mm/min. @ 23 +/- 2 deg. C MD 8% XD 8%
d. Low Temperature Flexibility, ASTM D 5147, Passes -30 deg. F (-34 deg. C)

2.3 ROOF PENETRATION FLASHINGS

A. Plumbing/Vent Stack Flashings should be 4lb. (1.8 kg) sheet lead, or 20 oz. copper, formed and rolled.

B. Liquid Flashing - Tuff-Flash Plus LO: A two-part, asphaltic-polyurethane, low odor, liquid flashing material designed for specialized details unable to be waterproofed with typical modified membrane flashings.

1. Solids by Volume 86%
2. Tensile Strength, ASTM D 412: 650 psi
3. Elongation, ASTM D 412: 325%
4. Density @77 degrees F 8.3 lb/gal typical

C. Fabricated Flashings: Fabricated flashings and trim are specified in Section 07600.
1. Fabricated flashings and trim shall conform to the detail requirements of SMACNA "Architectural Sheet Metal Manual" and/or the CDA Copper Development Association "Copper in Architecture - Handbook" as applicable.

D. Manufactured Roof Specialties: Manufactured flashings and trim are specified in Section 07600.

1. Manufactured roof specialties shall conform to the detail requirements of SMACNA "Architectural Sheet Metal Manual" and/or the NRCA "Roofing and Waterproofing Manual" as applicable.

2.4 INSULATION BOARD

A. Basis of Design: “SecurShield“ Polyisocyanurate Board for Uniform and/or Tapered Insulation (and Tapered Saddles), as manufactured by Versico; or approved equal.

1. A foam core insulation board covered on both sides with a moisture resistant coated glass fiber mat facer.

2. Board Size: 4' x 4' only.

3. Thickness (Uniform): Match existing adjacent thickness and slope.
   a. Tapered insulation; 1/4" to the foot slope for the roof area; and ½" or 3.5” to the foot slope for gussets/crickets. Stagger all joints between layers.

4. R-Value (Uniform): Match existing

5. Density: 1.5 pcf.

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6. Surface - Burning Characteristics: Tested in accordance with ASTM E 84 and IBC 719.2:
   a. Flame Spread: Not more than 25
   b. Smoke - developed: Not more than 200

7. Insulation boards must pass the tests of:
   a. ASTM C1289-06, Type II, Class 2, Grade 3 (25 psi).
   b. FM Class 1 approval for steel roof deck construction: FM 4450 or UL1256.
   c. FM 4470 (subject to the conditions of approval described in www.Roofnav.com.

   * No substitution will be allowed.

B. Top Over Laying Board:

1. THERMAL BARRIER BOARD

   a. Basis of Design: "Securerock Gypsum-Fiber" Roof Board as manufactured by USG; or approved equal.
      1) Water-resistant and silicone-treated gypsum core board, UL 790 Class A listing as a barrier board, and tested in accordance with ASTM E-84:
         a) Flame Spread: 0
         b) Smoke developed: 0
      2) Board Size: 4' x 4'.
      3) Thickness (Uniform): 1/2", R-/value per ASTM C518 = 0.5
      4) FM approved for Wind Uplift, tested for 90 psf.
      5) Stagger all joints with bottom layer.

C. Adhesive for Top Over Laying Boards: "Insul-Lock HR" as provided and recommended by roofing membrane manufacturer.

1. Insulation Adhesive: Dual-component, high rise foam adhesive as recommended by insulation manufacturer and approved by FM indicated ratings.

   a. Tensile Strength (ASTM D412).....250 psi
   b. Density (ASTM D1875).....8.5 lbs./gal.
   c. Viscosity (ASTM D2556).....22,000 to 60,000 cP.
   d. 2 `Peel Strength (ASTM D903).....17 lb/in.
   e. 3 `Flexibility (ASTM D816).....Pass @ -70°F

D. Sealant: A moisture-curing, non-slump elastomeric sealant designed for roofing applications. The sealant shall be approved by the roof membrane manufacturer for use in conjunction with the roof membrane materials.

1. As recommended by roofing membrane manufacturer; or approved equal.

2.5 MISCELLANEOUS ROOFING MATERIALS

A. Ceramic Granules: No. 11 grade specification ceramic granules of color scheme matching the granule surfacing of the finish ply.

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B. Cant Strips and Tapered Insulation Edge: provide only manufacturer roof insulation accessory materials composed of wood fiber combined with waterproofing binders. The top surface shall be pre-treated with an asphalt-based coating. The face of the cant shall have a nominal four (4) inch dimension. Provide tapered insulation edge boards to provide smooth transition, without vertical rise, in dimensions required to achieve positive slope.

C. Walkway & Protection Pads: TRAFGARD, Recycled rubber (97% recycled rubber), anti-skid surface pads, manufactured as a traffic pad for foot traffic and acceptable to roofing system manufacturer.

1. Pad Size: 3'-0" x 4'-0" x ½" thick for walkway pads

E. Protection and Walkway Pads Adhesive: Greenlock Structural Sealant; or approved equal.

F. Mechanical Fasteners: Manufacturer's standard approved fasteners for this type of application.

1. Fasteners: Corrosion resistant screw fastener as recommended by roof membrane manufacturer.
   a. Factory Mutual Tested and Approved with three (3) inches coated disc for I-90 rating, length required to penetrate metal deck one inch.
   b. Color shall be Gray.

2. GAF "Drill-Tec #14 Fastener, length as required, #3 Phillips Head, Color Grey; or approved equal.

G. Base Sheet: An approved ASTM D4601, Type II: Ultra-Shield Glasbase; GAF-GLAS #75 or Perma-ply 28 glass fiber base sheet; or approved equal.

H. Base Sheet Fasteners:

1. OMG Roofing Products' OlyLok 1.4 or 1.8 base sheet fastener **as required per field pullout tests.** At a minimum, all fasteners shall be installed per this Specification and manufacturer's recommendations, whichever is more stringent, to resist uplift pressures as calculated in accordance with FM-I-90 wind uplift resistance and **confirmed field tested pullout values.**

I. Metal Discs: Flat discs or caps of zinc-coated sheet metal not lighter than 28 gauge and not less than 1-inch in diameter. Discs shall be formed to prevent dishing. Bell or cup-shaped caps are not acceptable.

J. Related Materials and Accessories

1. Metal Primer: Zinc chromate type.
2. Plastic Cement: ASTM D 4586
3. Sealant: Refer to Section 07900 or on drawings.
4. Fasteners:

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a. Corrosion resistant screw fastener as recommended by metal manufacturer. Finish exposed fasteners same as flashing metal.

b. Fastening shall conform to Factory Mutual requirements or as stated on section details, whichever is more stringent.

5. Wood Blocking & Curbs: Lumber; #2 grade free from warping and visible decay; fire retardant treated (FRT) to meet AWPA C20 (lumber), and marked and in accordance with requirements indicated in section 06100.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Do not begin installation until substrates have been properly prepared.

B. Inspect and approve the deck condition, slopes and fastener backing if applicable, parapet walls, expansion joints, roof drains, stack vents, vent outlets, nailers and surfaces and elements.

C. Verify that work penetrating the roof deck, or which may otherwise affect the roofing, has been properly completed.

D. If substrate preparation and other conditions are the responsibility of another installer, notify Architect of unsatisfactory preparation before proceeding.

3.2 PREPARATION

A. General: Clean surfaces thoroughly prior to installation.
1. Prepare surfaces using the methods recommended by the manufacturer for achieving the best result for the substrate under the project conditions.
2. Fill substrate surface voids that are greater than 1/4 inch wide with an acceptable fill material.
3. Roof surface to receive roofing system shall be smooth, clean, free from loose gravel, dirt and debris, dry and structurally sound.
4. Wherever necessary, all surfaces to receive roofing materials shall be power broomed and vacuumed to remove debris and loose matter prior to starting work.
5. Do not apply roofing during inclement weather. Do not apply roofing membrane to damp, frozen, dirty, or dusty surfaces.
6. Fasteners and plates for fastening components mechanically to the substrate shall provide a minimum pull-out capacity of 300 lbs. (136 k) per fastener. Base or ply sheets attached with cap nails require a minimum pullout capacity of 40 lb. per nail.
7. Prime decks where required, in accordance with requirements and recommendations of the primer and deck manufacturer.

3.3 INSTALLATION OF THE BASE SHEET / INSULATION / ROOFING BOARDS

A. Base sheet attachment with Mechanical Fasteners.

1. **Contractor MUST have pull tests performed for each roof section with the approved base sheet fastener and submit to the Architect and manufacture for**

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approval of fastener type and frequency/pattern.

B. Insulation attachment with Mechanical Fasteners

1. Approved insulation board shall be fully attached to the deck with an approved mechanical fastening system. As a minimum, the amount of fasteners shall be in accordance with manufacturer's recommendation for FM I-90 system. Fastener pattern shall be: Mid Roof, 8 fasteners per board, Perimeters, 12 fasteners per board and Corners, 16 fasteners per board.

2. Filler pieces of insulation require at least two fasteners per piece if size of insulation is less than four square feet.

3. Spacing pattern of fasteners shall be as per manufacturer's recommendations to meet the FM requirements. Placement of any fastener from edge of insulation board shall be a minimum of three inches, and a maximum of six (6) inches.

4. Minimum penetration into deck shall be as recommended by the fastener manufacturer. There is a one (1) inch minimum for metal decks where not specified by the manufacturer.

C. Insulation and recovery board attachment with Insulation Adhesive Approved by Factory Mutual (FM).

1. Ensure all surfaces are clean, dry, free of dirt, debris, oils, loose ore embedded gravel, unadhered coatings, deteriorated membrane and other contaminants that may inhibit adhesion.

2. Apply insulation adhesive directly to the substrate using a ribbon pattern with three-quarters (3/4) inch wide wet beads, 4 inches o.c., using either the manual applicator or an automatic applicator, at a rate of one (1) gallon per one hundred (150) square feet per cartridge.

3. Immediately place insulation boards into wet adhesive. Do not slide boards into place. Do not allow the adhesive to skin over before installing insulation boards.

4. Briefly step each board into place to ensure contact with the adhesive. Substrates with irregular surfaces may prevent the insulation board from making positive contact with the adhesive. Relief cuts or temporary weights may be required to ensure proper contact.

5. All boards shall be cut and fitted where the roof deck intersects a vertical surface. The boards shall be cut to fit a minimum of one quarter (1/4) inch away from the vertical surface.

5. Tape joints of recovery board as per manufacturer's requirements and specification below.

D. Install modified bitumen membranes and flashings in accordance with manufacturer's instructions and with the recommendations provided by the National Roofing Contractors Association's Roofing & Waterproofing Manual, the Asphalt Roofing Manufacturers Association, and applicable codes.

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E. General: Avoid installation of modified bitumen membranes at temperatures lower than 40-45 degrees F. When work at such temperatures unavoidable use the following precautions:
   1. Take extra care during cold weather installation and when ambient temperatures are affected by wind or humidity, to ensure adequate bonding is achieved between the surfaces to be joined. Use extra care at material seam welds and where adhesion of the applied product to the appropriately prepared substrate as the substrate can be affected by such temperature constraints as well.
   2. Unrolling of cold materials, under low ambient conditions must be avoided to prevent the likelihood of unnecessary stress cracking. Rolls must be at least 40 degrees F at the time of application. If the membrane roll becomes stiff or difficult to install, it must be replaced with roll from a heated storage area.

F. Commence installation of the roofing system at the lowest point of the roof (or roof area), working up the slope toward the highest point. Lap sheets shingle fashion so as to constantly shed water.

3.4 INSTALLATION OF COLD APPLIED MODIFIED BITUMINOUS MEMBRANE ROOF SYSTEM

A. Recovery Board Joints - Before installing the cold-applied modified bitumen roof system over the recovery board, ALL joints of the recovery board MUST be sealed with a 3-course application of mesh and cold-applied adhesive or specified roof board joint tape.

B. Base Ply: Cut base ply sheets into the required lengths and allow ply to relax before installing. Install base sheet in interply adhesive applied at the rate required by the manufacturer. Shingle base sheets uniformly to achieve one ply throughout over the prepared substrate. Shingle in proper direction to shed water on each large area of roofing.
   1. Lap ply sheet ends 8 inches. Stagger end laps 12 inches minimum.
   2. Solidly bond to the substrate and adjacent ply with specified cold adhesive at the rate of 2 to 2-1/2 gallons per 100 square feet.
   3. Roll must push a puddle of adhesive in front of it with adhesive slightly visible at all side laps. Use care to eliminate air entrapment under the membrane. Apply pressure to all seams to ensure that the laps are solidly bonded to the roof recovery board. Lightly broom in the cap ply to assure complete adhesion.
   4. Install subsequent rolls of modified across the roof as above with a minimum of 4 inch side laps and 8 inch staggered end laps. Lay modified membrane in the same direction as the underlayers but the laps shall not coincide with the laps of the base layers.
   5. Extend base ply to the top edges of cants at wall and projection bases. Seal top of membrane with asphalt mastic until the base flashing ply is installed.
   6. Install base flashing ply to all perimeter and projection details.
   7. Allow the one ply of base sheet to cure at least 30 minutes before installing the modified membrane. However, the modified membrane must be installed the same day as the base plies.

C. Modified Cap Ply: Cut cap ply sheets into the required lengths and allow ply to relax before installing. Install in interplay adhesive applied at the rate required by the manufacturer. Shingle sheets uniformly over the prepared substrate to achieve the

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number of plies specified. Shingle in proper direction to shed water on each large area of roofing.

1. Lap ply sheet ends 8 inches. Stagger end laps 12 inches minimum.
2. Solidly bond to the base layers with specified cold adhesive at the rate of 2 to 2-1/2 gallons per 100 square feet.
3. Roll must push a puddle of adhesive in front of it with adhesive slightly visible at all side laps. Care should be taken to eliminate air entrapment under the membrane. Apply pressure to all seams to ensure that the laps are solidly bonded to the base roof ply. Lightly broom in the cap ply to assure complete adhesion.
4. Install subsequent rolls of modified across the roof as above with a minimum of 4 inch side laps and 8 inch staggered end laps. Lay modified membrane in the same direction as the underlayers but the laps shall not coincide with the laps of the base layers.
5. Allow cold adhesive to set for 5 to 10 minutes before installing the top layer of modified membrane.
6. Extend membrane to the top edge of all cants in full mopping of the cold adhesive as shown on the Drawings. Seal top of membrane with asphalt mastic until the top flashing ply is installed.
7. All excessive adhesive must be removed from the top edge of the selvage lap or underlying end lap prior to heat welding the laps.
8. Where no compound is visible at edge of side lap or end lap, laps should be checked by probing the lap with a trowel after the membrane has cooled.
9. Avoid stepping on side laps before they have been heat welded and rolled. Stepping on the lap can make it stick and tear when the lap is lifted for heat welding.
10. The corners of the underlying membrane at the end laps, and the corner of the selvage edge on the side laps at T-joints should be cut at a 45° angle with the width of the selvage edge (4″).
11. **Heat weld** all seams with a Leister Variant or approved modified bitumen heat welding machine. Torching is not permitted. Hand weld T joints and hard to reach areas. Membrane without selvedge edge are to be butted together and sealed with a heat welded utility roll.
12. Aesthetics will be a punch list item. The roof must match the Owner's standards for appearance. The desired result of heat welding the laps should be a small uniform pencil line bead of compound visible at all the laps.

D. Fibrous Cant Strips: Provide non-combustible wood fiber cant strips at all wall/curb detail treatments where angle changes are greater than 45 degrees. Cant may be set in approved cold adhesives, hot asphalt or mechanically attached with approved plates and fasteners.

E. Wood Blocking, Nailers and Cant Strips: Provide wood blocking, nailers and cant strips as specified in Section 06100.

1. Provide nailers at all roof penetrations for fastening membrane flashings and sheet metal components.
2. Wood nailers should match the height of any insulation, providing a smooth and even transition between flashing and insulation areas.

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3. Nailer lengths should be spaced with a minimum 1/8 inch gap for expansion and contraction between each length or change of direction.
4. Nailers and flashings should be fastened in accordance with Factory Mutual "Loss Prevention Data Sheet 1- 49, Perimeter Flashing" and be designed to be capable of resisting a minimum force of 200 lbs/lineal foot in any direction.

F. Metal Work: Provide metal flashings and counterflashing as specified in Section 07600. Install in accordance with the SMACNA "Architectural Sheet Metal Manual" or the NRCA Roofing Waterproofing manual.

G. Termination Bar: Provide a metal termination bar or approved top edge securement at the terminus of all flashing sheets at walls and curbs. Fasten the bar a minimum of 8 inches (203 mm) o/c to achieve constant compression. Provide suitable, sealant at the top edge if required.

H. Flashing Base Ply: Install flashing sheets by the same application method used for the base ply.

1. Seal curb, wall and parapet flashings with an application of mastic and mesh on a daily basis. Do not permit conditions to exist that will allow moisture to enter behind, around or under the roof or flashing membrane.
2. Prepare all walls, penetrations, expansion joints and where shown on the Drawings to be flashed with required primer at the rate of 100 square feet per gallon. Allow primer to dry tack free.
3. Adhere to the underlying base ply with specified flashing ply adhesive unless otherwise specified. Nail off at a minimum of 8 inches (203 mm) o.c. from the finished roof at all vertical surfaces.
4. Solidly adhere the entire flashing ply to the substrate. Secure the tops of all flashings that are not run up and over curb through termination bar fastened at 6 inches (152 mm) o.c. and sealed at top.
5. Seal all vertical laps of flashing ply with a three-course application of trowel-grade mastic and fiberglass mesh.
6. Coordinate counter flashing, cap flashings, expansion joints and similar work with modified bitumen roofing work as specified.
7. Coordinate roof accessories, miscellaneous sheet metal accessory items, including piping vents and other devices with the roofing system repair work.
8. Secure the top edge of the flashing sheet nailed 4 inches on center and covered with an acceptable counterflashing.

I. Flashing Cap Ply: Install flashing cap sheets by the same application method used for the base ply.

1. Seal curb, wall and parapet flashings with an application of mastic and mesh on a daily basis. Do not permit conditions to exist that will allow moisture to enter behind, around or under the roof or flashing membrane.
2. Prepare all walls, penetrations, expansion joints and where shown on the Drawings to be flashed with required primer at the rate of 100 square feet per gallon. Allow primer to dry tack free.
3. Adhere to the underlying base flashing ply with specified flashing ply adhesive unless otherwise specified. Nail off at a minimum of 8 inches (203 mm) o.c. from

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the finished roof at all vertical surfaces.

4. Coordinate counter flashing, cap flashings, expansion joints and similar work with modified bitumen roofing work as specified.
5. Coordinate roof accessories, miscellaneous sheet metal accessory items with the roofing system work.
6. All stripping shall be installed prior to flashing cap sheet installation.
7. Heat and scrape granules when welding or adhering at cut areas and seams to granular surfaces at all flashings.
8. Secure the top edge of the flashing sheet using a termination bar only when the wall surface above is waterproofed, or screwed 4 inches on center and covered with an acceptable counter flashing.
9. Heat weld all vertical laps of flashing membrane, or seal all vertical laps of flashing membrane with a three-course application of **Silver-Flash aluminized trowel-grade mastic and mesh.**

J. Roof Walkways: Provide walkway pads in areas indicated on the Drawings.

3.5 INSTALLATION ROOF PENETRATION FLASHING

A. Flash all penetrations as specified below and per the project documents. If a specific detail is not shown in the Drawings, or specified below, flash the detail in accordance with the manufacturer's specifications to comply with the specified warranty.

B. Exhaust Fan/Passive Vent/Air Intake:

1. Minimum curb height is twelve (12) inches off the finished roof surface. Prime vertical curb surface at a rate of one hundred (100) square feet per gallon and allow to dry.

2. Set cant in bitumen. Run all plies, including modified membrane, over cant and up to the top edge of the cant. Seal with asphalt mastic.

3. Install base flashing ply the specified cold applied flashing adhesive covering curb with six (6) inches on to field of the roof.

4. Install a second ply of modified flashing ply installed the specified cold applied flashing adhesive over the base flashing ply, nine (9) inches on to field of the roof. Attach top of membrane to top of wood curb and nail at eight (8) inches o.c. Apply a three-course application of Silver-Flash mastic and mesh at all vertical seams.

5. Install metal exhaust fan over the wood nailers and flashing to act as counterflashing. Fasten per manufacturer's recommendation. If the existing fan's cover cannot fit over the installed flashing system, stop the flashing system at the top of the curb and fasten with cap nails at eight (8) inches on center. Install an 0.040" aluminum slip flashing under the fan cover and fasten to the curb at eight (8) inches on center with neoprene gasketed screws. The slip flashing shall cover the top of the flashing system three (3) inches minimum. Install new corner pieces on the fan cover.

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C. Plumbing/Soil Stack:

1. Minimum stack height is twelve (12) inches.

2. Run roof system over the entire surface of the roof. Seal the base of the stack with mastic

3. Prime flange of new lead sleeve. Install properly sized lead sleeve set in ¼ inch bed of roof cement.

4. Install base flashing ply in bitumen or the specified cold-applied flashing adhesive.

5. Install modified membrane in bitumen or the specified cold-applied flashing adhesive.

6. Seal the intersection of the membrane and stack with the specified elastomeric asphaltic sealant.

7. Turn sleeve a minimum of one (1) inch down inside of stack. For pipes 2 inches or less in diameter, lead top caps will be required.

D. Wood Sleeper Support:

1. Approved wood of equal thickness to insulation and recovery board will be placed into position where weight of object is over 12 pounds per square foot. Wood will be two (2) inches wider than base of object being supported.

2. Insulation will be installed up against wood sleeper.

3. Entire roof system will be installed over wood sleeper.

4. A protection pad will be installed in approved adhesive under the wood sleeper support.

5. Treated wood supports for the particular equipment would then be placed on the modified membrane roofing ply. Supports will be a minimum of four (4) inches wide.

E. Pre-manufactured Curb for Equipment Support (Secured to Roof Deck):

1. Secure curb to roof deck. Minimum curb height above top of roof is eight (8) inches. Install wood blocking on bottom, or top, of curb to achieve this height. Prime vertical at a rate of one hundred (100) square feet per gallon and allow to dry.

2. Set cant in bitumen. Run base roofing ply over cant and to the top edge of the cant. Seal with asphalt mastic.

3. Install base flashing ply in the specified cold applied flashing adhesive covering pre-manufactured curb with six (6) inches on to field of the roof.

4. Install modified membrane over cant and to the top edge of the cant. Seal with asphalt mastic.

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5. Install modified flashing ply in the specified cold applied flashing adhesive over the base flashing ply, nine (9) inches on to field of the roof. Install flashing plies on top of the curb, and nail at eight (8) inches o.c. with cap nails. Apply a three-course application of Silver-Flash mastic and mesh at all vertical seams.

6. Install pre-manufactured cover. Fasten sides at twenty-four (24) inches o.c. with fasteners and neoprene washers. Furnish all joint cover laps with butyl tape/sealant between metal covers.

7. Set equipment on neoprene pad and fasten as required by equipment manufacturer.

F. Curb Detail/Air Handling Station:

1. Minimum curb height is eight (8) inches. Prime vertical at a rate of one hundred (100) square feet per gallon and allow to dry.

2. Set cant in bitumen. Run base roofing ply over cant and up to the tope edge of the cant. Seal with asphalt mastic.

3. Install base flashing ply in specified cold applied flashing adhesive covering curb with six (6) inches on to field of the roof.

4. Install modified membrane over cant and up to the top edge of the cant. Seal with asphalt mastic.

5. Install modified flashing ply in the specified cold applied flashing adhesive over the base flashing ply, nine (9) inches on to field of the roof. Attach top of membrane to top of wood curb and nail at eight (8) inches o.c. Apply a three-course application of Silver-Flash mastic and mesh at all vertical seams.

6. Install pre-manufactured counterflashing/slip flashing with fasteners and neoprene washers or per manufacturer's recommendations.

7. Set equipment on neoprene pad and fasten as required by equipment manufacturer.

G. Reglet Mounted Counterflashing:

1. Remove existing reglet mounted counterflashing system to allow the installation of the new roof flashing and counterflashing system.

2. Minimum flashing height is eight (8) inches. Maximum flashing height is twenty-four (24) inches. Prime vertical wall at a rate of one hundred (100) square feet per gallon and allow to dry.

3. Set cant in bitumen. Run field plies over the cant and up the wall a minimum of three (3) inches.

4. Install base flashing ply covering wall set in the specified adhesive with six (6) inches on to field of the roof.

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5. Install modified membrane roofing ply over cant and up the wall a minimum of two (2) inches.

6. Install modified flashing ply in the specified adhesive over the base flashing ply, nine (9) inches on to the field of the roof. Apply a three-course application of Silver-Flash mastic and mesh at all vertical seams.

7. Install the specified termination bar even with the top of the flashing, and secure the termination bar through flashing and into wall every six (6) inches on center. Seal the top of the termination bar/flashing with a 3-course application of Silver-Flash and Garmesh or elastomeric asphaltic sealant.

H. Liquid Flashing:

1. Mask target area on roof membrane with tape in accordance with manufacturer's requirements.

2. Clean all non-porous areas with isopropyl alcohol.

3. Apply 32 wet mil base coat of liquid flashing over masked area.

4. Embed Grip Polyester polyester reinforcement fabric into the base coat of the liquid flashing.

5. Apply 48-64 wet mil top coat of the liquid flashing material over the fabric extending 2 inches (51 mm) past the scrim in all directions.

6. Apply minerals immediately or allow the liquid flashing material to cure 15-30 days and then install reflective coating.

3.6 WALKWAY / PROTECTION PADS INSTALLATION

A. Cut the walkway / protection pad into specified lengths and allow to relax until flat. Adhere the sheet using the specified adhesive. Apply the specified adhesive / sealant in a 3/8 inch wide beads in a 6" to 8" spiral to the back of the pad in accordance with the pattern as supplied by the walkway / protection pad supplier. Walk-in each pad after application to ensure proper adhesion. Use a minimum spacing of 2 inches between sheets to allow for proper drainage.

3.7 FIELD QUALITY CONTROL AND INSPECTIONS

A. Inspection: Provide manufacturer's project inspections not less than three (3) days per week during 'work in-progress'. Manufacturer to provide regular reports with digital photos depicting work progress and quality.

1. Warranty shall be issued upon manufacturer's acceptance of the installation.
2. Field observations shall be performed by a Technical Representative employed full-time by the manufacturer and whose primary job description is to assist, inspect and approve membrane installations for the manufacturer.
3. Provide observation reports from the Technical Representative indicating procedures followed, weather conditions and any discrepancies found during

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inspection.

4. Provide a final report from the Technical Representative, certifying that the roofing system repairs have been satisfactorily installed according to the project Specifications, approved details and good general roofing practice.

B. Site Condition: Leave all areas around job site free of debris, roofing materials, equipment and related items after completion of job.

C. Notification of Completion: Notify the manufacturer by means of manufacturer's printed Notification of Completion form of job completion in order to schedule a final inspection date.

D. Final Inspection

1. Post-Installation Meeting: Hold a meeting at the completion of the project, attended by all parties that were present at the pre-job conference. A punch list of items required for completion shall be compiled by the Subcontractor and the manufacturer's representative. Complete, sign, and mail the punch list form to the manufacturer's headquarters.

END OF SECTION 07535

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SECTION 07600 - FLASHING, SHEET METAL AND ROOF ACCESSORIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Section Includes:

1. Pre-manufactured metal flashing and counterflashing.
2. Miscellaneous sheet metal accessories.
3. Pipe curb assembly.
4. Pipe-Penetration Flashing.

B. Related Sections:

1. Section 06100 - Carpentry for wood nailers and blocking.
2. Division 7 - Roofing Materials for roofing system repairs.
3. Section 07200 - Building Insulation.
4. Section 07800 - Roof Specialties and Accessories.
5. Section 07900 - Joint Sealer Assemblies.
6. Plumbing Work - Refer to Plumbing Drawings for related Specifications.
7. Mechanical Work - Refer to Mechanical Drawings for related Specifications.
8. Electrical Work - Refer to Electrical Drawings for related Specifications.

1.3 PERFORMANCE REQUIREMENTS

A. Structural Requirements: Design and install Work of this section, including attachment to the structure, to safely withstand dead, live and wind loads prescribed by the International Building Code.

B. Environmental Requirements: Provide for expansion and contraction of system components due to air temperature and solar heat gain. Provide systems which will accommodate movement due to temperature change without buckling, failure of seals, undue stress on structural elements, reduction of performance, or other detrimental effects.

1. Anticipated air temperature range: Minus 10°F to +105°F.

1.4 REFERENCES

A. Architectural Sheet Metal Manual; Sheet Metal and Air Conditioning Contractors National Association, Inc. (SMACNA).

B. ASTM B 32; Standard Specification for Solder Metal.

C. ASTM B 209; Standard Specification for Aluminum and Aluminum-Alloy Sheet and Plate.

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D. Aluminum Association, Design System for Aluminum Finishes (AA).

E. American Architectural Manufacturers Association (AMMA), standards as referenced herein.

F. ANSI/SPRI ES-1 Wind Design Standard for Edge Systems Used with Low Slope Roof Systems.

1.5 SUBMITTALS

A. Product Data: Manufacturer's Specifications, standard details, and installation recommendations.

B. Shop Drawings: Submit manufacturer's shop drawings showing material types, thickness, sizes, shapes, connections, layout, joining, profiles and anchorage of fabricated Work and relation to adjacent Work. edited product data or shop drawings, or a combination thereof, as required to accurately describe products to be provided. Show elevations, field measurements, reinforcement, expansion provisions, installation accessories, and detail sections of composite members. Draw layouts at scale of 1/4 inch per foot, details at scale of 3 inches per foot.

1. Provide shop drawings for, but not limited to, the following:
   a. Base flashing and counterflashing.
   b. All other sheet metal Work requiring fabrication.
   c. Details of all joints for above.
   d. Reglets and wedges.

2. Sheet metal shop drawings shall be prepared to reflect SMACNA detail standards and in accordance with ANSI/SPRI ES-1 Test Protocols.

C. Samples for Color Selection of Coated Finishes: Coating manufacturer's color selection data.

D. Samples for Color Verification of Coated Finishes: For each type and color of coated finish submit 12-inch-long sections of extrusions and formed sections and 6-inch-square sheets.

E. Pre-engineered fabricated and pre-finished sheet metal manufacturer's product literature, finish Specification and sample finish warranty.

F. Sheet metal fabricators and installers qualifications.

1.6 QUALITY ASSURANCE

A. Listing - Roof Perimeter Flashing System: Provide system listed in Factory Mutual System's "Approval Guide," classified for Zone 2 (I-90 windstorm resistance).

B. Fabricator / Installer: A firm having a recommended minimum of 5 years' of successful experience in fabrication and installation of sheet metal Work of type and scope equivalent, to Work of this section.

C. Pre-engineered and Contractor: Fabricate and install sheet metal Work in accordance with indicated reference standards.

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1.7 DELIVERY, STORAGE, AND HANDLING

A. Store materials off ground, under cover. Protect from damage and deterioration.

B. Handle materials to prevent damage to surfaces, edges and ends of sheet metal items. Damaged material shall be rejected and removed from the site.

1.8 WARRANTY

A. Warrant Fluoropolymer coating to remain free, under normal atmospheric conditions, from peeling, checking, or cracking, and chalking in excess of numerical rating of 8 when measured in accordance with ASTM D659-86, or fading in excess of 5 N.B.S. units during warranty period.

1. The Warranty period shall be **twenty (20) years** which starts the approved date of Substantial Completion.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Manufacturers: Subject to compliance with requirements, provide pre-engineered manufactured products approved by the roofing system manufacturer(s) which may include but not limited to the following:

1. Aluminum Reglets:
   a. Fry Reglet Corporation,
   b. Hickman: W.P. Hickman Co.,
   c. Keystone Flashing Company,
   d. CertainTeed, Saint-Gobain,
   e. Or approved equal.

2. Stainless-Steel Reglets:
   a. Cheney Flashing Company,
   b. Fry Reglet Corporation,
   c. Keystone Flashing Company,
   d. Or approved equal.

2.2 METALS

A. Type “C”; Aluminum: Alloy and temper recommended by aluminum producer and finisher for type of use and finish indicated and with not less than the strength and durability of alloy and temper designated below:

1. Type “C-4"; Factory-Painted Aluminum Sheet: ASTM B 209, 3003-H14, with a minimum thickness of 0.040 inch, unless otherwise indicated.

B. Type “D”; Stainless-Steel Sheet: ASTM A 167, Type 304, soft annealed, with No. 2D finish, except where harder temper is required for forming or performance; minimum 0.0187 inch thick, unless otherwise indicated.

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2.3 REGLETS

A. General: Provide reglets of type, material, and profile indicated, compatible with flashing. Form to securely interlock with counterflashing.

1. Type - 1: Surface-Mounted Type: Provide “SM” springlok surface Mounted Reglet by Fry Reglet Corp.; or approved equal.
   a. Provide with slotted holes for fastening to substrate, with neoprene or other suitable weatherproofing washers, and with channel for sealant at top edge.
   b. Aluminum: 3003-H14 alloy, meeting ASTM B209-95, 0.040" thick aluminum, color as selected by Architect from manufacturer’s standard colors.
   c. Stainless Steel: Type 304 alloy, meeting ASTM A666-96a, 0.020" thick, 2B finish.
   d. Provide silicone sealant and manufacturer’s factory supplied stainless steel fasteners and neoprene backed stainless steel washers.
   e. Provide 3" minimum lap joints.

2. Type - 5: Roof Top Equipment Curb: Provide “MA" springlok Reglet by Fry Reglet Corp.; or approved equal.
   a. 0.040" thick aluminum, with 1-1/2" top flange, color as selected by Architect.
   f. Stainless Steel: Type 304 alloy, meeting ASTM A666-96a, 0.020" thick, 2B finish.
   c. Provide 3" minimum lap joints.

3. Counterflashing Wind-Restraint Clips: Provide clips to be installed before counterflashing to prevent wind uplift of the counterflashing's lower edge.

2.4 COUNTERFLASHING

A. Provide springlok counterflashing by Fry Reglet Corp.; Metal-Era; Xtreme Trim; or approved equal.

1. 0.040" thick aluminum, as indicated on the Drawings.

2. 0.020" thick, type 304 stainless steel, as indicated on the Drawings.

3. Provide inside and outside corners including special angle where required.

2.5 MISCELLANEOUS MATERIALS AND ACCESSORIES

A. GENERAL REQUIREMENTS:

1. All miscellaneous materials, accessories or other items essential to the completion of sheet metal installation, though not specifically shown or specified, must be provided.

2. All such items, unless otherwise indicated on Drawings or specified herein, shall be applied using sheet metal gauges which conform to recognized industry standards of sheet metal practices and without additional cost to the Owner. For sheet metal and pre-manufactured units, provide type of solder, ASTM B23, and corrosion-resistant metal as recommended by the producer of the metal sheets for fabrication and installation.

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3. Provide sheet metal clips, straps, anchoring devices and similar accessory units as required for installation of Work, matching or compatible with material being installed, non-corrosive, size and gauge required for performance.

B. Fasteners: Same metal as flashing/sheet metal, as indicated or other non-corrosive metal as recommended by sheet manufacturer. Match finish of exposed heads with material being fastened.

C. Bituminous Coating: FS TT-C-494 or SSPC - Paint 12, solvent type bituminous mastic, nominally free of sulfur, compounded for 15-mil dry film thickness per coat.

D. Mastic Sealant: Polyisobutylene; non-hardening, non-skinning, non-drying, non-migrating sealant.

E. Elastomeric Sealant: Generic type recommended by manufacturer of metal and fabricator of components being sealed; comply with FS TT-S-00227, TT-S-00230, or TT-S-001543.

F. Epoxy Seam Sealer: 2-part non-corrosive metal seam cementing compound, recommended by metal manufacturer for exterior/interior non-moving joints including riveted joints.

G. Paper Slip Sheet: 15-lb. rosin-sized building paper.

H. Polyethylene Underlayment: 6-mil carbonated polyethylene film; FS L-P-512.

I. Pipe Curb Assembly:

1. Manufacturer: Products of the following manufacturers, provided they comply with requirements of the Bid Documents, will be among those considered acceptable:
   a. Roof Penetration Housings, LLC,
   b. Pipe Portal Systems as manufactured by Portals Plus, Inc.,
   c. The Pate Company,
   d. ThyCurb,
   e. Or approved equal.

2.6 FABRICATION, GENERAL

A. Sheet Metal Fabrication Standard: Fabricate sheet metal flashing and trim to comply with recommendations of SMACNA's "Architectural Sheet Metal Manual" that apply to the design, dimensions, metal, and other characteristics of the item indicated.

B. Comply with details shown to fabricate sheet metal flashing and trim that fit substrates and result in waterproof and weather-resistant performance once installed. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.

C. Form exposed sheet metal Work that is without excessive oil canning, buckling, and tool marks and that is true to line and levels indicated, with exposed edges folded back to form hems.

1. Seams (Metal other than Aluminum): Fabricate nonmoving seams in sheet metal with flat-lock seams. Tin edges to be seamed, form seams, and solder.

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2. Seams (Aluminum): Fabricate nonmoving seams in aluminum with flat-lock seams. Form seams and seal with epoxy seam sealer. Rivet joints for additional strength.

3. Expansion Provisions: Space movement joints at maximum of 10 feet with no joints allowed within 24 inches of corner or intersection. Where lapped or bayonet-type expansion provisions in Work cannot be used or would not be sufficiently weatherproof and waterproof, form expansion joints of intermeshing hooked flanges, not less than 1 inch deep, filled with mastic sealant (concealed within joints).

4. Sealed Joints: Form nonexpansion, but movable, joints in metal to accommodate elastomeric sealant to comply with SMACNA standards.

5. Separate metal from noncompatible metal or corrosive substrates by coating concealed surfaces at locations of contact with asphalt mastic or other permanent separation as recommended by manufacturer.

6. Conceal fasteners and expansion provisions where possible. Exposed fasteners are not allowed on faces of sheet metal exposed to public view.

7. Fabricate cleats and attachment devices from same material as sheet metal component being anchored or from compatible, noncorrosive metal recommended by sheet metal manufacturer.
   a. Size: As recommended by SMACNA manual or sheet metal manufacturer for application but never less than thickness of metal being secured.

D. SHEET METAL FABRICATIONS

1. General: Fabricate sheet metal items in thickness or weight needed to comply with performance requirements.

2.7 ALUMINUM FINISHES

A. General: Comply with Aluminum Association's (AA) "Designation System for Aluminum Finishes" for finish designations and application recommendations.

B. High-Performance Organic Coating Finish: AA-C12C42R1x (Chemical Finish, cleaned with inhibited chemicals; Chemical Finish: acid chromate-fluoride-phosphate conversion coating; Organic Coating: as specified below). Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturer's instructions.

1. Fluoropolymer 2-Coat Coating System: Manufacturer's standard 2-coat, thermocured system composed of specially formulated inhibitive primer and fluoropolymer color topcoat containing not less than 70 percent polyvinylidene fluoride resin by weight; complying with AAMA 605.2.
   a. Color(s): As selected by the Architect from manufacturer’s available full range of colors including custom colors.

PART 3 - EXECUTION

3.1 EXAMINATION

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A. Examine substrates and conditions under which sheet metal flashing and trim are to be installed and verify that Work may properly commence.

B. Verify that substrates and openings are rigidly set, at proper lines and elevation, properly sized, and ready to receive units.

C. Do not proceed with installation until conditions detrimental to proper installation have been corrected.

D. Coordinate installation with roofing Work and other adjacent elements of building envelope to ensure watertight construction.

3.2 PREPARATION

A. Verify shapes and dimensions of surfaces to be covered before fabricating sheet metal.

B. Isolate all dissimilar metals by means of a heavy bituminous coating, approved paint coating, adhered polyethylene sheet, or other means recommended by SMACNA.

3.3 INSTALLATION

A. General: Except as otherwise indicated, comply with manufacturer's installation instructions and recommendations, and with SMACNA "Architectural Sheet Metal Manual." Anchor units of Work securely in place by methods indicated, providing for thermal expansion in metal units. Set units true to line and level indicated. Install Work with laps, joints, and seams permanently weatherproof and watertight.

B. Sealed Joints: Form minimum 1-inch hooked joints and embed flange into sealant or adhesive. Form metal to completely conceal sealant or adhesive.

1. Use joint adhesive for nonmoving joints specified not to be soldered.

2. Moving Joints: When ambient temperature is moderate (40-70°F) at time of installation, set joined members for 50% movement either way. Adjust setting position of joined members proportionally for temperatures above 70°F. Do not install sealant at temperatures below 40°F. Refer to section on sealants elsewhere in Division 7 for handling and installation requirements for joint sealers.

C. Workmanship: Install sheet metal Work with lines, arises, and angles sharp and true. Exposed surfaces shall be free from visible waive, warp, buckle, and tool marks. Exposed edges shall be folded back neatly to form a ½-inch hem on the concealed side. Sheet metal exposed to the weather shall be watertight with provisions for expansion and contraction.

D. Nailing: Nailing of sheet metal shall be confined generally to sheet metal having a maximum width of 18 inches. Nailing of flashings shall be confined to one edge only. Nails shall be evenly spaced not over 3 inches on centers and approximately ½-inch from edge unless otherwise specified or indicated. Face nailing will not be permitted. Where sheet metal is applied to other than wood surfaces, detailed shop drawings shall include locations for sleepers and nailing strips required to properly secure the Work.

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E. Cleats: Provide cleats for sheet metal 18 inches and over in width. Space cleats evenly not over 12 inches on centers unless otherwise specified or indicated. Unless otherwise specified, cleats shall be not less than 2 inches wide by 3 inches long, and of the same material and thickness as the sheet metal being installed. One end of the cleat shall be secured with two nails and the cleat folded back over the nailheads. The other end shall be folded back over the nailheads. The other end shall be locked into the seam. Cleats for soldered seams shall be pretinned.

F. Bolts, Rivets and Screws: Install bolts, rivets, and screws where indicated or required. Provide compatible washers where required to protect surface of sheet metal and to provide a watertight connection.

G. Seams; General: Comply with SMACNA, Figures 3-2 & 3-3, Tables 2-1 & 3-1R, and other applicable designs to specific installation.

1. Seams: straight and uniform in width and height with no solder showing on the face.

2. Flat-lock Seams for All Non-Moving Seams; Finish not less than 3/4-inch wide.

3. Loose-lock Expansion Seams: Not less than 3 inches wide, and shall provide minimum one-inch movement within the joint. Joint shall be completely filled with the specified sealant, applied at no less than 1/8 inch thick bed. Sealants are specified in Section 07900 - Joint Sealer Assemblies and shall be completely concealed.

4. Flat Seams: Make seams in the direction of the flow.

H. Counterflashing: Except where indicated or specified otherwise, insert counterflashing receiver in horizontal saw cut joints locations as indicated. Snap counterflashing in receiver and extend down vertical surfaces over upturned vertical leg or base flashings not less than 4 inches. Exposed edges of counterflashing shall be folded ½-inch. End laps in counterflashings shall be overlapped 6", and shall be made weathertight with sealant.

1. Lengths of metal counterflashings shall not exceed 10 feet. The flashings shall be formed to the required shapes before installation. Corners shall be factory-formed with joints not less than 24 inches from the angle.

2. Flashing receivers shall be secured in the horizontal joint with lead wedges spaced not to exceed 12 inches apart; on short runs, wedges shall be placed closer together.

3. Counterflashing receiver joints shall be filled with caulking compound. Caulking is covered in Section 07900 - Joint Sealer Assemblies.

3.4 PROTECTION FROM CONTACT OF DISSIMILAR MATERIAL

A. Copper or Copper-Bearing Alloys: Surfaces in contact with dissimilar metal shall be painted with heavy bodied bituminous paint, or shall be separated by means of moisture-proof building felts.

B. Aluminum: Surfaces shall not contact other metals except stainless steel, zinc, or zinc coating. Where aluminum contacts another metal, the dissimilar metal shall be painted with a primer followed by two coats of aluminum paint.

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C. All Metal: Surfaces in contact with mortar, concrete, or other masonry materials shall be painted with alkali-resistant coatings such as heavy-bodied bituminous paint.

D. Wood or Other Absorptive Materials: Surfaces that may become repeatedly wet and in contact with metal shall be painted with two coats of aluminum paint or a coat of heavy-bodied bituminous paint.

E. Dissimilar Metal: Paint with a non-lead pigmented paint if drainage from it passes over aluminum.

F. All fasteners shall be compatible with the metal with which it is connected.

3.5 PROTECTION OF ROOFING

A. Protection of Applied Insulation: Completely cover each day's installation with finished roofing specified. Protect open spaces between insulation and spaces at curbs until permanent roofing and flashing is applied. Storing, walking, wheeling, or trucking will not be permitted directly on insulation or on roofed surfaces. Provide smooth, clean board or plank walkways, runways, and platforms near supports, as necessary to distribute weight to conform to indicated live load limits of roof construction.

B. Upon completion of roofing repair Work (including associated Work) Installer shall advise Contractor of recommended procedures for surveillance and protection of roofing during remainder of construction period. At end of construction period, or at a time when remaining construction Work will in no way affect or endanger roofing (at Contractor's option), Installer shall make a final inspection of roofing repairs and prepare a written report to Contractor with copy to Owner) describing nature and extend of deterioration or damage found in the Work.

C. Installer shall repair or replace (as required) deteriorated or defective Work found at time of final inspection. Installer shall be engaged by Contractor to repair damages to roofing which occurred subsequent to roofing installation and prior to final inspection.

D. Repair or replace the roofing and associated Work to a condition free of damage and deterioration at time of substantial completion.

3.6 CLEAN-UP

A. Clean exposed metal surfaces, removing substances which might cause corrosion of metal or deterioration of finishes.

B. Upon completion of the specified Work, remove all waste, debris, unused material and equipment from the site. Remove all misplaced material from nearby surfaces. Leave the job in a clean condition, acceptable to Owner.

C. Advise Subcontractors of required procedures for surveillance and protection of flashings and sheet metal Work during construction to ensure that Work will be without damage or deterioration, other than natural weathering, at time of substantial completion.

END OF SECTION 07600

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SECTION 07800 - ROOF SPECIALTIES AND ACCESSORIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 DESCRIPTION OF WORK

A. Extent and locations of roof accessories is indicated on the drawings and by provisions of this section.

B. Type of units specified in this section includes the following:

1. Prefabricated curb and support units.
2. Pipe and conduit supports.
3. Ductwork supports.

C. Related Sections:

1. Division 7 - Refer to roofing system sections, for roofing accessories to be built into roofing system (not work of this section).
2. Section 05400 - Miscellaneous Structural Steel.
3. Section 05500 - Metal Fabrications.
4. Section 06100 - Carpentry.
5. Section 07600 - Flashing, Sheet Metal and Roof Accessories.
6. Section 07900 - Joint Sealer Assemblies.
7. Division 15 - Mechanical related work.

1.3 SUBMITTALS

A. Product Data; Roof Accessories: Submit manufacturer's technical product data, rough-in diagrams, details, installation instructions and general product recommendations.

B. Samples; Roof Accessories: Submit 2 samples, min. 8" square, of each exposed metal and plastic sheet materials, and 2 samples, min. 24" long, of formed or extruded exposed metal member; color and finish as specified.

C. Coordination Drawings: Submit coordination drawings for items interfacing with or supporting mechanical or electrical equipment, ductwork, piping, or conduit. Indicate dimensions and locations of items provided under this section, together with relationships and methods of attachment to adjacent construction and to mechanical/electrical items.

1.4 QUALITY ASSURANCE

A. Standards: Comply with SMACNA "Architectural Sheet Metal Manual" details for fabrication of units, including flanges and cap-flashing to coordinate with type of roofing indicated. Comply with "NRCA Roofing and Waterproofing Manual" details for installation of units.

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B. Test Reports: Certified test reports showing compliance with specified performance characteristics and physical properties.

PART 2 - PRODUCTS

2.1 GENERAL PRODUCT REQUIREMENTS

A. Provide manufacturers' standard units, modified as necessary to comply with requirements. Shop fabricate each unit to greatest extent possible.

2.2 MATERIALS, GENERAL

A. Zinc-Coated Steel: Commercial quality with 0.20 percent copper, ASTM A 525, G90 hot-dip galvanized, mill phosphatized.

B. Stainless Steel: AISI TYPE 302/304, ASTM A 167, 2D annealed finish except as otherwise indicated, temper as required for forming and performance.

C. Aluminum Sheet: ASTM B 209, alloy 3003, temper as required for forming and performance; anodized finish, except mill finish prepared for painting where indicated for field painting.

D. Extruded Aluminum: Manufacturers standard extrusions of sizes and general profiles indicated, alloy 6063 T6, architectural grade aluminum; 0.078 inch minimum thickness for primary framing and curb member legs and 0.062 inch for dome retaining angle.

E. Insulation: Manufacturer's standard rigid polyisocyanurate or semi-rigid board of glass fiber of thicknesses indicated.

F. Wood Nailers: Softwood lumber, fire retardant treated wood, not less than 1-1/2" thick. Refer to Specification Section 06100.

G. Fasteners: Same metal as metals being fastened, or nonmagnetic stainless steel or other noncorrosive metal as recommended by manufacturer. Match finish of exposed fasteners with finish of material being fastened.

1. Where removal of exterior exposed fasteners affords access to building, provide non-removable fastener heads.

H. Gaskets: Tubular or fingered design of neoprene or polyvinyl chloride, or block design of sponge neoprene.

I. Bituminous Coating: FS TT-C-494A or SSPC-Paint 12, solvent type bituminous mastic, nominally free of sulfur, compounded for 15-mil dry film thickness per coating.

J. Mastic Sealant: Polyisobutylene; non-hardening, non-skinning, non-drying, non-migrating sealant.

K. Elastomeric Sealant: Generic type recommended by unit manufacturer, which is compatible with joint surfaces; comply with FS TT-S-00227E, TT-S-00230C, or TT-S-001543A.

L. Roofing Cement: ASTM D 2822, asphaltic.

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2.3 PREFABRICATED CURBS / EQUIPMENT SUPPORTS

A. Comply with loading and strength requirements as indicated where units support other work. Coordinate dimensions with rough-in sheets or shop drawings of equipment to be supported. Fabricate of structural quality sheet steel (ASTM A 570, Grade as required) which has been prepared for painting and factory-primed and painted with 2-mil thickness of baked-on synthetic enamel, after fabrication.

1. Fabricate with welded or sealed mechanical corner joints. Provide complete with cant strips and base profile coordinated with roof insulation thickness. Provide preservative-treated wood nailers at tops of curbs, coordinate with thickness of insulation and roof flashing as indicated, tapered as necessary to compensate for roof deck slopes of 1/4" per ft. and less.

2. Except as otherwise indicated or required for strength, fabricate units of minimum 14-gauge (0.0747") metal, and to minimum height of 12".

3. Sloping Roofs: Where slope of roof deck exceeds 1/4" per ft., fabricate curb/support units with height tapered to match slope, to result in level installation of tops of units.

B. Manufacturers: Subject to compliance with requirements, manufacturers offering prefabricated thermally broken curbs/equipment supports which may be incorporated in the work include the following:

1. Custom Curb, Inc.;
2. The Pate Company;
3. ThyCurb Div./ThyBar Corp.;
4. Or approved equal.

2.4 PIPE AND CONDUIT SUPPORTS

A. Comply with loading and strength requirements as indicated where units support other work.

B. Basis of Design: Dura-Block #DBE10-8 pipe supports as manufactured by Eaton; or approved equal.

1. Support base with rod riser and channel, 8" H x 9.35" L x 6" W, Cast iron, Electro-plated.

2. Made from 100% recycled rubber with reflective strip on both sides allow for easy product visibility.

3. Channel is through bolted on all sizes for added strength.

4. 1" gap between blocks allows water to flow freely around longer assemblies.

5. No roof penetration required.

6. Resistant to freeze/thaw.

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7. Will not float or blow away.

8. UV resistant.

9. Suitable for any type roofing material or other flat surface.

10. For sloped roofs see adjustable hinge fitting (B634)

2.5 DUCTWORK SUPPORTS

A. Comply with loading and strength requirements as indicated where units support other work.

B. Basis of Design: Duct “H” Type Adjustable Supports, Model “8-DS-ST", ductwork supports as manufactured by Miro Industries, Inc.; or approved equal.

1. Product Description: Frame constructed of strut and manufacturer’s patented bases used to support duct or various utilities on low slope roofs. Unique design allows sturdy support without penetrating to roofing membrane. Supports rest on a 1-5/8" x 1-5/8" channel strut and are adjustable in height.

2.6 ALUMINUM FINISH(ES)

A. General: Comply with Aluminum Association's (AA) "Designation System for Aluminum Finishes" for finish designations and application recommendations.

B. High-Performance Organic Coating Finish: AA-C12C42R1x (Chemical Finish: cleaned with inhibited chemicals; Chemical Finish: acid chromate-fluoride-phosphate conversion coating; Organic Coating: as specified below). Prepare, pretreat, and apply coating to exposed metal surfaces to comply with coating and resin manufacturer's instructions.

1. Fluoropolymer 2-Coat Coating System: Manufacturer's standard 2-coat, thermocured system composed of specially formulated inhibitive primer and fluoropolymer color topcoat containing not less than 70 percent polyvinylidene fluoride resin by weight; complying with AAMA 605.2.
   a. Color and Gloss: As selected by Architect from manufacturer's full range of choices for color and gloss.

PART 3 - EXECUTION

3.1 INSTALLATION

A. General: Comply with manufacturer's instructions and recommendations. Coordinate with installation of roof deck and other substrates to receive accessory units, and vapor barriers, roof insulation, roofing and flashing; as required to ensure that each element of the work performs properly, and that combined elements are waterproof and weathertight. Anchor units securely to supporting structural substrates, adequate to withstand lateral and thermal stresses as well as inward and outward loading pressures.

B. Except as otherwise indicated install roof accessory items in accordance with construction details of "NRCA Roofing and waterproofing Manual".

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C. Isolation: Where metal surfaces of units are to be installed in contact with non-compatible metal or corrosive substrates, including wood, apply bituminous coating on concealed metal surfaces, or provide other permanent separation.

D. Flange Seals: Except as otherwise indicated, set flanges of accessory units in a thick bed of roofing cement, to form a seal.

E. Cap Flashing: Where cap flashing is required as component of accessory, install to provide adequate waterproof overlap with roofing or roof flashing (as counter-flashing). Seal with thick bead of mastic sealant, except where overlap is indicated to be left open for ventilation.

3.2 CLEANING AND PROTECTION

A. Clean exposed metal surfaces in accordance with manufacturer's instructions. Touch up damaged metal coatings.

END OF SECTION 07800

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SECTION 07840 - THROUGH-PENETRATION FIRESTOP SYSTEMS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes through-penetration firestop systems for penetrations through the following fire-resistance-rated assemblies, including both empty openings and openings containing penetrating items:

1. Floors.
2. Walls and partitions.
3. Smoke barriers.
4. Construction enclosing compartmentalized areas.

B. Related Sections include the following:

1. Section 07200 - Building Insulation, for safing insulation and accessories.

2. Division 7 Section "Sprayed Fire-Resistive Materials."

3. Division 15 Sections specifying duct and piping penetrations and firestop systems to be performed by the HVAC Contractor.

4. Division 16 Sections specifying cable and conduit penetrations and firestop systems to be performed by the Electrical Subcontractor.

1.3 PERFORMANCE REQUIREMENTS

A. General: For the following constructions, provide through-penetration firestop systems that are produced and installed to resist spread of fire according to requirements indicated, resist passage of smoke and other gases, and maintain original fire-resistance rating of assembly penetrated.

1. Fire-resistance-rated load-bearing walls, including partitions, with fire-protection-rated openings.

2. Fire-resistance-rated non-load-bearing walls, including partitions, with fire-protection-rated openings.

3. Fire-resistance-rated floor assemblies.

B. F-Rated Systems: Provide through-penetration firestop systems with F-ratings indicated, as determined per ASTM E 814, but not less than that equaling or exceeding fire-resistance rating of constructions penetrated.

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C. T-Rated Systems: For the following conditions, provide through-penetration firestop systems with T-ratings indicated, as well as F-ratings, as determined per ASTM E 814, where systems protect penetrating items exposed to potential contact with adjacent materials in occupiable floor areas:

1. Penetrations located outside wall cavities.

2. Penetrations located outside fire-resistive shaft enclosures.

3. Penetrations located in construction containing fire-protection-rated openings.

4. Penetrating items larger than 4-inch-diameter nominal pipe or 16 sq. in. in overall cross-sectional area.

D. For through-penetration firestop systems exposed to view, traffic, moisture, and physical damage, provide products that after curing do not deteriorate when exposed to these conditions both during and after construction.

1. For floor penetrations with annular spaces exceeding 4 inches in width and exposed to possible loading and traffic, provide firestop systems capable of supporting floor loads involved either by installing floor plates or by other means.

2. For penetrations involving insulated piping, provide through-penetration firestop systems not requiring removal of insulation.

E. For through-penetration firestop systems exposed to view, provide products with flame-spread ratings of less than 25 and smoke-developed ratings of less than 450, as determined per ASTM E 84.

1.4 SUBMITTALS

A. Product Data: For each type of through-penetration firestop system product indicated.

B. Shop Drawings: For each through-penetration firestop system, show each kind of construction condition penetrated, relationships to adjoining construction, and kind of penetrating item. Include firestop design designation of testing and inspecting agency acceptable to Authorities Having Jurisdiction that evidences compliance with requirements for each condition indicated.

1. Submit documentation, including illustrations, from a qualified testing and inspecting agency that is applicable to each through-penetration firestop system configuration for construction and penetrating items.

2. Where Project conditions require modification of qualified testing and inspecting agency's illustration to suit a particular through-penetration firestop condition, submit illustration, with modifications marked, approved by through-penetration firestop system manufacturer's fire-protection engineer.

C. Qualification Data: For firms and persons specified in "Quality Assurance" Article to demonstrate their capabilities and experience. Include lists of completed projects with

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project names and addresses, names and addresses of Architect and Owner, and other information specified.

D. Product Certificates: Signed by manufacturers of through-penetration firestop system products certifying that products furnished comply with requirements.

E. Product Test Reports: From a qualified testing agency indicating through-penetration firestop system complies with requirements, based on comprehensive testing of current products.

1.5 QUALITY ASSURANCE

A. Installer Qualifications: An experienced installer who has completed through-penetration firestop systems similar in material, design, and extent to that indicated for this Project and whose work has resulted in construction with a record of successful in-service performance.

B. Installer Qualifications: An experienced installer who is qualified by having the necessary experience, staff, and training to install manufacturer's products per specified requirements. A manufacturer's willingness to sell its through-penetration firestop system products to Contractor or to an installer engaged by Contractor does not in itself confer qualification on buyer.

C. Source Limitations: Obtain through-penetration firestop systems, for each kind of penetration and construction condition indicated, from a single manufacturer.

D. Fire-Test-Response Characteristics: Provide through-penetration firestop systems that comply with the following requirements and those specified in "Performance Requirements" Article:

1. Firestopping tests are performed by a qualified testing and inspecting agency. A qualified testing and inspecting agency is UL. or another agency performing testing and follow-up inspection services for firestop systems acceptable to Authorities Having Jurisdiction.

2. Through-penetration firestop systems are identical to those tested per ASTM E 814. Provide rated systems complying with the following requirements:
    a. Through-penetration firestop system products bear classification marking of qualified testing and inspecting agency.
    b. Through-penetration firestop systems correspond to those indicated by reference to through-penetration firestop system designations listed by the following:
        1) UL in "Fire Resistance Directory."

E. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Meetings."

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver through-penetration firestop system products to Project site in original, unopened containers or packages with intact and legible manufacturers' labels identifying product and manufacturer; date of manufacture; lot number; shelf life, if applicable; qualified testing and inspecting agency's classification marking applicable to Project; curing time; and mixing instructions for multi component materials.

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B. Store and handle materials for through-penetration firestop systems to prevent their deterioration or damage due to moisture, temperature changes, contaminants, or other causes.

1.7 PROJECT CONDITIONS

A. Environmental Limitations: Do not install through-penetration firestop systems when ambient or substrate temperatures are outside limits permitted by through-penetration firestop system manufacturers or when substrates are wet due to rain, frost, condensation, or other causes.

B. Ventilate through-penetration firestop systems per manufacturer's written instructions by natural means or, where this is inadequate, forced-air circulation.

1.8 COORDINATION

A. Coordinate construction of openings and penetrating items to ensure that through-penetration firestop systems are installed according to specified requirements.

B. Coordinate sizing of sleeves, openings, core-drilled holes, or cut openings to accommodate through-penetration firestop systems.

C. Notify Contractor’s inspecting agency at least seven days in advance of through-penetration firestop system installations; confirm dates and times on days preceding each series of installations.

D. Do not cover up through-penetration firestop system installations that will become concealed behind other construction until Contractor’s inspecting agency and building inspector, if required by Authorities Having Jurisdiction, have examined each installation.

PART 2 - PRODUCTS

2.1 PRODUCTS / MANUFACTURERS

A. Products: Subject to compliance with requirements, provide one of the through-penetration firestop systems indicated for each application in the Through-Penetration Firestop System Schedule at the end of Part 3 and as shown on drawings and as produced by one of the following manufacturers:

B. Manufacturers: Subject to compliance with requirements, provide products by one of the following:

1. Hilti Construction Chemicals, Inc.
2. Isolatek International.
3. Nelson Firestop Products.
4. 3M Fire Protection Products.
5. Or approved equal.

2.2 FIRESTOPPING, GENERAL

A. Compatibility: Provide through-penetration firestop systems that are compatible with one another, with the substrates forming openings, and with the items, if any, penetrating

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through-penetration firestop systems, under conditions of service and application, as demonstrated by through-penetration firestop system manufacturer based on testing and field experience.

B. Accessories: Provide components for each through-penetration firestop system that are needed to install fill materials and to comply with "Performance Requirements" Article. Use only components specified by through-penetration firestop system manufacturer and approved by the qualified testing and inspecting agency for firestop systems indicated. Accessories include, but are not limited to, the following items:

1. Permanent forming/damming/backing materials, including the following:
   a. Slag-/rock-wool-fiber insulation.
   b. Sealants used in combination with other forming/damming/backing materials to prevent leakage of fill materials in liquid state.
   c. Fire-rated form board.
   d. Fillers for sealants.

2. Temporary forming materials.

3. Substrate primers.

4. Collars.

5. Steel sleeves.

2.3 FILL MATERIALS

A. General: Provide through-penetration firestop systems containing the types of fill materials indicated in the Through-Penetration Firestop System Schedule at the end of Part 3 by reference to the types of materials described in this Article. Fill materials are those referred to in directories of the referenced testing and inspecting agencies as fill, void, or cavity materials.

B. Latex Sealants: Single-component latex formulations that after cure do not re-emulsify during exposure to moisture.

C. Firestop Devices: Factory-assembled collars formed from galvanized steel and lined with intumescent material sized to fit specific diameter of penetrant.

D. Intumescent Composite Sheets: Rigid panels consisting of aluminum-foil-faced elastomeric sheet bonded to galvanized steel sheet.

E. Intumescent Putties: Nonhardening dielectric, water-resistant putties containing no solvents, inorganic fibers, or silicone compounds.

F. Intumescent Wrap Strips: Single-component intumescent elastomeric sheets with aluminum foil on one side.

G. Mortars: Prepackaged, dry mixes consisting of a blend of inorganic binders, hydraulic cement, fillers, and lightweight aggregate formulated for mixing with water at Project site to form a nonshrinking, homogeneous mortar.

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H. Pillows/Bags: Reusable, heat-expanding pillows/bags consisting of glass-fiber cloth cases filled with a combination of mineral-fiber, water-insoluble expansion agents and fire-retardant additives.

I. Silicone Foams: Multi component, silicone-based liquid elastomers that, when mixed, expand and cure in place to produce a flexible, nonshrinking foam.

J. Silicone Sealants: Moisture-curing, single-component, silicone-based, neutral-curing elastomeric sealants of grade indicated below:

1. Grade: Pourable (self-leveling) formulation for openings in floors and other horizontal surfaces and nonsag formulation for openings in vertical and other surfaces requiring a nonslumping, gunnable sealant, unless indicated firestop system limits use to nonsag grade for both opening conditions.

2. Grade for Horizontal Surfaces: Pourable (self-leveling) formulation for openings in floors and other horizontal surfaces.

3. Grade for Vertical Surfaces: Nonsag formulation for openings in vertical and other surfaces.

2.4 MIXING

A. For those products requiring mixing before application, comply with through-penetration firestop system manufacturer's written instructions for accurate proportioning of materials, water (if required), type of mixing equipment, selection of mixer speeds, mixing containers, mixing time, and other items or procedures needed to produce products of uniform quality with optimum performance characteristics for application indicated.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates and conditions, with Installer present, for compliance with requirements for opening configurations, penetrating items, substrates, and other conditions affecting performance.

B. Proceed with installation only after unsatisfactory conditions have been corrected.

3.2 PREPARATION

A. Surface Cleaning: Clean out openings immediately before installing through-penetration firestop systems to comply with written recommendations of firestop system manufacturer and the following requirements:

1. Remove from surfaces of opening substrates and from penetrating items foreign materials that could interfere with adhesion of through-penetration firestop systems.

2. Clean opening substrates and penetrating items to produce clean, sound surfaces capable of developing optimum bond with through-penetration firestop systems. Remove loose particles remaining from cleaning operation.

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3. Remove laitance and form-release agents from concrete.

B. Priming: Prime substrates where recommended in writing by through-penetration firestop system manufacturer using that manufacturer's recommended products and methods. Confine primers to areas of bond; do not allow spillage and migration onto exposed surfaces.

C. Masking Tape: Use masking tape to prevent through-penetration firestop systems from contacting adjoining surfaces that will remain exposed on completion of Work and that would otherwise be permanently stained or damaged by such contact or by cleaning methods used to remove smears from firestop system materials. Remove tape as soon as possible without disturbing firestop system's seal with substrates.

3.3 THROUGH-PENETRATION FIRESTOP SYSTEM INSTALLATION

A. General: Install through-penetration firestop systems to comply with "Performance Requirements" Article and firestop system manufacturer's written installation instructions and published Drawings for products and applications indicated.

B. Install forming/damming/backing materials and other accessories of types required to support fill materials during their application and in the position needed to produce cross-sectional shapes and depths required to achieve fire ratings indicated.

1. After installing fill materials, remove combustible forming materials and other accessories not indicated as permanent components of firestop systems.

C. Install fill materials for firestop systems by proven techniques to produce the following results:

1. Fill voids and cavities formed by openings, forming materials, accessories, and penetrating items as required to achieve fire-resistance ratings indicated.

2. Apply materials so they contact and adhere to substrates formed by openings and penetrating items.

3. For fill materials that will remain exposed after completing Work, finish to produce smooth, uniform surfaces that are flush with adjoining finishes.

3.4 FIELD QUALITY CONTROL

A. Inspecting Agency: The Contractor will engage a qualified independent inspecting agency to inspect through-penetration firestop systems and to prepare test reports.

1. Inspecting agency will state in each report whether inspected through-penetration firestop systems comply with or deviate from requirements.

B. Proceed with enclosing through-penetration firestop systems with other construction only after inspection reports are issued.

C. Where deficiencies are found, repair or replace through-penetration firestop systems so they comply with requirements.

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3.5 IDENTIFICATION

A. Identify through-penetration firestop systems with pressure-sensitive, self-adhesive, preprinted vinyl labels. Attach labels permanently to surfaces of penetrated construction on both sides of each firestop system installation where labels will be visible to anyone seeking to remove penetrating items or firestop systems. Include the following information on labels:

1. The words: "Warning–Through-Penetration Firestop System–Do Not Disturb. Notify Building Management of Any Damage."

2. Contractor's name, address, and phone number.

3. Through-penetration firestop system designation of applicable testing and inspecting agency.

4. Date of installation.

5. Through-penetration firestop system manufacturer's name.

6. Installer's name.

3.6 CLEANING AND PROTECTION

A. Clean off excess fill materials adjacent to openings as Work progresses by methods and with cleaning materials that are approved in writing by through-penetration firestop system manufacturers and that do not damage materials in which openings occur.

B. Provide final protection and maintain conditions during and after installation that ensure through-penetration firestop systems are without damage or deterioration at time of Substantial Completion. If, despite such protection, damage or deterioration occurs, cut out and remove damaged or deteriorated through-penetration firestop systems immediately and install new materials to produce through-penetration firestop systems complying with specified requirements.

3.7 THROUGH-PENETRATION FIRESTOP SYSTEM SCHEDULE

A. Where UL-classified systems are indicated, they refer to the alpha-alpha-numeric designations listed in UL's "Fire Resistance Directory" under product Category XHEZ.

1. Firestop Systems with No Penetrating Items: Comply with the following:
   a. Latex sealant.
   b. Silicone sealant.
   c. Intumescent putty.
   d. Mortar.

END OF SECTION 07840

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SECTION 07900 - JOINT SEALER ASSEMBLIES

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Part 1 through Part 6 Specification Sections, apply to this Section.

1.2 SUMMARY

A. This Section includes joint sealant assemblies for the following applications which include performances of materials, installation requirements, as indicated herein in this Specification and as specified by cross references in other Parts 1 through 6 Specification sections.

B. Exterior joints in the following vertical surfaces and nontraffic horizontal surfaces:

1. Joints between different materials..
2. Other joints, as indicated.

C. Exterior joints in the following horizontal traffic surfaces:

1. Joints between different materials.
2. Other joints as indicated.

D. Interior joints in the following vertical surfaces and horizontal nontraffic surfaces:

1. Vertical control joints on exposed surfaces of interior unit masonry walls and partitions.
   a. Perimeter joints between interior wall surfaces and metal duct work.
   b. Other joints, as indicated.

E. Preparation of all joints to be sealed.

F. Exterior joints in vertical surfaces and nontraffic horizontal surfaces as indicated below:

1. Cutting out as needed to give proper depth.
2. Installation of proper back up material for each joint.
3. Cleaning to remove all dust, dirt, oil films, loose material etc.
4. Masking of adjacent surfaces.
5. Priming of joint surfaces.

1.3 QUALITY ASSURANCE

A. Fire Performance Characteristics: Where fire rated joint assemblies are indicated, provide materials and construction which are identical to those of assemblies whose fire endurance has been determined by testing in compliance with the following requirements, tested by a recognized testing and inspecting organization or by another means, as acceptable to Authority Having Jurisdiction.

1. Fire Testing: ASTM E 119/UL 263.
2. Surface Burning Characteristics: ASTM E84/UL 723.

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a. Flame Spread: 15
b. Smoke Developed: 0

3. Through - Penetration Firestopping: ASTM E814/UL 1479.
4. Fire Resistance of Building Joint Systems: UL 2079

B. VOC Content of Interior Sealants and Sealant Primers: Comply with the following limits when calculated according to 40 CFR 59, Subpart D (EPA Method 24):

1. Sealants: Not more than 250 g/L.
2. Sealant Primers for Nonporous Substrates: Not more than 250 g/L.
3. Sealant Primers for Porous Substrates: Not more than 775 g/L.

C. Installer Qualifications: An experienced installer who has specialized in installing joint sealants similar in material, design, and extent to those indicated for this Project and whose work has resulted in joint-sealant installations with a record of successful in-service performance.

1. Source Limitations: Obtain each type of joint sealant through one source from a single manufacturer.

2. Preconstruction Compatibility and Adhesion Testing: Submit to joint sealant manufacturers, for testing indicated below, samples of materials that will contact or affect joint sealants.
   a. Use manufacturers standard test methods to determine whether priming and other specific joint preparation techniques are required to obtain rapid, optimum adhesion of joint sealants to joint substrates.
   b. Testing will not be required if joint sealant manufacturers submit joint preparation data that are based on previous testing of current sealant products for adhesion to, and compatibility with, joint substrates and other materials matching those submitted.
   c. Preconstruction Field-Adhesion Testing: Before installing elastomeric sealants, field test their adhesion to joint substrates as follows:
      (1) Locate test joints where indicated or, if not indicated, as directed by Architect.
      (2) Conduct field tests for each application indicated below:
         (a) Each type of elastomeric sealant and joint substrate indicated.
         (b) Each type of nonelastomeric sealant and joint substrate indicated.
      (3) Notify Architect seven days in advance of dates and times when test joints will be erected.
      (4) Sealant Manufacturer Responsibility:
         (a) Manufacturer shall provide Technical Representative to perform Sealant Joint Field Pull Test. Manufacturer Sales representative is not acceptable to perform Field Pull Test.
         (b) Technical Representative performing Field Pull Test must be an employee of the Sealant Manufacturer. Outside Sales Agent or Contract Technical Representative is not acceptable to perform Field Pull Test.
      (5) Test Method: Test joint sealants by hand-pull method described below:
         (a) Install joint sealants in 60-inch long joints using same materials and methods for joint preparation and joint-sealant installation required for the completed Work. Allow sealants to cure fully before testing.

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(b) Make knife cuts from one side of joint to the other, followed by two cuts approximately 2 inches long at sides of joint and meeting cross cut at one end. Place a mark 1 inch from cross-cut end of 2-inch piece.

(c) Use fingers to grasp 2-inch piece of sealant between cross-cut end and 1-inch mark; pull firmly at a 90-degree angle or more in direction of side cuts while holding a ruler along side of sealant. Pull sealant out of joint to the distance recommended by sealant manufacturer for testing adhesive capability, but not less than that equaling specified maximum movement capability in extension; hold this position for 10 seconds.

(d) For joints with dissimilar substrates, check adhesion to each substrate separately. Do this by extending cut along one side, checking adhesion to opposite side, and then repeating this procedure for opposite side.

(6) Report whether sealant in joint connected to pulled-out portion failed to adhere to joint substrates or tore cohesively. Include data on pull distance used to test each type of product and joint substrate. For sealants that fail adhesively, retest until satisfactory adhesion is obtained.

(7) Evaluation of Preconstruction Field-Adhesion-Test Results: Sealants not evidencing adhesive failure from testing, in absence of other indications of noncompliance with requirements, will be considered satisfactory. Do not use sealants that fail to adhere to joint substrates during testing.

3. Mockups: Before installing joint sealants, apply elastomeric sealants as follows to verify selections made under sample Submittals and to demonstrate aesthetic effects and qualities of materials and execution:
   a. Joints in mockups of assemblies specified in other Sections that are indicated to receive elastomeric joint sealants, which are specified by reference to this Section.
   b. Preinstallation Conference: Conduct conference at Project site to comply with requirements in Division 1 Section "Project Meetings."

4. PROJECT CONDITIONS
   a. Environmental Limitations: Do not proceed with installation of joint sealants under the following conditions:
      (1) When ambient and substrate temperature conditions are outside limits permitted by joint sealant manufacturer.
      (2) When ambient and substrate temperature conditions are outside limits permitted by joint sealant manufacturer or are below 40°F.
      (3) When joint substrates are wet.
   b. Joint-Width Conditions: Do not proceed with installation of joint sealants where joint widths are less than those allowed by joint sealant manufacturer for applications indicated.
   c. Joint-Substrate Conditions: Do not proceed with installation of joint sealants until contaminants capable of interfering with adhesion are removed from joint substrates.

D. Special Project Warrantee and Guarantee:

1. Special Installer's Warranty: Written warranty, signed by Installer agreeing to repair or replace elastomeric joint sealants that do not comply with performance and other requirements specified in this Section within specified warranty period.
   a. Warranty Period: **Five (5) years** from approved date of Substantial Completion.

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2. Special Manufacturer's Warranty: Written warranty, signed by elastomeric sealant manufacturer agreeing to furnish elastomeric joint sealants to repair or replace those that do not comply with performance and other requirements specified in this Section within specified warranty period.
   a. Warranty Period: **Five (5) years** from approved date of Substantial Completion.

3. Guarantee shall further state that all exterior sealant will be guaranteed against:
   a. Adhesive or cohesive failure in joints where movement is under maximum 25% extension or compression.
   b. Any crazing greater than 3 mils in depth developing on surface of material.

1.4 SUBMITTALS

A. Product Data from manufacturers for each joint sealer product required, including instructions for joint preparation and joint sealer application, include color samples showing full range of colors available, for each product exposed to view.

1. Product Certificates: Signed by manufacturers of joint sealants certifying that products furnished comply with requirements and are suitable for the use indicated.

B. Product Test Reports: From a qualified testing agency indicating sealants comply with requirements, based on comprehensive testing of current product formulations.

1.5 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials to Project site in original unopened containers or bundles with labels informing about manufacturer, product name and designation, color, expiration period for use, pot life, curing time, and mixing instructions for multi-component materials.

B. Store and handle materials in compliance with manufacturers' recommendations to prevent their deterioration or damage due to moisture, high or low temperatures, contaminants, or other causes.

1.6 PROJECT CONDITIONS

A. Environmental Conditions: Do not proceed with installation of joint sealers under the following conditions:

1. When ambient and substrate temperature conditions are outside the limits permitted by joint sealer manufacturers.

2. When ambient and substrate temperature conditions are outside the limits permitted by joint sealer manufacturer or below 40°F (4.4°C).

3. When joint substrates are wet due to rain, frost, condensation, or other causes.

B. Joint Width Conditions: Do not proceed with installation of joint sealers where joint widths are less than allowed by joint sealer manufacturer for application indicated.

C. Joint Substrate Conditions: Do not proceed with installation of joint sealers until contaminants capable of interfering with their adhesion are removed from joint substrates.

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PART 2 - PRODUCTS

2.1 MATERIALS, GENERAL

A. Compatibility: Provide joint sealers, joint fillers and other related materials that are compatible with one another and with joint substrates under conditions of service and application, as demonstrated by sealant manufacturer based on testing and field experience.

B. Colors: Provide color of exposed joint sealers indicated or, if not otherwise indicated, as selected by Architect from manufacturer's available full range of standard and optional colors.

C. Grade of Sealant: For each application, provide the grade of sealant (nonsag, self-leveling, no track, knife grade, etc.) as recommended by the manufacturer for the particular condition of installation (location, joint shape, ambient temperature, and similar conditions) to achieve the best possible overall performance. Grades specified herein are for normal condition of installation.

2.2 MISCELLANEOUS MATERIALS

A. Joint Primer/Sealer: Provide the type of joint primer/sealer recommended by the sealant manufacturer of the joint surfaces to be primed or sealed.

B. Bond-Breaker Tape: Polyethylene tape or other plastic tape as recommended by sealant manufacturer for preventing sealant from adhering to rigid, inflexible joint filler materials or joint surfaces at back of joint where such adhesion would result in sealant failure. Provide self-adhesive tape where applicable.

C. Sealant Backer Rod: Provide materials which are in compliance with ASTM D 1056; compressible rod stock of polyethylene foam, polyethylene jacketed polyurethane foam. butyl rubber foam, neoprene foam or other flexible, permanent, durable non-absorptive material as recommended for compatibility with sealant by the sealant manufacturer.

1. Materials shall be capable of remaining resilient at temperatures down to minus 26°F.

2.3 SEALANTS

A. **Sealant Type 2**: For sealing exterior joints, provide a Single-Component, Nonsag, Neutral-Curing Silicone Joint Sealant: ASTM C 920, Type S, Grade NS, Class 100/50, for Use NT.

1. Products: Subject to compliance with requirements, provide one of the following:
   a. “Spectrum 1 / Spectrum 800"; Tremco, an RPM Co.
   b. “SikaSil - WS290"; Sika Corporation
   c. “Dowsil 790 Silicone Building Sealant; Dow Corning Corporation
   d. Or approved equal.

B. **Sealant Type 5**: For all interior joints between drywall partitions, CMU walls, hollow metal framing, cabinet heater, other metal mechanical or electrical assemblies, (sealant work performed by other trades and cross-referenced to the work of this section), etc., where all adjacent surfaces will receive paint:

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1. Latex Sealant: Non-elastomeric, one part, non-sag, paintable latex sealant recommended for exposed joints applications, complying with ASTM C 834, Type P (opaque sealants), Grade NF.

2. Products: Subject to compliance with requirements, provide one of the following:
   a. "AC-20 Plus Silicone"; Pecora Corporation.
   b. "Tremflex 834"; Tremco, an RPM Co.
   c. "Sonolastic Sonolac"; Sonneborn Building Products Div., ChemRex, Inc.
   d. Or approved equal.

C. **Sealant Type 6: Hybrid Sealants (Silyl-Terminated Polyether (STPE) Joint Sealants**

1. **STPE, S, NS, 50, NT**: Single-component, nonsag, plus 50 percent and minus 50 percent movement capability, nontraffic-use, silyl-terminated polyether joint sealant; ASTM C920, Type S, Grade NS, Class 50, Use NT.
   a. Uses: Interior and exterior horizontal and vertical joints of door and window perimeters, expansion and control joints, coping and coping to facade joints, EIFS and architectural panels, fiber cement panels, etc.
   b. Products: Subject to compliance with requirements, provide one of the following:
      1) "DynaTrol® I-XL Hybrid" as manufactured by Pecora Corporation. Available in ten (10) colors.
      2) "DynaTrol® I-XL Hybrid FTH" as manufactured by Pecora Corporation. Field tintable, available in fifty (50) colors.
      3) Equivalent by Tremco, an RPM Co.
      4) Equivalent by Sika.
      5) Equivalent by Dow Corning.
      6) Or approved equal.

2.4 FIRE RATED JOINTS

A. Construction fire rated joint assemblies shall meet indicated fire rating performance requirements. Provide assemblies where required and as indicated on the Drawings with the following components:

1. Joint Filler: Subject to compliance with indicated requirements, provide one of the following:
   a. "Ultra Block", as manufactured by Backer Rod Manufacturing,
   b. "Cerablanket"; Tremco,
   c. ThermaFiber
   d. Or approved equal.
   e. Provide fire rated joint filler in thickness and shape as required to fill joints.

2. Joint Sealant: Subject to compliance with requirements, provide one of the following:
   a. "Dynatrol II"; Pecora Corporation.
   b. "Tremstop Acrylic"; Tremco, Inc, or "Trimstop IA, Intumescent Acrylic, Tremco, Inc.
   c. "Sikaflex-2c NS"; Sika Corporation.
   d. Equivalent by Dow Corning.
   e. Or approved equal.

PART 3 - EXECUTION

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3.1 EXAMINATION

A. Examine joints indicated to receive joint sealers, with Installer present, compliance with requirements for joint configuration, installation tolerances and other conditions affecting joint sealer-performance. Do not proceed with installation of joint sealers until unsatisfactory conditions have been corrected.

3.2 INSTALLATION

A. Surface Cleaning of Joints: Clean out joints immediately before installing joint sealers to comply with recommendations of joint sealer manufacturers and the following requirements:

B. Remove all foreign material from joint substrates which could interfere with adhesion of joint sealer, including dust; paints, except for permanent, protective coatings tested and approved for sealant adhesion and compatibility by sealant manufacturer; old joint sealers; oil; grease; waterproofing; water repellants; water; surface dirt; and frost.

C. Clean masonry, unglazed surfaces of porous joint substrate surfaces, by brushing, grinding, blast cleaning, mechanical abrading, or a combination of these methods to produce a clean, sound substrate capable of developing optimum bond with joint sealers. Remove loose particles remaining from above cleaning operations by vacuuming or blowing out joints with oil-free compressed air.

D. Clean metal, porcelain enamel, glazed surfaces of nonporous surfaces by chemical cleaners or other means which are not harmful to substrates or leave residues capable of interfering with adhesion of joint sealers.

E. Joint Priming: Prime joint substrates where indicated or where recommended by joint sealer manufacturer based on preconstruction joint sealer-substrate tests or prior experience. Apply primer to comply with joint sealer manufacturer's recommendations. Confine primers to areas of joint sealer bond, do not allow spillage or migration onto adjoining surfaces.

F. Masking Tape: Use masking tape where required to prevent contact of sealant with adjoining surfaces which otherwise would be permanently stained or damaged by such contact or by cleaning methods required to remove sealant smears. Remove tape immediately after tooling without disturbing joint seal.

G. Install joint fillers of type indicated to provide support of sealants during application and at position required to produce the cross-sectional shapes and depths of installed sealants relative to joint widths which allow optimum sealant movement capability.

1. Do not leave gaps between ends of joint fillers.

2. Do not stretch, twist, puncture, or tear joint fillers.

3. Remove absorbent joint fillers which have become wet prior to sealant application and replace with dry material.

H. Install bond breaker tape between sealants and joint fillers, compression seals, or back of joints where adhesion of sealant to surfaces at back of joints would result in sealant failure.

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I. Install compressible seals serving as sealant backings to comply with requirements indicated above for joint fillers.

J. Installation of Sealants: Install sealants by proven techniques that result in sealants directly contacting and fully wetting joint substrates, completely filling recesses provided for each joint configuration, and providing uniform, cross-sectional shapes and depths relative to joint widths which allow optimum sealant movement capability.

3.3 CLEANING

A. Clean off excess sealants or sealant smears adjacent to joints as work progresses by methods and with cleaning materials approved by manufacturers of joint sealers and of products in which joints occur.

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SECTION 09250 - GYPSUM DRYWALL

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Extent of each type of gypsum drywall construction required is indicated on the Drawings.

B. This Section includes the following types of gypsum board construction:

1. Gypsum drywall including screw-type metal support system

2. Drywall finishing (joint tape and compound treatment)

3. Vinyl trim and accessories.

C. Related Sections:

1. Section 09900 - Painting

1.3 QUALITY ASSURANCE

A. Manufacturer: Obtain gypsum board products from a single manufacturer, or from manufacturers recommended by the prime manufacturer of gypsum boards.

B. Fire-Resistance Ratings: Where indicated, provide materials and construction which are identical to those of assemblies whose fire resistance rating has been determined per ASTM E 119 by a testing and inspecting organization acceptable to Authorities Having Jurisdiction.

1. Provide fire-resistance-rated assemblies identical to those indicated by reference to GA File No's. in GA-600 "Fire Resistance Design Manual" or to design designations in UL "Fire Resistance Directory" or in listing of other testing and agencies acceptable to Authorities Having Jurisdiction.

C. Single Source Responsibility: Obtain each type of gypsum board and related joint treatment materials from a single manufacturer.

D. Structural Performance Characteristics for drywall shaft system: Provide drywall shaft systems designed and tested by manufacturer to withstand the following lateral design loadings (air pressures), applied transiently and cyclically, for maximum heights of partitions required, within the following deflection limits:

1. Lateral Loading: 5 psf.

2. Deflection Limit: 1/240 of partition height.

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E. Fireblocking and Draftstopping: Comply with the International Building Code requirements for installation of fireblocking and / or draftstopping, to prevent the fire passage of flame and product of combustion through concealed spaces or openings in gypsum board systems, in the event of fire.

F. Provide self extinguishing vinyl trim accessories which do not support combustion once flame source is removed.

1.4 REFERENCES

A.	ANSI/ASTM C 840	Gypsum Board Standard - Comply with applicable requirements for application and finishing of gypsum board, unless otherwise indicated.
B.	ASTM C1396/C1396M	Gypsum Wallboard (Standard, Type X, Flexible, Ceiling, Foil-Backed, Mold-Resistant)
C.	ASTM C754	Steel Framing Standard - Comply with applicable requirements for installation of steel framing for gypsum board)
D.	ASTM C11	Gypsum and Related Building Materials and Systems
E.	ASTM D1784	Standard Specification for Rigid Poly (Vinyl Chloride) (PVC) Compounds and Chlorinated Poly (Vinyl Chloride) (CPCV) Compounds
F.	ASTM C475/C475M	Joint Treatment Materials
G.	ASTM D3678	Standard Specification for Rigid Poly (Vinyl Chloride) (PVC) Interior-Profile Extrusions
H.	ASTM C1047	Interior Trim

I. Application and Finishing of Gypsum Panel Products: GA-216

1.5 SUBMITTALS

A. Product Data: Submit manufacturer's product Specifications and installation instructions for each gypsum drywall component, including other data as may be required to show compliance with these Specifications.

B. Samples: For the following products:

1. Trim Accessories: Full-size Sample in 12-inch- (300-mm-) long length for each trim accessory indicated.

1.6 DELIVERY, STORAGE, AND HANDLING

A. Deliver materials in original packages, containers or bundles bearing brand name and identification of manufacturer or supplier.

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B. Store materials inside under cover and keep them dry and protected against damage from weather, direct sunlight, surface contamination, corrosion and damage from construction traffic and other causes. Neatly stack gypsum boards flat to prevent sagging.

C. Handle gypsum boards to prevent damage to edges, ends, and surfaces. Do not bend or otherwise damage metal corner beads and trim.

1.7 PROJECT CONDITIONS

A. Environmental Conditions, General: Establish and maintain environmental conditions for application and finishing gypsum board to comply with ASTM C 840 and with gypsum board manufacturer's recommendations.

1. Minimum Room Temperatures: When ambient outdoor temperatures are below 55°F maintain continuous, comfortable building working temperature of not less than 55°F for 48 hours prior to application and continuously thereafter until drying is complete.

2. Ventilate building spaces as required to remove water in excess of that required for drying joint treatment material immediately after its application. Avoid drafts during dry, hot weather to prevent materials form drying too rapidly.

3. The gypsum drywall shall be installed only when the roof repairs are completed and in watertight condition to prevent the growth of mold. The Contractor shall not install gypsum drywall panels that are wet, have the indication of mold, including but not limited to: fuzzy or splotchy surface contamination and discoloration.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Acceptable Manufacturers: Subject to compliance with requirements, manufacturers offering products which may be incorporated in the Work include, but are not limited to, the following:

B. Metal Support Systems:

1. Allied Structural Industries
2. Clark-Dietrich Building Systems
3. National Gypsum Company
4. Marino\WARE; a Div. of WARE Industries, Inc.
5. United States Gypsum Co. (USG)
6. Or approved equal.

C. Gypsum Boards and Related Products:

1. CertainTeed Gypsum.
2. Georgia-Pacific Corp.
3. Gold Bond Building Products Div., National Gypsum Co.
4. United States Gypsum Co.
5. Continental Building Products
6. Or approved equal.

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D. Vinyl Trim

1. Trim-Tex,
2. Or approved equal.

2.2 METAL SUPPORT MATERIALS

A. General: Provide components which comply with ASTM C754 for materials and sizes, unless otherwise indicated.

B. Ceiling Support Materials and Systems

1. General: Size ceiling support components to comply with ASTM C754 unless otherwise indicated.

2. Main Runners: Steel channels with rust inhibitive paint finish, hot or cold-rolled.

3. Hanger Wire: ASTM CA641, soft, Class 1 galvanized.

4. Hanger Anchorage Devices: Devices applicable to the indicated method of structural anchorage for ceiling hangers and whose suitability for use intended has been proven through standard construction practices or by certified test data. Size devices for 3x calculated load supported.

5. Furring Member: ASTM C645; 0.0179" minimum thickness of base metal, hat-shaped.

6. Furring Anchorages: 16 gauge galvanized wire ties, manufacturer's standard wire type clips, bolts, nails or screws as recommended by furring manufacturer and complying with C754.

7. Direct Suspension Systems: Manufacturer's standard zinc coated or painted steel system of furring runners, furring tees, and accessories designed for concealed support of gypsum drywall ceilings, of proper type for use intended.

C. Wall/Partition Support Materials

1. Studs ASTM C645, 25 gauge unless otherwise indicated. 20 gauge minimum at door jambs and wherever structural or other gauge studs are called for, for use with impact resistant type gypsum wallboard, and to comply with applicable published instructions and recommendations of gypsum board manufacturer or, if not available, of "Gypsum Construction Handbook" published by United States Gypsum Company; or approved equal.
   a. Depth of Section: 3-5/8 inch, unless indicated otherwise.
   b. Runners: Match studs; type recommended by stud manufacturer for floor and ceiling support of studs, and for vertical abutment of drywall Work at other Work.
   c. Provide structural heavy gauge studs and bracing to support loads of wall mounted items, equipment, cabinets, etc. coordinate with other trades for weight requirements and mounting locations.

2. Hemmed Leg Furring Channel Members: ASTM C645, 25 gauge hat-shaped.

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3. Fasteners for Stud Members: Provide fasteners of type, material, size, recommended by furring manufacturer for the substrate and application indicated.

2.3 GYPSUM BOARD

A. General: ASTM C1396, in maximum lengths available to minimize end to end joints.

1. Type: Regular, unless otherwise indicated.

2. Edges: Tapered.

3. Thickness: 5/8 inch, unless otherwise indicated.

2.4 TRIM ACCESSORIES

A. General: Provide manufacturer's standard trim accessories of types indicated for drywall work, formed of galvanized steel unless otherwise indicated, with either knurled and perforated or expanded flanges for nailing or stapling, and beaded for concealment of flanges in joint compound. Provide corner beads, L-type edge trim beads, J-type edge trim beads, special L-kerf type edge trim beads, and one-piece control joint beads.

B. Semi-Finishing Type: Manufacturer's standard trim units which are not to be finished with joint compound (non-beaded), where indicated.

2.5 JOINT TREATMENT MATERIALS (GYPSUM BOARD APPLICATION)

A. General: Provide materials complying with ASTM C475, ASTM C840, and recommendations of manufacturer of both gypsum board and joint treatment materials for the application indicated.

B. Joint Tape: Manufacturer’s recommended types for indicated applications. Use types compatible with joint compounds.

C. Joint Compounds: Provide manufacturer’s recommended types for indicated applications.

1. For interior repair and patching Work, provide chemical-hardening-type for bedding and filling, ready-mixed vinyl type or vinyl type powder type for topping.

2.6 MISCELLANEOUS MATERIALS

A. General: Provide auxiliary materials for gypsum drywall construction which comply with referenced standards and the recommendations of the manufacturer of the gypsum board.

B. Gypsum Board Screws: ASTM C954 or ASTM C1002.

C. Acoustical Sealant: Water base type, non-drying, non-bleeding, non-staining type; permanently elastic, as recommended by gypsum board manufacturer.

1. Acoustical Sealant for Exposed and Concealed Joints: Nonsag, paintable, nonstaining, latex sealant, [with a VOC content of 250 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24), complying with ASTM C 834 that effectively

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reduces airborne sound transmission through perimeter joints and openings in building construction as demonstrated by testing representative assemblies according to ASTM E90.

2. Acoustical Sealant for Concealed Joints: Nondrying, nonhardening, nonskinning, nonstaining, gunnable, synthetic-rubber sealant, with a VOC content of 250 g/L or less when calculated according to 40 CFR 59, Subpart D (EPA Method 24), recommended for sealing interior concealed joints to reduce airborne sound transmission.

PART 3 - EXECUTION

3.1 EXAMINATION

A. Examine substrates to which drywall construction attaches or abuts, preset hollow metal frames, cast-in-anchors, and structural framing, with Installer present, for compliance with requirements for installation tolerances and other conditions affecting performance of drywall construction. Do not proceed with installation until unsatisfactory conditions have been corrected.

3.2 INSTALLATION OF METAL SUPPORT SYSTEMS

A. Do not bridge building expansion and control joints with steel framing or furring members; independently frame both sides of joints with framing or furring members or as indicated.

B. Provide furring and shims as required to install new work over existing substrates so that new work will be installed plumb, level and true.

C. Wall-Partition Support Systems:

1. Install supplementary framing, blocking and bracing at terminations in the work and for support of fixtures, equipment services, heavy trim, furnishings, and similar Work to comply with details indicated or, if not otherwise indicated, to comply with applicable published recommendations of gypsum board manufacturer or, if not available, of "Gypsum Construction Handbook" published by United States Gypsum Company.

2. Isolate non-load bearing steel stud system from transfer of structural loading to system, both horizontally and vertically. Provide slip or cushioned type joints to attain lateral support and avoid axial loading.
   a. Install single deep-leg deflection tracks and anchor to building structure.
   b. Connect drift clips to cold-formed metal framing and anchor to building structure.

3. Install runners tracks at floors, ceilings and structural walls and columns where gypsum drywall stud system abuts other Work, except as otherwise indicated. Ramset to precast plank.

4. Extend partition stud system through acoustical ceilings and elsewhere as indicated to the structural support and substrate above the ceiling.

5. Space studs 16 inches o.c. except as otherwise indicated.

6. Extend vertical jamb studs through suspended ceilings and attach to underside of floor or roof structure above.

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7. Frame openings with vertical studs securely attached by screws at each jamb either directly to frames or to jamb anchor clips on door frame; install runner track sections (for jack studs) at head and secure to jamb studs.

8. Provide runner tracks of same gauge as jamb studs. Space jack studs same as partition studs.

9. Cut studs ½" short of full height to provide perimeter relief.

10. Do not fasten studs to top track to allow independent movement of studs and track..

3.3 APPLICATION AND FINISHING OF GYPSUM BOARD, GENERAL

A. Pre-Installation Conference: Meet at the project site with the installers of related Work and review the coordination and sequencing of Work to ensure that everything to be concealed by gypsum drywall has been accomplished, and that chases, access panels, openings, supplementary framing and blocking and similar provisions have been completed.

B. Locate exposed end-butt joints as far from center of walls and ceilings as possible, and stagger not less than 24 inches in alternate courses of board.

C. Install wall/partition boards in manner which minimizes the number of end-butt joints or avoids them entirely where possible.

D. Install exposed gypsum board with face side out. Do not install imperfect, damaged or damp boards. Butt boards together for a light contact at edges and ends with not more than 1/16 inch open space between boards. Do not force into place.

E. Locate either edge or end joints over supports, except in horizontal applications where intermediate supports or gypsum board back-blocking is provided behind end joints. Position boards so that like edges abut, tapered edges against tapered edges and mill-cut or field-cut ends against mill-cut or field-cut ends. Do not place tapered edges against cut edges or ends. Stagger vertical joints over different studs on opposite sides of partitions.

F. Attach gypsum board to framing and blocking provided for additional support at openings and cutouts.

G. Cover both faces of steel stud partition framing with gypsum board in concealed spaces (above ceilings, etc.).

H. Isolate perimeter of non-load-bearing drywall partitions at structural abutments. Provide 1/4 inch to ½ inch space and trim edge with "U" bead edge trim. Seal joints with acoustical sealant.

I. Floating Construction: Where feasible, including where recommended by manufacturer, install gypsum board over wood framing, with "floating" internal corner construction.

J. Space fasteners in gypsum boards in accordance with referenced gypsum board application and finishing standard and manufacturer's recommendations.

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3.4 METHODS OF GYPSUM BOARD APPLICATION

A. Single-Layer Application: Install gypsum wallboard as follows:

1. On partitions/walls apply gypsum board vertically (parallel to framing), unless otherwise indicated, and provide sheet lengths which will minimize end joints.

3.5 INSTALLATION OF DRYWALL TRIM ACCESSORIES

A. General: Where feasible, use the same fasteners to anchor trim accessory flanges as required to fasten gypsum board to the supports. Otherwise, fasten flanges to comply with manufacturer's recommendations.

B. Install corner beads at external corners.

C. Install metal edge trim whenever edge of gypsum board would otherwise be exposed or semi-exposed, and except where plastic trim is indicated. Provide type with face flange to receive joint compound. Install "L" type trim where drywall construction is tightly abutted to other construction and install special kerfed type where other work is kerfed to receive long leg of "L" type trim. Install U-type trim where edge is exposed, revealed, gasketed, or sealant-filled (including expansion joints).

1. Install J-type semi-finishing trim where indicated, and where exterior gypsum board edges are not covered by applied moldings.

D. Install metal control joint (beaded type) where indicated or required.

3.6 FINISHING OF DRYWALL

A. General: Apply joint treatment at gypsum board joints (both directions); flanges of corner bead, edge trim, and control joints; penetrations; fastener heads, surface defects and elsewhere as required to prepare work for decoration.

B. Prefill open joints and rounded or beveled edges, if any, using setting-type joint compound.

C. Apply joint tape at joints between gypsum boards, except where trim accessories are indicated.

D. Apply joint compounds in 3 coats (not including prefill of openings in base), and sand between last 2 coats and after last coat.

E. Gypsum Board Finish Levels: Finish panels to levels indicated below, according to ASTM C11, ASTM C 840 and GA-216:

1. **Level 1**: All joints and interior angles shall have tape set in joint compound. Surface shall be free of excess joint compound. Tool marks and ridges are acceptable. In plenum areas above the ceiling, attics, areas concealed in the building (does not typically meet fire-resistant assembly requirements.

2. **Level 5**: All joints and interior angles shall have tape embedded in joint compound and shall be immediately wiped with a joint knife leaving a thin coating of joint

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compound over all joints and interior angles. Two separate coats of joint compound shall be applied over all flat joints and one separate coat of joint compound shall be applied over interior angles. Fastener heads and accessories shall be covered with three separate coats of joint compound. A thin skim coat of joint compound trowel applied, or a material manufactured especially for this purpose and applied in accordance with manufacturer's recommendations, applied to the entire surface. The surface shall be free of tool marks and ridges. Finish for areas that are to receive gloss, semi-gloss, enamel or non-textured flat paints.

3.7 CLEANING AND PROTECTION

A. Remove temporary coverings used to protect other work.

B. Provide final protection and maintain conditions, in a manner suitable to Installer, which ensures gypsum drywall construction being without damage or deterioration at time of Substantial Completion.

END OF SECTION 09250

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SECTION 09510 - ACOUSTICAL CEILINGS

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

1.2 SUMMARY

A. Extent of each type of acoustical ceiling is shown and scheduled on the Drawings.

B. Type of acoustical ceilings specified in this section includes the following:

1. Lay in acoustical ceiling board, exposed suspension system.

1.3 QUALITY ASSURANCE

A. Installer: Firm with a recommended three years of successful experience in installation of acoustical ceilings similar to requirements for this project and which is acceptable to manufacturer of acoustical units, as shown by current written statement from manufacturer.

B. Fire Resistance Ratings: As indicated by reference to design designation in UL "Fire Resistance Directory" for floor, roof or beam assemblies in which acoustical ceilings function as a fire protective membrane; tested per ASTM E 119. Provide protection materials for lighting fixtures and air ducts to comply with requirements indicated for rated assembly.

C. Surface Burning Characteristics: As follows, tested per ASTM E 84.

1. Flame Spread: 25 or less.
2. Smoke Developed: 50 or less.

D. All acoustical ceilings shall be installed to conform to the requirements of International Building Code for Category C and the recommendation of the Ceiling and Interior Systems Construction Association (CISCA) for Zone 2 seismic design and comply with installation requirements for areas subject to light to moderate seismic activity.

E. Contractor shall provide adequate ventilation and humidity control before, during and after ceiling installation to prevent damage (sagging, etc.) to ceilings prior to Owner's acceptance of building.

F. Warranty:

1. Provide manufacturer’s special project warranty against sagging or warping of acoustic ceiling boards for a minimum period of **thirty (30) years** which starts on approved date of substantial completion.

G. Unless otherwise approved by the Architect, all Acoustical Ceiling Board type and Suspended Grid System type shall be by a single manufacturer.

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1.4 SUBMITTALS

A. Product Data: Submit manufacturer's technical data for type of acoustical ceiling unit and suspension system required including certified test reports to show compliance with requirements of these specifications.

1. Include manufacturer's recommendations for cleaning and refinishing acoustical units, including precautions against materials and methods which may be detrimental to finishes and acoustical performance.

B. Samples: Submit manufacturer's standard size samples of acoustical unit, but not less than 6" square, and of exposed ceiling suspension members including wall and special moldings. Provide samples showing full range of colors, textures and patterns available for each type of component required.

C. Shop Drawings: Submit shop drawings for acoustical ceiling, including layout of system components and details of connections between elements of system and between system and other building components.

1. **Contractor must provide shop drawings certifying that attachment devices meet specified loads. Contractor must coordinate with all Subcontractors for fixture loads, etc.**

D. Testing Reports: Submit testing reports which indicate compliance with indicated requirements.

E. Deliver extra materials to Owner. Furnish extra materials described below matching products installed, packaged with protective covering for storage and identified with appropriate labels.

1. Acoustical Ceiling Units: Furnish quantity of full size units equal to 2.0% (rounded up to the nearest full carton) of each type of acoustic unit installed.

2. Exposed Suspension System Components: Furnish quantity of each exposed component equal to 2.0% (rounded up to the nearest full carton) of each type suspension component installed.

1.5 PROJECT CONDITIONS

A. Space Enclosure: Do not install interior acoustical ceilings until space is enclosed and weatherproof, wet-work in space is completed and nominally dry, work above ceilings is complete, and ambient conditions of temperature and humidity will be continuously maintained at values near those indicated for final occupancy.

PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Basis of Design: Provide Acoustical Ceiling Board (ACB and AACB) and Metal Suspension System as manufactured by Armstrong World Industries; United States Gypsum Co.; CertainTeed Ceilings; or approved equal.

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B. Acoustical Ceiling Tile and Grid system products specified herein have been selected because of their quality of construction, configuration, design, function, available finishes, components, accessories, dimensions, shape and style.

1. Comparable products of the following manufacturers will be considered if it can be clearly shown that their products are equal to or will exceed the construction quality requirements and other design attributes listed as performance of the "Basis of Design" Systems.
   a. USG Corporation,
   b. CertainTeed Ceilings.
   c. Rockfon, LLC,
   d. Or approved equal.

2. The use of one manufacturer's catalog numbers, and the specific requirements set forth in Drawings and Specifications, are not intended to preclude the use of other manufacturer's products or procedures which may be equivalent, but are given for the purpose of establishing a standard of design and quality for materials, construction and workmanship.

C. Substitute products will be considered for substitution only when submitted to the Architect as per the requirements of AIA A232 and Section 00800.

2.2 ACOUSTICAL CEILING BOARDS

A. Refer to reflected ceiling plans for sizes and locations.

B. Where ACB-1 is indicated: 24" x 48" x 5/8" thick, square edge, CAC 33, light reflectance 89%, sag resistance; HumiGuard Plus Performance, Class A (UL), BioBlock, meets USDA/FSIS guidelines. Armstrong Kitchen Zone (Item# 672); or approved equal. [Unperforated]

2.3 METAL SUSPENSION SYSTEMS, GENERAL

A. Standard for Metal Suspension Systems: Provide metal suspension systems of type, structural classification and finish indicated which comply with applicable ASTM C 635 requirements.

B. Finishes and Colors: Provide manufacturer's standard factory-applied finish for type of system indicated. For exposed suspension members and accessories with painted finish, provide color indicated or, if not otherwise indicated, as selected by Architect from manufacturer's full range of standard colors.

C. Attachment Devices: Size for 5 times design load indicated in ASTM C 635, Table 1, Direct Hung.

D. Concrete Inserts: Inserts formed from hot-dipped galvanized sheet steel and designed for attachment to concrete forms and for embedment in concrete, with holes or loops for attachment at hanger wires.

E. Hanger Wire: Galvanized carbon steel wire, ASTM A 641, soft temper, prestretched, Class 1coating, sized so that stress at 3-times hanger design load (ASTM C 635, Table 1, Direct

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Hung), will be less than yield stress of wire, but provide not less than 12gage (0.106").

F. Type of System: Either direct-hung or indirect-hung suspension system, at Contractor's option.

1. Carrying Channels: 1-1/2 inch steel channels, hot-rolled or cold-rolled, not less than 0.475 lbs. per lineal foot.

G. Edge Moldings and Trim: Metal types and profiles indicated or, if not indicated, provide manufacturer's standard molding for edges and penetrations of ceiling which fits with type of edge detail and suspension system indicated. Provide 7/8" edge at wall angle and reveal edges.

H. Hold-Down Clips: For interior ceilings composed of lay-in panels weighing less than 1 lb. per sq. ft., or where indicated, provide hold-down clips spaced 2'-0" o.c. on all cross tees.

2.4 EXPOSED METAL SUSPENSION SYSTEMS

A. Double Web Steel Suspension System: For use where ACB ceilings are indicated. Manufacturer's standard system roll-formed from prefinished hot dipped galvanized steel with 15/16" wide exposed faces on flanges of structural members; other characteristics as follows:

1. Structural Classification: Intermediate-Duty System.

2. Finish: Painted in color as selected by Architect.

3. Basis of Design: Armstrong World Industries “Prelude XL Exposed Tee System”; USG “Donn Brand DX”, CertainTeed 15/16" Classic Stab; or approved equal.

2.5 MISCELLANEOUS MATERIALS

A Acoustical Sealant: Resilient, non-staining, non-shrinking, non-hardening, non-skinning, non-drying, non-sag sealant intended for interior sealing of concealed construction joints.

PART 3 - EXECUTION

3.1 INSPECTION

A. Examine conditions under which acoustical ceiling work is to be performed and notify Architect in writing of unsatisfactory conditions. Do not proceed with work until unsatisfactory conditions have been corrected in an acceptable manner.

3.2 PREPARATION

A. Coordination: Furnish layouts for inserts, clips, or other supports required to be installed by other trades for support of acoustical ceilings.

B. Measure each ceiling area and establish layout of acoustical units to balance border widths at opposite edges of each ceiling. Avoid use of less-than-half width units at borders, and comply with reflected ceiling plans wherever possible.

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3.3 INSTALLATION

A. General: Install materials in accordance with manufacturer's printed instructions, and to comply with governing regulations, fire-resistance rating requirements as indicated, and CISCA standards applicable to work.

B. Arrange acoustical units and orient directionally-patterned units (if any) in manner shown by reflected ceiling plans.

1. Install tile with pattern running in one direction, unless otherwise indicated.

C. Install suspension systems to comply with ASTM C 636, with hangers supported only from building structural members. Locate hangers not less than 6" from each end and spaced 4'-0" along each carrying channel or direct-hung runner, unless otherwise indicated, leveling to tolerance of 1/8" in 12'-0".

1. Secure wire hangers by looping and wire-tying, either directly to structures or to inserts, eye-screws, or other devices which are secure and appropriate for substrate, and which will not deteriorate or fail with age or elevated temperatures.

D. Install edge moldings of type indicated at perimeter of acoustical ceiling area and at locations where necessary to conceal edges of acoustical units.

1. Sealant Bed: Apply continuous ribbon of acoustical sealant, concealed on back of vertical leg before installing moldings.

2. Screw-attach moldings to substrate at intervals not over 16" o.c. and not more than 3" from ends, leveling with ceiling suspension system to tolerance of 1/8" in 12'-0". Miter corners accurately and connect securely.

3. Install acoustical panels in coordination with suspension system, with edges concealed by support of suspension members. Scribe and cut panels to fit accurately at borders and at penetrations.

4. Install hold-down clips in areas indicated, and in areas where required by governing regulations or for fire-resistance ratings; space as recommended by panel manufacturer, unless otherwise indicated or required.

E. Cooperate with other Trades for installation of their materials and equipment, particularly with those installing the ductwork, ceiling diffusers and lighting fixtures so that diffusers, lighting fixtures and other items are located on center lines of tile or on centers of joints as shown on approved shop drawings.

1. Provide additional hanger wires to support superimposed loads. Locate the supplemental hangers within 6 inches of each corner of the item being supported.

2. Where light fixtures, or other recessed items occur in ceilings, frame acoustical material properly to permit installation of such recessed items and do all necessary cutting and fitting of acoustical materials and suspension systems to accommodate same. Cut neatly around all pipes passing through ceilings. Build in fixture frames and yokes in cooperation with Electrical Subcontractor.

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3.4 CLEANING

A. Clean exposed surfaces of acoustical ceilings, including trim, edge moldings, and suspension members; comply with manufacturer's instructions for cleaning and touch-up of minor finish damage. Remove and replace work which cannot be successfully cleaned and repaired to permanently eliminate evidence of damage. Contractor is responsible for cleaning or replacement of all damaged tile, regardless of how the damage was caused and regardless of by which (Sub)Contractor.

END OF SECTION 09510

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SECTION 09900 - PAINTING

PART 1 - GENERAL

1.1 RELATED DOCUMENTS

A. Drawings and general provisions of the Contract, including General and Supplementary Conditions and Division 1 Specification Sections, apply to this Section.

B. Related Section(s):

1. Section 04200 - Unit Masonry.
2. Section 05300 - Metal Decking.
3. Section 05400 - Miscellaneous Structural Steel.
4. Section 05500 - Metal Fabrications.
5. Section 09250 - Gypsum Drywall.
6. Mechanical Work - (Refer to Plumbing and HVAC Drawings).
7. Electrical Work - (Refer to Electrical Drawings).

1.2 DESCRIPTION OF WORK

A. Extent of painting work is indicated on Drawings and schedules, and as herein specified.

B. Work includes painting and finishing of interior and exterior exposed items and surfaces throughout project, except as otherwise indicated.

1. Surface preparation, priming and coats of paint specified are in addition to shop-priming and surface treatment specified under other sections of work.

C. "Paint" as used herein means all coating systems materials, including primers, emulsions, enamels, stains, sealers and fillers, and other applied materials whether used as prime, intermediate or finish coats.

D. Surfaces to be Painted: Except where natural finish of material is specifically noted as a surface not to be painted, paint exposed surfaces whether or not colors are designated in "schedules". Where items or surfaces are not specifically mentioned, paint the same as similar adjacent materials or areas. If color or finish is not designated, Architect will select these from standard colors or finishes available.

E. Following categories of work are not included as part of field-applied finish work.

1. Shop Priming: Unless otherwise specified, shop priming of ferrous metal items is included under various sections for structural steel, steel windows, miscellaneous metal, hollow metal work, and similar items. Also, for fabricated components such as architectural woodwork, wood casework, and shop fabricated or factory built mechanical and electrical equipment or accessories. This is in addition to the prime coat specified herein.

2. Pre-Finished Items: Unless otherwise indicated, do not include painting when factory-finishing or installer-finishing is specified for such items as (but not limited to) acoustic materials and shop fabricated or factory built mechanical and electrical equipment.

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3. Concealed Surfaces: Unless otherwise indicated, painting is not required on surfaces such as walls or ceilings in concealed areas and generally inaccessible areas, furred areas, pipe spaces, duct shafts.

4. Finished Metal Surfaces: Unless otherwise indicated, metal surfaces of anodized aluminum, stainless steel, chromium plate, copper, bronze and similar finished materials will not require finish painting.

5. Operating Parts: Unless otherwise indicated, moving parts of operating units, mechanical and electrical parts, such as valve and damper operators, linkages, sinkages, sensing devices, motor and fan shafts will not require finish painting.

6. Do not paint over any code-required labels, such as Underwriters' Laboratories and Factory Mutual, or any equipment, identification, performance rating, name, or nomenclature plates.

F. Mechanical and Electrical Work: Painting of mechanical and electrical work is specified herein.

1. Painting of mechanical and electrical work is limited to those items exposed to view.

2. Mechanical items to be painted include, but are not limited to, the following:
   a. Piping, pipe hangers and supports.
   b. Ductwork, insulation.
   c. Access doors and service panels.

3. Electrical items to be painted include, but are not limited to, the following:
   a. Conduit and fittings.
   b. Backboxes.
   c. Junction boxes.

1.3 QUALITY ASSURANCE

A. Single Source Responsibility: Provide primers and other undercoat paint produced by same manufacturer as finish coats. Use only thinners approved by paint manufacturer, and use only within recommended limits.

B. Coordination of Work: Review other sections of these Specifications in which prime paints are to be provided to ensure compatibility of total coatings system for various substrates. Upon request from other trades, furnish information or characteristics of finish materials provided for use, to ensure compatible prime coats are used.

C. Industry Standards: Comply with industry standard established by the Painting and Decorating Contractors of America PDCA for applications, methods and recommendations and use of tools and equipment for paint and stain coatings, primers and block fillers.

D. Lead and Chromate Contents: All paint products must be free of any lead or chromate contents.

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E. Volatile Organic Compound Compliant (VOC.):

1. All paint products must meet the State VOC environmental regulations (OTC Regulation compliant) and the following:
   a. Chemical Components of Interior Paints and Coatings: Provide products that comply with the following limits for VOC content when calculated according to 40 CFR 59, Subpart D (EPA Method 24) and the following chemical restrictions:
      (1) Primer, Sealer and Undercoater: VOC content of not more than 200 g/L.
      (2) Specialty Primer, Sealer and Undercoater: VOC content of not more than 350 g/L.
      (3) Rust Preventative Coating: VOC content of not more than 400 g/L.
      (4) Flat Paints and Coatings: VOC content of not more than 100 g/L.
      (5) Non-Flat Paints and Coatings: VOC content of not more than 150 g/L.
      (6) Nonflat High Gloss Coatings: VOC content of not more than 250 g/L.
      (7) Aromatic Compounds: Paints and coatings shall not contain more than 1.0 percent by weight of total aromatic compounds (hydrocarbon compounds containing one or more benzene rings).

F. Paint Coordination: Provide finish coats which are compatible with prime paints used. Review other sections of these Specifications in which prime paints are to be provided to ensure compatibility of total coatings system for various substrates. Upon request from other trades, furnish information on characteristics of finish materials proposed for use, to ensure compatible prime coats are used. Provide barrier coats over incompatible primers or remove and reprime as required. Notify Architect in writing of any anticipated problems using specified coating systems with substrates primed by others.

1. At galvanized surfaces, primer shall be a zinc dust-zinc oxide coating.

1.4 SUBMITTALS

A. Product Data: Submit manufacturer's technical information including paint label analysis and application instructions for each material proposed for use.

B. Samples: Prior to beginning work, Contractor shall furnish color chips (2 fan decks) for surfaces to be painted. Use representative colors when preparing samples for review. Submit samples for Architect's review of color and texture only. Provide a listing of material and application for each coat of each finish sample.

1. On 12" x 12" hardboard, provide two samples of each color and material, with texture to simulate actual conditions. Resubmit samples as requested by Architect until acceptable sheen, color, and texture is achieved.

C. Acknowledgment of Bid Documents: Contractor / Installer shall submit to the Architect certifications signed by each of the Contractor and Installer attesting acknowledgment of requirements of the Bid Documents for specific project requirements indicated in this Specifications.

1. Installer shall submit proof of evidence, (this project Specification section) with their letter of certificate.

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2. Contractor / Installer shall not proceed with painting work of this section until submittal of required certifications are completed.

3. Any work performed prior to completion of this submittal shall be subject to total rejection by the Architect. All rejected work shall be rectified without any additional cost to the Owner.

D. Coating Maintenance Manual: Upon conclusion of the project, the Contractor in conjunction with the coating manufacturer shall furnish a coating maintenance manual such as the Sherwin-Williams "Custodian Project Color and Product Information" report or approved equal. Manual shall include an area summary with finish schedule, area detail designating where each product/color/finish was used, product data pages, SDS pages, care and cleaning instructions, touch up procedures and color samples of each color and finish used.

1.5 DELIVERY AND STORAGE

A. Deliver materials to job site in original, new and unopened packages and containers bearing manufacturer's name and label, and following information:

1. Name or title of material.
2. Fed. Spec. number, if applicable.
3. Manufacturer's stock number and date of manufacturer.
4. Manufacturer's name.
5. Contents by volume, for major pigment and vehicle constituents.
6. Thinning instructions.
7. Application instructions.
8. Color name and number.

1.6 JOB CONDITIONS

A. Apply solvent-thinned paints only when temperature of surfaces to be painted and surrounding air temperatures are between 45°F (7°C) and 95°F (35°C), unless otherwise permitted by paint manufacturer's printed instructions.

B. Do not apply paint in snow, rain, fog or mist, or when relative humidity exceeds 85%, or to damp or wet surfaces, unless otherwise permitted by paint manufacturer's printed instructions.

C. Painting may be continued during inclement weather if areas and surfaces to be painted are enclosed and heated within temperature limits specified by paint manufacturer during application and drying periods.

D. Provide sufficient temporary illumination producing overall space/room minimum illumination level of 50 ft. candles while preparing or painting of surfaces and to assure the production of quality finishes.

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PART 2 - PRODUCTS

2.1 MANUFACTURERS

A. Subject to compliance with requirements, manufacturers offering products which may be incorporated in the work include but are not limited to the following:

1. M A B
2. Benjamin Moore
3. The Pittsburgh Paints Company
4. The Sherwin-Williams Company
5. Linetec Inc.
6. Or approved equal

2.2 COLORS AND FINISHES

A. Prior to beginning work, Contractor shall furnish color chips for surfaces to be painted from manufacturers full line of products. This shall include custom colors.

1. Final acceptance of colors will be from samples supplied on the job.

B. Color Pigments: Pure, non-fading, applicable types to suit substrates and service indicated.

2.3 MATERIALS

A. Material Quality: Provide best quality grade of various types of coatings as regularly manufactured by acceptable paint materials manufacturers. Materials not displaying manufacturer's identification as a standard, best-grade product will not be acceptable.

B. Provide undercoat paint recommended and produced by the same manufacturer as the finish coats. Use only thinners approved by the paint manufacturer, and use only within recommended limits.

2.4 EXTERIOR PAINT SCHEDULE

A. Basis of Design: Provide the following paint systems for the various substrates, or approved equal manufacturer / system:

B. Semi-Gloss Enamel (Waterbased Alkyd Urethane Enamel Finish)

1. 1st Coat: Sherwin-Williams, Extreme Bond Exterior Primer.

2. 2nd Coat: Sherwin-Williams, Pro Industrial Waterbased Alkyd Urethane.

3. 3rd Coat: Sherwin-Williams, Pro Industrial Waterbased Alkyd Urethane.

4. Apply to the following exterior surfaces: Lintels, ferrous metal and other exterior assemblies to receive paint.

5. Apply as many coats as necessary to produce a uniform substrate and finish appearance.

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2.5 INTERIOR PAINT SCHEDULE

A. Semi-Gloss (Satin) Enamel:

1. 1st Coat: Sherwin-Williams, Pro Industrial Pro-Cryl Universal Primer.

2. 2nd Coat: Acrylic Enamel, Sherwin-Williams, Pro Industrial HP Acrylic.

3. 3rd Coat: Acrylic Enamel, Sherwin-Williams, Pro Industrial HP Acrylic.

4. Apply to following interior surfaces: Hollow metal work,, miscellaneous steel and ferrous metal fabrications.

5. Apply as many coats as necessary to produce a uniform substrate and finish appearance.

B. Egg-Shell / Satin Enamel - Acrylic Latex:

1. Base Coats: Enamel Undercoat; Primer-Sealer to suit substrate or Loxon Block Surfacer for Concrete Masonry/CMU Block.

   * Block Filler shall be Level 3 - Premium Fill; one or multiple coats for high performance block filler in accordance with PDCA industry standards. Apply mock-up to confirm appearance before application of finish coats.

2. 2nd Coat: Sherwin-Williams, ProMar 200 Zero VOC Eg-Shel.

3. 3rd Coat: Sherwin-Williams, ProMar 200 Zero VOC Eg-Shel.

4. Apply to the following interior surfaces: Concrete masonry units, gypsum drywall and other interior assemblies to receive paint.

5. Apply as many coats as necessary to produce a uniform substrate and finish appearance.

C. Flat - Acrylic Latex:

1. 1st Coat: Sherwin Williams ProMar 200 Zero VOC Interior Latex Primer.

2. 2nd Coat: Sherwin Williams, ProMar 200 Zero VOC Flat Interior Latex Flat.

3. 3rd Coat: Sherwin Williams, ProMar 200 Zero VOC Flat Interior Latex Flat.

4. Apply to following interior surfaces: Interior surfaces of ducts, where visible through registers or grilles, etc.

5. Apply as many coats as necessary to produce a uniform substrate and finish appearance.

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2.6 EXTRA STOCK

A. Contractor shall provide one gallon of extra stock for each color/type selected for use on the project. Provide unopened containers clearly marked with manufacturers color number and name.

PART 3 - EXECUTION

3.1 INSPECTION

A. Applicator must examine areas and conditions under which painting work is to be applied and notify Contractor in writing of conditions detrimental to proper and timely completion of work. Do not proceed with work until unsatisfactory conditions, included rotted or otherwise defective materials, have been observed by all concerned and corrected in a manner acceptable to Applicator.

B. Starting of painting work will be construed as Applicator's acceptance of surfaces and conditions within any particular area.

C. Do not paint over dirt, rust, scale, grease, moisture, scuffed surfaces, or conditions otherwise detrimental to formation of a durable paint film.

3.2 SURFACE PREPARATION

A. General:

1. Perform preparation and cleaning procedures in accordance with paint manufacturer's instructions and as herein specified, for each particular substrate condition.

2. Provide barrier coats over incompatible primers or remove and reprime, as required. Notify Architect in writing of any anticipated problems in using the specified coating systems with substrates primed by others.

3. Remove hardware, hardware accessories, machined surfaces, plates, lighting fixtures, and similar items in place and not to be finish-painted, or provide surface-applied protection prior to surface preparation and painting operations. Remove, if necessary, for complete painting of items and adjacent surfaces. Following completion of painting of each space or area, reinstall removed items.

4. Clean surfaces to be painted before applying paint or surface treatments. Remove oil and grease prior to mechanical cleaning. Program cleaning and painting so that contaminants from cleaning process will not fall onto wet, newly-painted surfaces.

5. Painting of materials shall commence only when the moisture content of the materials complies with manufacturer’s recommendations as follows:
   a. Masonry - 22% maximum.
   b. Gypsum drywall - 12% maximum.
   c. Plaster - 15% maximum.

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B. Cementitious Materials:

1. Prepare cementitious surfaces of concrete block, cement plaster and gypsum drywall board to be painted by removing efflorescence, chalk, dust, dirt, grease, oils, and by roughening as required to remove glaze.

2. Determine alkalinity and moisture content of surfaces to be painted by performing appropriate tests. If surfaces are found to be sufficiently alkaline to cause blistering and burning of finish paint, correct this condition before application of paint. Do not paint over surfaces where moisture content exceeds that permitted in manufacturer's printed directions.

C. Ferrous Metals:

1. Clean ferrous surfaces, which are not galvanized or shop-coated, of oil, grease, dirt, loose mill scale and other foreign substances by solvent or mechanical cleaning.

2. Touch-up shop-applied prime coats wherever damaged or bare, where required by other sections of these Specifications. Clean and touch-up with same type shop primer.

3. Galvanized Surfaces: Clean free of oil and surface contaminants with non-petroleum based solvent.

3.3 MATERIALS PREPARATION

A. Mix and prepare painting materials in accordance with manufacturer's directions.

B. Maintain containers used in mixing and application of paint in a clean condition, free of foreign materials and residue.

C. Stir materials before application to produce a mixture of uniform density, and stir as required during application. Do not stir surface film into material. Remove film and, if necessary, strain material before using.

D. Tinting: Tint each undercoat a lighter shade to simplify identification of each coat when multiple coats of same material are applied. Tint undercoats to match the color of the finish coat, but provide sufficient differences in shade of undercoats to distinguish each separate coat.

3.4 APPLICATION

A. General: Apply paint in accordance with manufacturer's directions. Use applicators and techniques best suited for substrate and type of material being applied.

B. Where finish schedule calls for walls or ceilings to be painted, paint all new and existing surfaces in same area. Paint from corner to corner on walls or ceilings, or to a major change in direction of surface to be painted. Provide crisp, clean, sharp lines where new painted surfaces abut existing painted surfaces.

C. **Apply additional coats when undercoats, stains or other conditions show through final coat of paint, until paint film is of uniform finish, color and appearance. Give special**

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attention to insure that surfaces, including edges, corners, crevices, welds, and exposed fasteners receive a dry film thickness equivalent to that of flat surfaces.

D. **Paint interior surfaces of ducts, where visible through registers or grilles, with a flat, non-specular black paint.**

E. Sand lightly between each succeeding enamel coat.

F. Scheduling Painting: Apply first-coat material to surfaces that have been cleaned, pretreated or otherwise prepared for painting as soon as practicable after preparation and before subsequent surface deterioration.

G. Allow sufficient time between successive coatings to permit proper drying. Do not recoat until paint has dried to where it feels firm, does not deform or feel sticky under moderate thumb pressure, and application of another coat of paint does not cause lifting or loss of adhesion of the undercoat.

H. **Minimum Coating Thickness: Apply materials at not less than manufacturer's recommended spreading rate, to establish a total dry film thickness as recommended by coating manufacturer and an acceptable finished appearance in finish, color and appearance as determined by the Architect.**

I. Primer Coat: Apply primer coat of material which is required to be painted or finished, and which has not been prime coated by others.

1. **Re-coat primed and sealed surfaces where there is evidence of suction spots or unsealed areas in first coat, to assure a finish coat with no burn-through or other defects due to insufficient sealing.**

J. **Block Fillers: Apply block fillers using manufacturer's recommended application techniques with sufficient material and coats to achieve a pinhole-free, "Level 3 - Premium Fill Surface", and in accordance with PDCA 's industry standards.**

K. Pigmented (Opaque) Finishes: Completely cover to provide an opaque, smooth surface of uniform finish, color, appearance and coverage. Cloudiness, spotting, holidays, laps, brush marks, runs, sags, ropiness or other surface imperfections will not be acceptable.

L. Completed Work: Match approved samples for color, texture and coverage. Remove, refinish or repaint work not in compliance with specified requirements.

3.5 CLEAN-UP AND PROTECTION

A. Clean-Up: During progress of work, remove from site discarded paint materials, rubbish, cans and rags at end of each work day.

B. Upon completion of painting work, clean all paint-spattered surfaces. Remove spattered paint by proper methods of washing and scraping, using care not to scratch or otherwise damage finished surfaces.

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C. Protection: Protect work of other trades, whether to be painted or not, against damage by painting and finishing work. Correct any damage by cleaning, repairing or replacing, and repainting, as acceptable to Architect.

1. Provide "Wet Paint" signs as required to protect newly-painted finishes. Remove temporary protective wrappings provided by others for protection of their work, after completion of painting operations.

2. At completion of work of other trades, touch-up and restore all damaged or defaced painted surfaces.

END OF SECTION 09900

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SECTION 15000 - MECHANICAL WORK

PART 1 - GENERAL

1.1 RELATED DOCUMENTS.

A. Drawings and general provisions of Contract, including General and Special Conditions and Division 1 Specifications, apply to work of this section.

1.2 DESCRIPTION OF WORK

A. Work shall include but not limited to the installation of exterior ductwork insulation and waterproof membrane.

B. Refer to the Mechanical Drawings and Mechanical Specifications located on the Drawings for additional information.

1.3 QUALITY CONTROL

A. Work shall be performed by workers qualified and licensed for their trade with previous work experience of a recommended minimum of 5 years'.

1. Submit letter of Subcontractors qualifications to Architect, Construction Manager and Owner prior to commencing the work.

B. Surface burning characteristics: For insulation and related materials, as determined by testing identical products according to ASTM E 84 by a testing agency acceptable to authorities having jurisdiction. Factory label insulation and jacket materials and adhesive, mastic, tapes, and cement material containers, with appropriate markings of applicable testing agency.

1. Insulation Installed Outdoors: Flame-spread index of 75 or less, and smoke-developed index of 150 or less.

1.4 COORDINATION

A. Contractor shall refer to the following sections for coordination:

1. Section 07800 - Roof Specialties and Accessories for duct work supports.

2. Mechanical Drawings and Mechanical Specifications located on the Mechanical Drawings.

1.5 SUBMITTALS

A. Manufacturers product literature and installation instructions for mechanical duct insulation, mesh, fasteners and coatings.

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PART 2 - PRODUCTS

2.1 DUCT INSULATION AND WATERPROOF MEMBRANE

A. Insulation: 703 board (2 x 24 x 48 703 FSK Facing), 3.0 pcf density, Jacket permeance (ASTM E 96, Proc. A), FRK or ASJ-0.02 Perm, as manufactured by Owens-Corning Fiberglass; or approved equal, complying with the following:

1. ASTM C 553; Type III, Class F-2
2. MIL-I-24244C; Type XVIa.
3. ASTM C 795
4. Flame Spread: 25
5. Smoke Developed: 50 (ASTM E84)

B. Galvanized self stick pin fasteners or weld pins and clips with type recommended by the insulation manufacturer for duct installation to hold insulation on ducts.

C. Pressure sensitive 3 inch wide min. joint sealing tape to match the insulation facing.

D. Reinforcing membrane: High-strength open weave pre-sized and resin treated fiberglass cloth membrane, 10 x 10 strands per sq. inch x 0.004 inch thick; 1.6 oz. per sq. yd. Tensile strength: 75 lbs./sq. in. and fill of 75 lbs./sq. in. when tested in accordance with ASTM D 579. Membrane shall be Chil-Gas #10 as manufactured by Childers Coatings, Adhesives and Sealants; or approved equal.

E. Duct Insulation Fibrated Asphalt (Asbestos Free) Coating: IMC 1001, emulsion of highly ductile asphalts non-flammable with heavy glass fibration to mastic-like consistency to provide a breather-type film with a vapor transmission of 0.5 to 1.0 perms (freshly cured 1/16 inch dry film; .25 to .5 perms for weathered films) as manufactured by IMC Corp.; or approved equal. Insure that coating is compatible with insulation and fiberglass mesh.

1. Emulsion primer: 100-01

PART 3 - EXECUTION

3.1 INSPECTIONS

A. Contractor shall verify all conditions in the field prior to commencing work.

3.2 MECHANICAL DUCT AND INSULATION

A. Raise equipment on curbs secured to deck, raise piping and wiring as required by new work; fabricate new duct transition to provide equal cross section area and shape to existing duct to be removed; seam to existing duct to remain as required.

B. Install duct insulation over metal duct to provide smooth transition utilizing self stick pins or weld insulation pins on duct spaced no greater than 3 inches from each edge or corner of the board. Pin spacing along the duct shall be no greater than 12 inches on centers. Provide additional pins to hold insulation at duct cross breaks. Weld pin lengths must be selected to ensure tight fit but avoid "oil canning".

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1. Wear protective clothing, masks and eye protection when handling fiberglass insulation.

C. Cover pins and clips with vapor sealing pressure-sensitive patches matching insulation facing. Rub hard with a nylon sealing tool to ensure a tight bond and a vapor seal.

D. Insulation joints shall be sealed with pressure-sensitive patches matching insulation facing. Rub hard with a nylon sealing tool to effect a tight bond. Utilize 3 inch wide tape on flat surfaces or where edges are shipped, lapped and stapled; 5 inch wide tape shall be used in lieu of shiplapping. All sheet metal duct joints shall be sealed prior to insulating.

E. Prime insulation substrate as recommended by waterproof coating manufacturer. Wrap duct insulation with fiberglass mesh as required by finish coating manufacturer; imbed mesh in tack coat of protective coating; then apply finish coat immediately. Overlap all seams of glass membrane a minimum of 2 inches. Apply protective coating while prime coat is still tacky, as it comes from the container at a rate of 8 gallons per 100 sq. ft. in 1/8 inch wet film thicknesses (providing a dry film of 1/16 inch, minimum). Finish protective coating shall be smoothly trowelled. After drying, provide finish painted coating as recommended by protective coating manufacturer in color to match existing duct insulation to remain.

1. Apply all coats of protective coating in accordance with the manufacturers printed instructions.

2. Do not apply insulation, mesh and coating when it rains. Protect from watersplash until completely dry. Allow to completely dry 3 weeks prior to applying painted finish.

END OF SECTION 15000

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